

Submission to Call for Evidence on the government's approach to flood risk of inland flooding in England by the Environment Food and Rural Affairs Committee

Paola Sakai

Policy report

July 2020

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About this submission

On the 4th March 2020 the The House of Commons Environment Food and Rural Affairs Select Committee launched an inquiry scrutinising the Government's plans for flood risk management in England. Building on the lessons learned from the 2019/20 winter weather, MPs will question the level of Government investment, the involvement of affected communities in decision making, and how natural flood management measures can be integrated into the Government's approach. The Committee will also investigate the role of insurance and planning policy in protecting businesses and property from flooding. For more information, see:

<https://committees.parliament.uk/work/107/flooding/>. This paper summarises the submission to this inquiry by Paola Sakai. A pre-published version was submitted to the call for evidence on 15th May 2020. This version of the submission was copyedited by Cecilia De Ita.

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This policy paper is intended to inform decision-makers in the public, private and third sectors. It has been reviewed by at least two internal referees before publication. The views expressed in this paper represent those of the author(s) and do not necessarily represent those of the host institutions or funders.

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1. Response to the Environment Food and Rural Affairs Committee inquiry into the government's approach to flood risk of inland flooding in England

Key messages and recommendations

- A unified flood risk management framework for SMEs is urgently needed, because the negative effects of flooding on SMEs affect entire towns located in flood-risk areas. The Government should prioritise the development of a flood protection policy framework to increase the resilience of SMEs so they are prepared not only for the next flood, but also for future climate change, and other risks.
- Size matters. Size and turnover should be taken into account when assessing the economic losses of flooding on SMEs and insurance affordability to better understand the extent of the issue. Examining the economic costs relative to turnover and number of employees reveal the real extent of the impacts of flooding on SMEs.
- Economic costs are significant to the towns and cities. The negative consequences of flooding on SMEs exert ripple effects in their communities, thus their protection should be of interest to the wider community, local and national Government.
- Market failure. There is imperfect information that insurers have on the economic costs of flooding on SMEs, and the effectiveness of property flood protection.
- More needs to be done to fill-in the gap in the understanding the economic costs of flooding on SMEs, and the effectiveness of property flood protection. This is key to offer affordable and suitable insurance products in flood-risk areas.
- Affordable insurance. There is a genuine need to offer better and affordable insurance products to SMEs (particularly the smallest) in flood-risk areas.
- A new joint partnership of the Government and the insurance industry should be established for towns at flood risk. Insurance could be a driver of self-protection and a driver to unlock investments if it is tied to the take-up of resilient measures and reflected on the price. The Government should seize the opportunity to establish a new scheme focused on SMEs in towns at flood risk, and home-based businesses, the smallest and landlords should be prioritised.

Response given to selected questions posed by the inquiry

Given the challenge posed by climate change, what should be the Government's aims and priorities in national flood risk policy, and what level of investment will be required in future in order to achieve this?

SMEs are the backbone of the economy and the Government should prioritise the development of a flood protection policy framework to increase the resilience of SMEs, so they are prepared not only for the next flood, but also for future climate change. The evidence that is presented here is clear in that there is a need to change the approach on how we assess the impact of flooding on SMEs, as there are many hidden factors that mislead the real impacts. The evidence shows how the smaller the business, the bigger the economic losses, and shows that examining the losses relative to turnover and number of employees can better reflect the real size of the impacts of flooding on SMEs. For example, for businesses with 0-4 employees, the economic costs represented 423% more of what they earn in one month. This means that a particular SME would need to have had savings of 4 months of its average income to make up for the economic impact of one flood event. The average economic costs are £46,500. If that money was invested to build the resilience of that SME prior the flood event, then no loss would have been incurred and the local economy could have recovered in a better manner. The Government should facilitate capacity building processes so SMEs are able to protect themselves. The government should also have a more coherent message and, instead of providing grants to recover, which might create a moral hazard, money should be made available to build resilience prior a flood event. The economic costs of flooding on SMEs are significant and they exert ripple negative effects in the communities at flood risk and beyond. Flood impacts on SMEs could trigger a downward-spiral effect that can erode the character and vibrancy of towns and the wellbeing of their inhabitants. Resilient towns need resilient homes and resilient SMEs. The Government should enable mechanisms to overcome the barriers of flood protection of SMEs. For instance, there is a genuine need to ensure the affordability and accessibility of insurance in flood risk areas. The report offers valuable analysis and insights that can inform the development of this framework, and the various findings contribute to advance the discussion.

How can housing and other development be made more resilient to flooding, and what role can be played by measures such as insurance, sustainable drainage and planning policy?

Insurance can play a big role in building resilience on SMEs' premises. However, the Government should intervene, as there is a market failure in terms of imperfect information that insurers have on the economic costs of flooding on SMEs. This is preventing flood protection of SMEs. There is a lack of understanding on the economic costs of SMEs and the risks they represent to the insurance industry. This uncertainty is translated into the price. Despite efforts made to work with SMEs by the industry, there are still questions regarding the affordability of the industry innovations, particularly for the smallest SMEs, for instance, we found that for SMEs with 0-4 employees, the average costs of insurance would equal their average monthly sales. Insurance could be a driver for self-protection if it is tied to the take-up

of resilient measures, and this is reflected in the price or conditions of insurance. SMEs not only would appreciate being recognised for their self-protection, but would also be encouraged to adopt property resilience measures. Nonetheless, this demands a better understanding of the economic costs of flooding on SMEs, as well as of the effectiveness of resilience measures that can be put in place, and the implementation of related standards and accreditation schemes. The report explores the question, '*Should Flood Re be extended to SMEs?*', and it details the major barriers and the benefits of that. Creating a new Flood Re scheme that enables and prepares SMEs for a future of affordable insurance, where the government and the UK insurance industry join efforts to support and incentivise community resilience might not be the answer to all SMEs, if the political will and the industry appetite are not there. Explorations should be made to include at least some type of SMEs, such as home-based businesses, the smallest SMEs and landlords. As the evidence shows, home-based businesses need extra support as they experience double impacts when flooded, e.g. a Bed & Breakfast might not be able to accommodate guests so it will have a negative economic consequence on the livelihood of the owner, while also the owner might be left without a place to live. Schemes such as Flood Re could be explored to include this type of firm so they are incentivised to implement property resilience measures, and it is protected in the future. Explorations should be made regarding if the number of employees and the turnover could serve as a proxy to determine affordability of insurance (like Council tax bands are for households) as this evidence showed the importance of looking at the relative size of the firm. In terms of businesses that rent their premises also have double economic impacts if the premises are flooded. There is an economic repercussion to the SME that rents, in addition to an impact to the landlord's income (e.g. cover repairs, deal with unpaid rents, ending contracts early), that without considering the impact to the town if the business is closed. The Government should require that there is clarity in tenancy agreements between landlords and SMEs regarding flood risk management responsibilities. And, landlords should be encouraged to take up insurance linked with investments in property resilience measures.

A unified flood risk management framework for SMEs is urgently needed. This report offers valuable analysis and insights that can inform the development of this framework, and the various findings contribute to advance the discussion. Encouraging the creation of resilient SMEs is a worthy effort as the economic impacts they experience have ripple effects across local and regional economies. Moreover, wetter future winters that are expected with climate change, and black swans such as Covid-19 give us the opportunity to re-think the urgent need to increase the resilience of this vital actor of the socio-economic system, which not only drives employment and growth, but also constitutes an essential fabric of our communities.

Methods of analysis

This research followed a mixed-methods approach. To fulfill objective (I), a quantitative online survey was conducted to collect data on economic costs. In total, 319 SMEs participated in the survey, among which 283 (88%) SMEs in Calderdale responded one month after the 2016 floods, and 36 (12%) SMEs from different parts of the country responded between March and August 2018. Semi-structured qualitative interviews were conducted with 39 interviewees from five stakeholder groups: academics, government, local government, insurers, and support organisations. The survey data was coded and the interviews transcribed. After analysing the results, a reaction workshop was conducted to share results and receive opinions and recommendations from 9 stakeholder representatives.

What did we find?

Relative Economic Costs to SMEs

Economic impacts on small companies are under researched. Current approaches to assess damages on small firms take into account average economic costs, leaving behind the nuances related to the size of the business. When identifying which size of firm has the biggest losses, it is normally stated that the bigger the business, the bigger the economic losses. However, the research found opposite results when the number of employees and the annual turnover was considered. Businesses with less than 5 employees experienced the higher economic losses, rather than the bigger businesses (i.e. the economic losses of a single flood event represented 423% more of what they earn in one month). To put it differently, for every £1 of losses, the monthly sales of a business this size would only cover £0.25, meaning that it will take around 4 months of saving its entire monthly sales to cover the losses due to the flood. For businesses with 5-9 employees, the loss relative to the turnover was 119%. The losses of firms with 10 to 19 employees had a relative economic cost of 66% of their monthly turnover. In this manner, the smaller the business, the bigger the losses. Thus, it is crucial to consider the relative costs when assessing SMEs economic costs.

Different type of costs

The research also found that there are differences between the types of costs experienced by SMEs depending on their size. For bigger businesses, the most important thing is to secure equipment. However, for smaller businesses, structural damage to their premises represents the higher losses. Consequently, investing in property resilience measures can contribute to minimise the losses. This knowledge can be useful to target interventions that are more fruitful.

Double impacts: Home-based businesses and landlords-tenants

We found that there are double impacts which are often ignored when assessing the impact of flooding on SMEs. On the one hand, home-based businesses experience higher impacts as a flood event has negative economic consequences not only on the livelihood of the business owner, but also on her/his personal life (e.g. a bed and breakfast might not be able to accommodate guests, while the owner might be left without a place to live). Renting premises can also have a double economic impact. If the premises are flooded, there will be an economic

repercussion to the SME that rents, in addition to an impact to the landlord's income (e.g. cover repairs, deal with unpaid rents, ending contracts early).

There should be more clarity in tenancy agreements regarding flood risk management responsibilities. Moreover, landlords should be encouraged to invest in property resilience measures.

What will happen to towns if businesses start leaving because of constant flooding?

SMEs are essential to communities. Losing businesses as a result of flooding would have a negative effect throughout towns. If SMEs move away, there are risks that need to be taken into account: loss of a town's attractiveness and character, erosion of the customer base, less variety and diversity of economic activities, increase in undesirable activities linked to more redundant buildings, impact on local budgets (reduction of tax revenues and increases in unemployment claims), disruptions of supply chains, families moving out in search of employment. There are opportunities to avoid this, and places can be reinvented. However, there are difficult discussions, choices and decisions that need to happen today.

The type of flood risk management strategies also varies with size

SMEs are more likely to implement short-term strategies to minimise an imminent flood risk, rather than strategies to prevent future risks. The size of the firm also determines the different strategies SMEs take to manage their flood risk. The smaller firms (0-4 employees) normally monitor early warning systems, secure equipment, and move stock and important information. However, they are less likely to talk to suppliers or customers to rearrange deliveries. Bigger businesses are more likely to have a flood risk plan or have undertaken property resilient measures than smaller businesses.

Community self-organisation

Self-organisation has been one of the mechanisms that SMEs and their communities can use to overcome flooding impacts. For instance, to anticipate the hardship of coping with a flood event, 'Flood Save' was developed in Calderdale. 'Paddingham market' or 'Open Source Arts hub' are other examples of businesses pulling resources together to be better prepared. A key finding is that it is imperative to acknowledge that not all communities at flood-risk have the capacity to self-organise. Trust, social networks and a strong sense of community are needed in order to nurture a business community that is able to self-organise around a common goal.

Government flood grants for SMEs

The aid provided by the government in the form of resilience or recovery grants would be better spent to build capacities before the flood, and not after it. Otherwise, the grants can be seen as a political choice. There is a need to train people to deliver grants, or find another mechanism to get the grants to the hands of SMEs.

Challenges regarding insurance and SMEs

The survey results show that SMEs reported various issues regarding insurance: affordability (high excess/premiums), availability (in the past/future), speed of payment, lack of understanding about what the policy covers, and resilience measures not considered in the pricing. Results show that interviewees were particularly interested in knowing if the insurance problems faced by SMEs are a

widespread issue in the country. Results show that it is likely that the problems are localised. As a local problem, there is a need to examine the issue in flood risk areas to assess its significance.

In terms of affordability, insurance is problematic for the smallest businesses. Results show that it is useful to see the 'relative price' of insurance to examine if the price is affordable. SMEs with 0-4 employees had to pay around 170% of their monthly turnover. On average, their insurance costs are around £6,000 and their turnover is along those lines, so they would need to save almost its entirely monthly sales to buy insurance (without considering the costs to run the business). However, the average losses were £24,000, so they would need to save almost 4 months of their turnover to cover the economic costs in case of flooding. The unaffordability of insurance reported by some SMEs was £7,576 on average. There is a need to support the smallest SMEs to get affordable insurance. The majority of the small businesses (0-4 employees) that reported not having insurance were not being able to get a quote (86%) or the quote was not affordable (100%).

The research shows that there is imperfect information that is preventing flood protection for SMEs. Insurers do not understand the risk that SMEs represent to the insurance industry, as SMEs' activities are diverse and difficult to commoditise. Uncertainty represents high risk, which is reflected in the prices. Results show that the industry is trying to work with SMEs in high-risk areas. Strategies, such as increasing premiums/excess, or re-insuring the excess, have helped the industry to manage their risk exposure and offer in some cases better prices. There is still the question if those innovations are being effective. Insurers need to improve their understanding in this matter as the first step to offer more suitable products to SMEs.

There is a lack of understanding of the effectiveness of resilience measures implemented by SMEs. This is particularly important for insurers, since this knowledge would allow them to manage better their risk exposure. If resilience measures are effective, the price of insurance for SMEs could be reduced. There is evidence that the industry has explored ways to take resilience measures into account in order to improve the price of insurance. However, more efforts are needed to better understand the effectiveness of resilience measures, as well as the economic costs of flooding for SMEs and the development of standards and accreditation schemes that the industry can rely on.

Moral hazard

It was acknowledged that some businesses that have never been flooded might hold the belief that the government will help them in the event of flooding. However, the majority of the interviewees disagreed with the idea that businesses do not protect themselves, believing that they will receive help. Businesses that have flooded in the past know that this support is not enough to recover. It was also noted that this is a cultural issue, which might not be as common in businesses as it is in households. Nonetheless, there might be expectations that funding will be made available and that government will pay if something goes wrong. In this sense, it is important to improve the coherence of the messages delivered by government. In the event of flooding, government (and insurers) will help to a certain extent, but SMEs should ultimately be responsible for their own protection.

Barriers to flood risk management

The inherent characteristics of SMEs act as barriers that prevent businesses to engage in flood prevention: lack of time, lack of resources and the need to prioritise

day-to-day activities and survival. Common behavioural barriers were also identified, such as a lack of understanding and awareness of their own risks, including an 'ostrich-denial stand' (i.e. flooding will not happen to me). Businesses also find it difficult to decide which information is reliable in terms of what works or not, apart from who they can rely on. The lack of trust opens the door to opportunists, generates scepticism and undermines the willingness of SMEs to protect themselves. The type of building and the ownership of premises, can also act as barriers for SMEs to implement resilience measures. For SMEs that rent their premises, landlords need to be convinced to invest in flood protection. Moreover, lack of clarity in tenancy agreements and insurance policies can hide flood risk vulnerabilities for SMEs.

Targeting interventions

To increase the receptiveness of flood-risk and preparedness information, it is important to deliver it in a timely and positive manner. This information should also be easy to understand, and it would be useful to transmit experiences and stories of other affected businesses. Information is better delivered face-to-face and using the existing business structures and traditional communication channels (e.g. breakfast clubs, newsletters). It is also useful to communicate through websites, insurance brokers, and the regulatory business-facing areas of the councils, who are already in contact with SMEs. However, it was pointed out that some of those channels might not work with very small businesses.

The impact of flooding and the ability of SMEs to prevent damage will vary substantially across businesses. However, the research sheds light on some common aspects that can be used to target interventions. Results indicate, for instance, that it is useful to examine which are the essential things that SMEs need according to sector (i.e. SMEs in the manufacturing sector might need cash-flow support, while wholesale and retail might need access to their customer base; B&Bs require dry premises to receive guests; and home-based consultant services might need online services, etc.).

Incentivise insurance take-up

The role of the broker is essential. In addition, coordinated standards and certification schemes are important in order for businesses to be able to trust that the resilience products they buy are effective.

Flood Re+ SMEs

SMEs could increase their resilience with a scheme such as Flood Re, which provides affordable insurance and encourages self-protection. However, there are numerous barriers. Among them, there is a lack of political will. In addition, insurers might not find the scheme commercially attractive and, more importantly, there is uncertainty on the level of risk that SMEs represent. Moreover, this gives rise to a deeper question about what society wants to protect and who should bear the costs. Finally, it is clear that some businesses would win and other would lose. However, if a scheme was carefully designed to encourage protection (e.g. compulsory take up of resilient measures), then it could be an opportunity to increase resilience. It was suggested that at least small businesses and home-based firms should be included, perhaps on the basis of their turnover.

Making flood insurance compulsory to SMEs

This was explored as an option to push self-protection in SMEs. Some interviewees welcomed the idea, arguing that if SMEs are protected, it will help the risk

management of entire areas, as well as the wider supply chains and even businesses that rent their premises. However, if insurance was made mandatory, there would be a need to have more comprehensive flood management strategies, and SMEs would be encouraged to increase their uptake of property resilience measures. However, its implementation would be very complex. It would not be fair if affordability issues are not resolved. Moreover, there is resistance to change, and the government would not be willing to impose a burden on SMEs. Exploring this question was an interesting exercise. As one of the interviewees expressed: *"If we drive a car, you have a car insurance. Why, if you live in a flood zone... should you not have flood insurance? I don't get it"*.

3. The evidence structure

Background

Flooding is highlighted as the UK's most predominant natural hazard (Committee on Climate Change, 2015). It has been estimated that 1.1 millions of non-residential properties are at risk from all sources of flooding (Sayers et al., 2015). In the following years, a significant increase is projected in the amount of properties at risk (S. Surminski et al., 2016). Flooding is rarely good business, and for small and medium enterprises (SMEs) it is sometimes a matter of survival. The flood incidents experienced in 2012 and 2015 in the UK resulted in damages amounting in total to more than £200 millions of direct losses including homes, roads and bridges (Department for Environment Food and Rural Affairs, 2015). For small businesses the 2013/14 winter floods left approximately £830 million in overall costs (The Guardian, 2014a). The number of business units affected in 2013/14 ranges from 3,189 to 4,897 (Chatterton et al., 2016). More recently, the 2015/16 winter floods left around 3,158 businesses flooded, and as September 2016 some businesses were still recovering (Local Government Association, 2016). In the 2015 Boxing Day floods, Calderdale losses on SMEs amounted to £47 million, whilst the knock-on effects across the regional economy amounted £179 million pounds (Sakai et al., 2016). Approximately 91,000 non-residential properties are located in areas at a high likelihood of flooding from rivers or the sea, and 73,000 also face a high chance to be flooded from surface water. Just in the case of non-residential properties at risk of flooding from rivers or the sea, there are around 3.2 million people employed (Committee on Climate Change, 2015). The Government has taken action to prevent flood damage to businesses in different ways, but the risks prevail particularly for small firms (Committee on Climate Change, 2015; HM Government, 2017). Small and medium-sized businesses are considered to be the most vulnerable within the private sector to this type of impacts. A statistical release by the Department for Business Innovation and Skills (2014) highlights that SME's account for 99.3% of all private sector business, providing 60.3% of employment, and contributing an estimated £1.8 trillion (47.2%) to the private sector turnover in the UK. Nonetheless, they remain being the less prepared in times of crisis, understudied and overlooked in flood resilience efforts (Hernández, 2013; Ingirige & Wedawatta, 2014; S. Surminski et al., 2016).

Recurrent floods have a great impact on the business sector, as they can destroy the assets of a company, but they may also bring disruptions in the supply of raw materials or of public services (HM Government, 2017). In this sense, SMEs are vulnerable not only because of the direct physical effects, but also due to several indirect factors. For instance, after the 2007 summer floods in the UK, several disruptions were experienced in public infrastructure (e.g. electric power, telecommunications, water, and transportation) (Pitt, 2007). SMEs rely on those services to undertake their normal activities. Hence, these type of disruptions were among the main reasons for business closures during the aftermath of disasters (Tierney, 1997). Another important disruption that enterprises have experienced is related to their supply chain. Businesses cannot continue their normal operations if the supply of certain products is not available (Runyan, 2006) and this could trigger a domino effect in the supply chain as more businesses could be impacted (Thun et al., 2011). Floods and other natural disasters can also modify the market structure of

a place, since they can change customer traffic, or even a destruction of the customer base (Zhang et al., 2007). This distributive effect could make some industries thrive, as for others, there can be a decline in consumer demand (Webb et al., 2000). For instance, the increase in demand of construction materials after a flood can benefit the construction sector; or the increase in demand of adaptive protective goods and services, as a result of climate change projections (Committee on Climate Change, 2015). Flooding events can also diminish worker productivity, as employees may have experienced disaster-related difficulties at home. Employees can be injured or ill, or even fatalities can occur. Several scholars have claimed that recovering from these "hidden" factors is at least as important as the direct losses (Chang & Falit-Baiamonte, 2002), and they are harder to estimate.

The UK Climate Change Risk Assessment Report (S. Surminski et al., 2016) mentions that it is urgent to investigate how businesses respond to climate risks and which opportunities they have to manage impacts like flooding. One way to protect the livelihoods and assets of SMEs is to increase their adaptive capacity (S. Surminski et al., 2016) and their coping capacities (Hernández, 2013). The uptake of property resilience measures is receiving increasing attention, particularly since there is a growing view that the biggest challenge for flood risk is not the direct impacts, but the indirect implications around business continuity and the supply chain (Bhattacharya-Mis & Lamond, 2014). If SMEs are unable to assess their own risks, this will have an effect on their supply chain. Only 19% of the surveyed SMEs by the Federation of Small Businesses (2015) reported to have taken action to manage the impact of severe weather on their supply chain, while only 27% have a resilience plan in place that is specifically for severe weather. Evidence continues to show that the uptake of adequate property-level and financial resilience measures among SMEs remains low, increasing the future risk for these vulnerable businesses, their supply chains and the community where they are embedded (Bonfield, 2016).

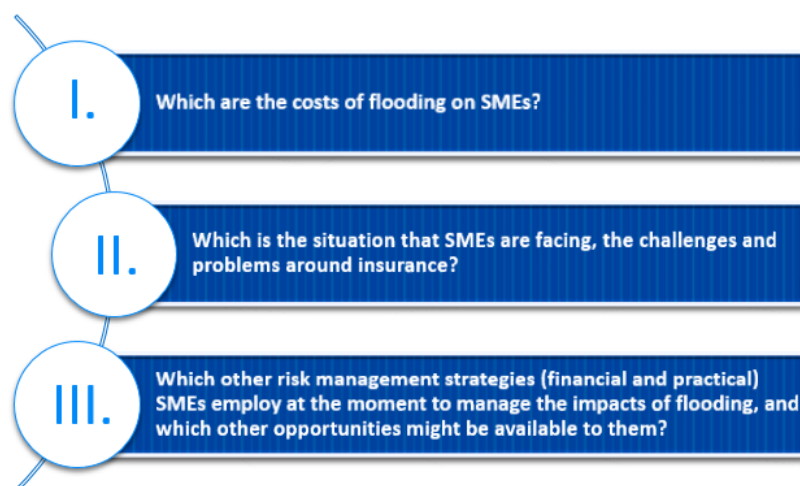
With every flood event, public money is directed to support the recovery of businesses. In 2012, in Calderdale, for example, £210,000 were provided to assist businesses to recover from that year's flood. At a national level, the government paid out over a total of £250 million as part of the support package of up to £5,000 grants for both homes and businesses to recover from the 2015 winter floods (Bonfield, 2016). While welcomed, it has been also found and stressed that financial challenges exist, and eligibility criteria is required for these specific grants. Moreover, those schemes seem to be palliatives for the short-term, as there is no evidence of their functionality to mitigate future risks. Furthermore, they might be creating a moral hazard if businesses expect to receive those grants every time they are flooded, which may reduce the urgency to protect. It is important to investigate how SMEs are able to protect themselves from future flooding impacts.

Financial protection against flood risk has been recognised as a key mechanism to increase resilience to flooding for SME's (S. Surminski et al., 2016). Concern about affordability for residential cover in flood hazard areas led to the creation of Flood Re, a scheme where premiums are subsidised. Established by the 2014 Water Act, the Government and the UK insurance industry launched the 'Flood Re' scheme to support properties in high-risk areas by providing affordable insurance. This is a transitory scheme established initiated in April 2016, where the premiums are fixed according to council tax band and subsidised through a levy imposed on all insurers for 25 years. This first step could benefit households if properly linked to additional risk reduction measures. However, it is uncertain if this scheme would work for SMEs in the face of increasing impacts (Federation of Small Businesses, 2015). Flood Re has

been considered by some as a retrograde action, as it covers all homes, including high-income households, but excludes micro-businesses, small businesses, charities and co-operatives in high-risk flood areas. This questions the notion of fairness and risk-sensitivity discussed by O'Neill and O'Neill (2012) in helping vulnerable homes and businesses combat flood risk, and questions the overarching aim of the Flood Re policy, which is to provide assistance to those likely to be disadvantaged. However, the government carried out an assessment of the policy intervention for small businesses and did not find evidence to justify the inclusion of commercial insurance products, and consequently businesses were out of the scope of Flood Re: *"Post-consultation there remains insufficient evidence to justify the inclusion of commercial insurance products in this intervention and businesses are therefore out of scope from the policy"* (Department for Environment Food and Rural Affairs, 2013, p.9). The argument was that flood insurance is widely available for SMEs, and brokers can help SMEs secure flood cover. Although it has been recognised that for a few SMEs finding affordable insurance can be a challenge, at an aggregate level, the government and the industry, were confident that this is not a widespread issue. However, *'if and how the government intervenes in flood insurance'* partly depends on recent loss experiences (Surminski et al., 2015), and has been noted that *"should significant evidence emerge of a systemic market failure in these sectors, the government and the ABI have agreed to discuss the way forward"* (Annex D). The door is then opened to receive new evidence. Several recent reports and authors highlight concerns regarding the affordability, excess, efficiency and benefits of insurance for SMEs (Bonfield, 2016; Environmental Audit Committee, 2016; Federation of Small Businesses, 2015; Sakai et al., 2016; S. Surminski et al., 2016; The Guardian, 2014b; Van Dijk, 2015).

Objectives

The objective of this project was to improve our understanding of flood insurance for SMEs, and to establish if SMEs have flood insurance problems. If so, how they could be overcome,? And which other risk management strategies could be available for SMEs? Overall, this project aims to provide evidence on the risk management strategies that SMEs have to manage flooding, including insurance. By doing so, it contributes to the development of a flood protection policy framework that can increase the resilience of this backbone of the economy.



This research followed a mixed-method approach with quantitative and qualitative data that could provide a broader view of the situation of SMEs. On the one hand, to fulfil objective (I), an online survey was developed targeting affected businesses in flooded regions across UK (See Table below). The unit of analysis were small and medium-sized enterprises (SMEs), understood as that type of organisation that employs up to 250 employees. We made a distinction within this category to provide more granularity in the results to acknowledge the different resources that micro firms have over medium ones. In this sense, the data is presented in four categories: businesses with 0-4 employees, businesses with 5-10 employees, businesses with 11 to 19 employees, and finally businesses with more than 20 employees.

The data comprises 319 SMEs, 88% of them are located in Calderdale and they responded the questionnaire one month after the 2016 floods. The other 36 SMEs responded the questionnaire between March and August 2018 and are businesses from different parts of the country. We acknowledge that the quantitative results do not represent a statistically significant sample of the whole country. Nevertheless, it is the first detailed data of economic costs conducted so far and these 319 businesses do provide evidence of the problems that SMEs are facing in towns at risk of flooding.

Table 1. Businesses affected by flooding

| Location | Number of businesses affected |
|--|-------------------------------|
| Leeds | 375-400 |
| Rochdale (Greater Manchester) | (275 homes & Business) |
| Bury (Radcliffe/Redvales) | 670 |
| Littleborough | 175 |
| Salford (Lower Kersal, Lower Broughton and Cheetham) | 750 |
| Cumbria (Appleby, Keswick and Kandal) | 897 |
| York | 200 |
| North Yorkshire | 96 |
| Hull & East Riding | 300 |
| Northumberland | 90 |
| Kirklees | 10-65 |
| Lancashire | 533 |
| Calderdale | 945-1250 |
| Bradford | 100 |
| Wakefield | 20 |

Source: WYCA (2016), and LGA (2016)

Qualitative interviews provided a deeper understanding of the issues that SMEs are facing across the country, specifically the barriers and opportunities of insurance as a risk management strategy and other innovative strategies, which is the sub-objective (II) of this research. In this sense, the qualitative data comprise 39 semi-structured interviews carried out mainly over the phone. The targeted interviewees were people involved in flood related issues and with knowledge of SMEs across

different areas: Local Council officials, National Government officials, as well as academia, insurers and community organisations. Each interview lasted approximately an hour and was recorded following the formal consent given by the research participants. The interviews were carried out during two main phases: from September-October 2017 and from January to May 2018. All interviews were transcribed and then analysed using the Nvivo 11 software. The analysis involved identifying large thematic groups related to the situation that SMEs have faced in terms of flood insurance, and the strategies, challenges and opportunities available for them to manage their flood risk. To maintain confidentiality a code was given to each participant being: Supp= interview of a person from an organisation that supports SMEs (e.g. Federation of Small Businesses, Chamber of Commerce); Gov= interview of a person from the National Government (e.g. Defra); LGov= interview of a person from a Local Government of a flooded area; Aca= academic specialised in SMEs; Ins= interview of a person from the insurance industry. The numbers attached to the codes serve to identify the interviews. Below is the distribution of the interviews conducted by stakeholder group and Annex C shows the participating organisations.

A reaction workshop was conducted with the aim of sharing the results of the research and receive feedback of the work, as well as to identify recommendations that should be put forward. The workshop was called “*Building a Framework for Flood Risk Management for SMEs*”. It took place at the University of Leeds on 16th April 2018. It consisted of 9 participants from various stakeholder organisations: academia, local authorities, national government officials, insurers and community organisations. The workshop was divided into two main parts. The first consisted of a presentation of the latest research findings and was then followed by feedback from the group. Participants were divided into two main groups of 4-5 people. Each group was first asked to discuss the current situation of SMEs flood risk management. This was followed by a discussion of what an ideal future for SMEs flood risk management would be. As a follow-up, participants were asked to come up with the key elements of change needed to achieve that ideal scenario for small businesses. The last section of the workshop focused on the question as to whether help should be given to the private sector. As a conclusion, one representative from each group was asked to present the main outcomes to the whole group. The discussions that took place were recorded following the formal consent of the participants. These were then transcribed and analysed using NVivo. The outcome of this workshop is presented here and was useful to inform the recommendations of this research.

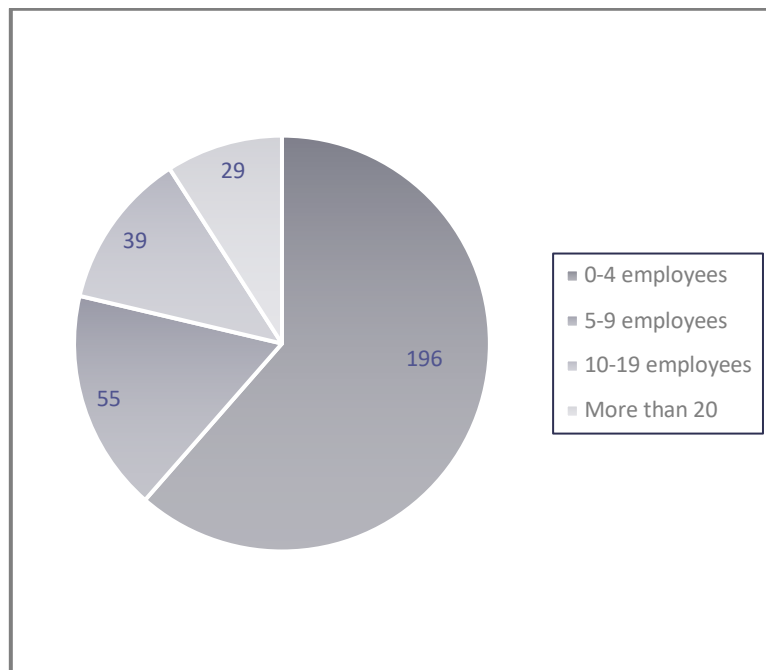
Table 2 Number of participants

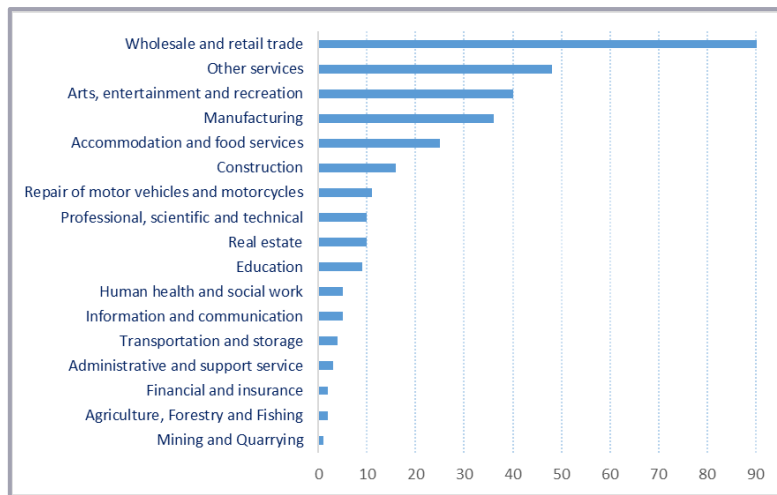
| | |
|-----------------------|------|
| SMEs | 319 |
| Interviews with: | 39 |
| Academics | (4) |
| Government | (4) |
| Local government | (11) |
| Insurers | (6) |
| Support organisations | (14) |
| Workshop participants | 9 |

4. Economic costs of flooding to SMEs

Flooding events can significantly impact the operations of small companies; however, the economic impact is not yet well researched nor understood. In the scarce research conducted on the subject, the common approach to analyse the costs of flooding on SMEs is to consider the total and average economic costs. However, the next sections show how, by using a different approach, we can get not only different results, but also more granular information that can inform future flood management strategies for SMEs. This section analyses the responses from 319 SMEs. As Figure 1 shows, the majority are firms with 0 to 4 employees (61.44%), followed by 5 to 9 employees (17.24%), 10 to 19 employees (12.23%) and 9.09% with between 20 and 250 employees. The majority of the businesses belong to the whole and retail sector (28.84%), followed by other services (28.84%), arts and recreation (12.54%), manufacturing (11.29%), accommodation (7.84%), construction (5.02%), repair of motor vehicles and motorcycles (3.45%), professional, scientific and technical (3.13%), real state (3.13%), and the rest of the activities having less than 9 participants per sector.

Figure 1. Size and Main economic activity of the participant SMEs





Relative average costs

In terms of the economic costs, businesses were asked to state the estimated monetary value of the overall costs caused by either the 2016 floods, in the case of Calderdale, or the worst flooding event they have experienced in their respective towns. The data shows that the total economic costs of the 319 participant businesses was £48,685,792.11 and the average loss per business was £42,065 (5% trimmed mean). The results show consistency between the responses provided by the SMEs in 2016 in Calderdale (N=283), where the average loss per firm was £46,491, while the economic costs of the businesses surveyed in 2018 situated in other parts of the UK (N=36) reported similar average losses (trimmed mean £47,142, SD=123,468), $t(280)$, $p=0.71$). This suggests that the economic costs of flooding per small and medium size business is around £46,500.

Flooding events can exert negative consequences to businesses. The logic dictates that bigger businesses have more assets to lose. It can be seen that businesses with more than 20 employees have on average losses of £433,018. While businesses with less than 5 employees have on average losses of £26,462. Businesses with 5-9 employees reported losses on average of £74,680, and those with 10-19 employees the average loss was £124,183 (outliers excluded).

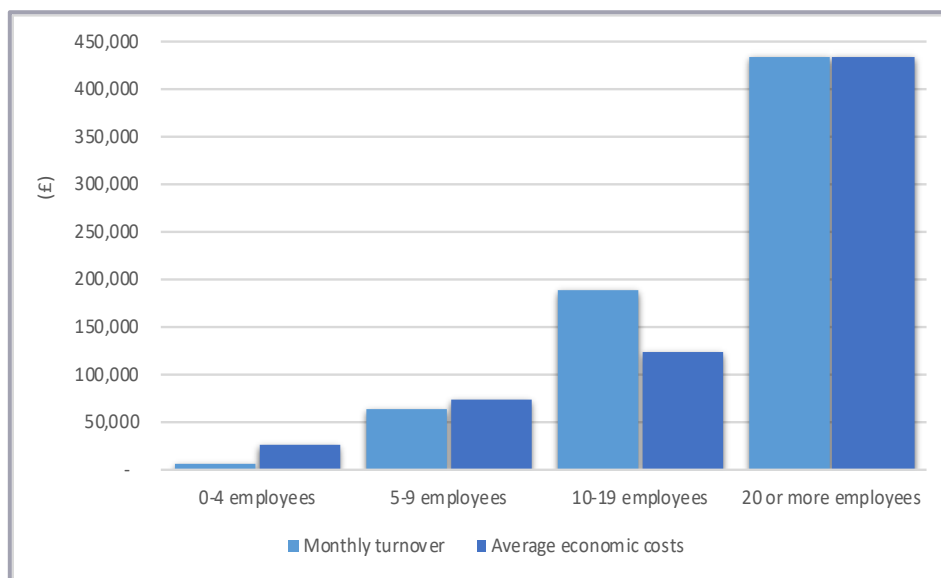
In this fashion, when we consider the amount of losses by number of employees, we can say that **the bigger the business, the bigger the economic losses** as the table below shows.

Table 3 Average monthly turnover and average losses of SMEs by size

| Number of employees | Average monthly turnover | Average Losses due to flooding |
|---------------------|--------------------------|---------------------------------------|
| 0-4 | £6,252 | £26,462 |
| 5-9 | £62,749 | £74,680 |
| 10-19 | £187,56 | £124,183 |
| 20 or more | £434,61 | £433,018 |

The economic costs for smaller businesses are lower than for bigger businesses when the absolute amount lost is considered. However, **an opposite story arises when taking into account the economic costs relative to the turnover of the firm.** This is simply to compare the amount of money that a business lost as a result of a flood event, against the amount of money that the business can get for sales on a regular basis. When looking at the results from this perspective (See Figure below), it is evident that the economic impact is greater for smaller businesses. The average total loss made up a greater proportion of the turnover of businesses with a smaller number of employees, as the figure shows. The losses relative to turnover for businesses with 0-4 employees are more than triple than those of businesses with over 20 employees.

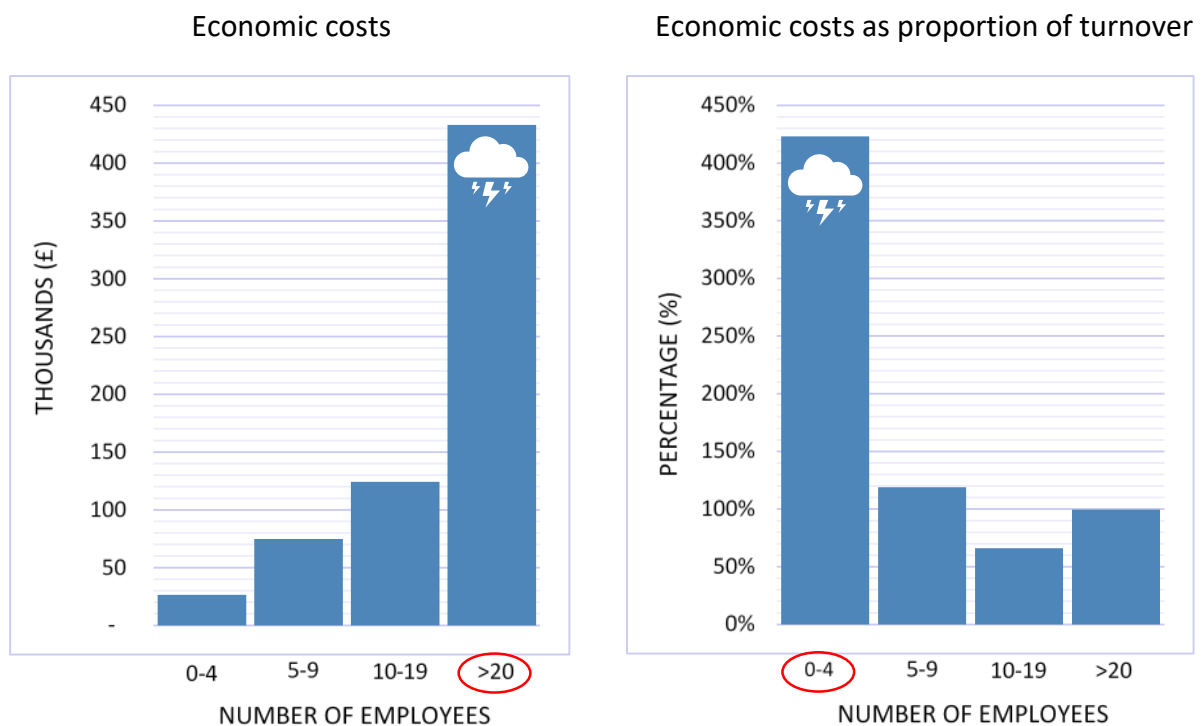
Figure 2. Monthly turnover vs economic cost by size



The figure below shows two different stories. On the left-hand side, it can be seen that the SMEs that had bigger economic impacts were the ones with 20 or more employees. On the right-hand side, the figure shows that when considering the costs relative to their turnover, the SMEs with bigger economic costs were the ones that have less than 5 employees. For these latter firms, the economic losses of a single flood event represented 423% more of what they earn in one month (they reported

a monthly turnover of £6,252). For the businesses with 5-9 employees, the size of the loss relative to their turnover was 119%. The losses of firms with 20 or more employees almost equal their monthly turnover (100%, £434,617), and finally those businesses with 10 to 19 employees had a relative economic cost of 66% of their monthly turnover. Take the example of business “A”, which has 3 employees and earns on average £6,252. The economic impacts of 2015 floods amounted for £26,462. To be able to cover the economic costs of the floods with its own means, this business had to have savings of at least, four months of its entire monthly turnover. In other words, for every £1 of economic costs, its monthly sales would only cover £0.25 cents; meaning that it will take more than 4 months of saving its entire sales to cover the economic costs experienced by the flood (this without considering that after a flood the majority of the sectors have a decrease in sales.) This example portrays the hidden factors that experience micro businesses. In the case of the smallest businesses, for each £1 lost, they would need to have savings of 4 months their regular turnover to be able to pay the economic costs of the flood by themselves.-In this sense, here we argue that a different approach must be used when attempting to analyse the impact of flooding on SMEs, and that the turnover of the firm and the number of employees is a proxy that can portray better the real size of the economic losses.

Figure 3. Comparison of economic costs of flooding on SMEs in absolute and in relative terms



Type of costs

When assessing the economic impacts, it is also important to investigate which general aspects businesses of different sizes are more vulnerable to. Examining the type of losses by size can shed light about the different needs of SMEs.

The greatest proportion of economic losses for businesses with 0-4 employees (N=176) was through structural damage to buildings (49% of total losses) while the greatest proportion of losses to businesses with 5-9 employees (N=49) was through business interruption and loss in trade. The different impacts led to much more varied sizes of losses in these groups. The greatest proportion of losses for businesses with 10-19 employees (N=32) was through business interruption and loss in trade (29% of total losses), although loss of business equipment and stock also had similarly sized effects on this group. Businesses with 20 or more employees (N=22) were most significantly affected by loss of business equipment (42% of total losses). The next table shows the greatest proportion of economic losses by size. It can be seen that for the bigger businesses the most important thing is to secure equipment. However, for smaller businesses it is the structural damage to their premises which represents the higher loss. If they invest in property resilience measures, then this loss will be minimised. However, if they do not own the premises and the landlord is not willing to put in place resilience measures, then the SME will continue being vulnerable to another flood event. This issue will be discussed in the next section.

Table 4. Types of biggest losses by SMEs size

| Type of loss | 0-4 | 5-9 | 10-19 | 20 > |
|-----------------------|-----|-----|-------|------|
| Structural damage | 49% | | | |
| Business interruption | | 29% | 29% | |
| Business equipment | | 42% | 29% | 42% |
| Stock losses | | | 29% | |

Ownership of premises

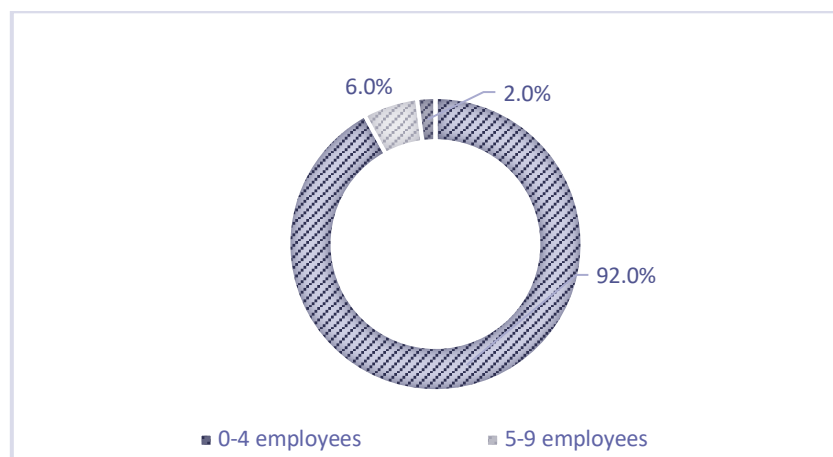
One aspect that has a crucial influence in the way SMEs experience the economic costs of a flood is if their premises are owned, rented, or if the business is home-based. For instance, if in the case of a home-based business, a flood event will not only have an economic impact on the livelihood of the owner, but also on her/his personal life. In the case of a businesses that rents its premises, there will be a double impact if it is flooded: an economic repercussion to the business itself and also to the landlord. Those are *double impacts* which are normally ignored when assessing the impact of flooding on SMEs.

In terms of ownership of the premises, 3 out of 5 of the surveyed businesses rent their premises (59.9%). 5.9% of these are home-based. The biggest proportion were in the sector of wholesale and retail trade (26.6%). 18.8% were in other services, and most of the rest were in manufacturing, construction, accommodation and food services, or arts and recreation (35.9%)

On average, these businesses lost £59,960 (N=60) in the 2015 floods. Businesses that rent their properties represent a double risk: landlords+business.

Home-based businesses: The data shows that 15.67% are businesses which have their home and their business in the same place (N=50). The largest proportion of them (92%), as the graph below shows, are the smallest businesses with 0 to 4 employees, followed by those with 5-9 employees (6%), 2% have between 10-19 employees, and none of the home-based businesses had more than 20 employees.

Figure 4 Home-based businesses by size



The economic losses of home-based businesses were on average £21,779.50. The largest proportion of the home-based businesses belong to the arts and entertainment sector (22%), followed by accommodation and food services (18%), then by wholesale and retail trade (16%), other services (14%), and the rest of the sectors have less than a 10% representation in the home-based sector.

An example of a home-based business is a bed and breakfast (B&B). The vast majority of these firms are home-based businesses, which means that if their premises are affected, it will have a double impact. On the one hand, the livelihood of the owner will be affected, as it could not accommodate guests and will lose sales. On the other hand, the personal life of the owner will be affected too, as there will not be a place to hide from the disaster. The UK B&B's industry is significant in terms of its contribution to the economy, making it paramount to increase flood protection in the sector. The following box portrays the case of one of the surveyed SMEs and this 'zoom-in' shows how challenging is a flood event for this type of firms.

Box

B&B Patito* lies in a flood risk area. It has 6 employees and in 2015 experienced a flooding event with an inundation of 400 mm to his premises. Its economic losses amounted of £23,000 representing 1.5 times what this family business gets on average in a month' sales (without considering expenses). It had to close 30 days to recover from the event, and it experienced 60% decrease in its monthly sales in the first month after the impact of the flooding. As a result, it took between 2 to 4 months before the company' sales return to normal. This business used its own savigs to recover from the flood. It tried to get a grant but mentioned that "*tried to get grant aid but was a waste of time and effort took too long*". When asked about the essential things that it needs to continue operating after a flood, it mentioned: "*good insurance and accses to good advice*". This business has flood insurance as it wants to have "a peace of mind". However, it mentioned that has had problems with insurance due to "*big increase in premiums*", and it reported as well having a high excess because of flooding which made it not worth submitting a claim. *[The original name was modified to keep confidentiality]

Cost of flooding to communities

What will happen to towns if businesses start leaving because the town is in a flood risk area?

Given that SMEs are crucial for communities, we wanted to explore the interviewees' perspectives around this question. Several interviewees agreed that losing businesses as a result of flooding would have a negative effect, because impacts on SMEs exert knock-on effects throughout towns. For instance, as the next box shows, if SMEs start leaving, the town could **lose its attractiveness of being a place to do business**. There is also the risk of **eroding the customer base**, which will also affect other businesses: "*Businesses leaving an area is not good for any area, it's not good for the community and it's not good for the businesses to have to move then start up again and often mainly because the customer base doesn't come back quickly enough. We saw that, a great example in [this town], where the business got up and running really, really quickly. It wasn't a small business, it was part of a larger business, part of a chain of shops and they had their... the group came in and got the business up and running really quickly within two weeks, which was fine, but they didn't have any customers, because they'd all moved away*" (Ins-13). Another aspect highlighted was that by losing SMEs, towns will lose the variety that SMEs bring to the retail sector: "*I think once you start losing those corner shops and those small local businesses, then you start to have an impact on the community. And the whole community, the effect of the flooding is a real issue. The psychological effect of flooding is a concern and losing the SMEs means that you lose the independents, the people who actually bring that bit of variety into retail or into the community*"(Gov-08).

Box

“We had a cake factory close, we had a guy who'd been there for 25 years who made like custom covers for vehicles, we had a bookshop close, [...] and they've all been replaced by just like cheap mobile phone shop, takeaway... The drycleaners closed and it was replaced by like a vaping shop. Do you know? So what I'm saying is like it downgrades the attractiveness of the high street. So you might imagine an attractive high street to have like butchers, bakery, florist, little supermarket, a couple of charity shops, like a bookshop, hairdresser's, barbers shop, all that kind of stuff, but instead now you've just got loads of takeaways and a vaping shop and like a mobile phone shop; it's not very interesting for people, is it? it just doesn't encourage people to walk down the high street and that downgrades the customer base and then the area becomes... It kind of becomes eroded, doesn't it, your customer base becomes eroded by there not being enough variety, so it becomes a less desirable place to do business and then you don't necessarily get the trade that you need and that affects resilience.” (Supp-12).

Losing SMEs was seen as a game changer for towns: “... if there was a government direction about relocating to less flood prone areas, then those areas would become extremely deprived in the sense that there would be empty shops and open shop fronts, etc, and it would just generally, I think, lead to a decline in the culture of that town” (Gov-08). It was also pointed out that SMEs leaving towns would increase the existence of **redundant buildings, opening the door to undesirable activity**: “Where you've got redundant buildings and not a lot going on, there are always hot spots for undesirable activity... So it's not helping any area, a lot of the businesses go. The economy goes downhill. There's less money spent in that local area in other shops. There's just a downward spiral, really, when there's redundant buildings with no businesses” (Supp-02).

In general, interviewees highlighted the crucial weight that SMEs have on the **balance of communities**. If businesses leave, this will have an impact on the other elements in the community: “We need a certain amount of businesses to support our current population, and that population then supports the shops and services, and if our population doesn't grow then other services start to suffer” (LGov-04). SMEs play a significant role as the social fibres of the town: “If they are forced to leave, then that is going to affect the vibrancy of that place, and if we haven't got the businesses to employ people, then people are going to be looking for employment elsewhere. So that might mean the relocating of families... they take the children out of school, so the schools become no longer viable... And you can see that within a generation. You will go from chocolate box to ghost town” (LGov-14).

Box

"I don't think it would be allowed for entire communities to be left to a decline in that way which then sort of drives me towards the question of, or the idea that something needs to be done and then the question of well what needs to be done?" (Ins-20).

If SMEs leave towns it would have a direct and indirect impact on the budget of local governments: **losses in tax revenues and increases in unemployment claims:** *"If we get lots of businesses leaving, we are going to have a big problem. We have very low unemployment. If there are so many hundred people across the district claiming unemployment, that will be about it"* (LGov-10).

Another aspect that was highlighted is that since SMEs **are part of supply chains**. If they leave, this will affect the chain: *"More Cumbrians are employed by SMEs than in any of those big employers, and a lot of the SMEs are supply chain to those big employers. So, when your SMEs start to say, 'Well, we can't carry on because of the environmental conditions,' and I mean really environmental conditions, like flooding, then that would be the **death knell for the local economy**. Just in the same way that a big employer pulling out of an area and affecting the supply chain, it would be the reverse effect sort of thing. **An SME decides to stop and the supply chain disappears"*** (LGov-14). Another risk mentioned was that if businesses were leaving towns, there could be a substitution of higher value to lower value employment, which adds to the value of the town.

The analysis reveals that the closer the interviewees are to the issue of SMEs leaving towns (e.g. local government, or organisations working closely with SMEs), the more inclined they are to think that SMEs leaving would have negative and permanent consequences, than other interviewees (e.g. insurers, National Government) who tend to argue that the impact of **SMEs leaving towns would be bad but transitory**. Some interviewees mentioned the case of Cockermouth, where in spite of the floods affecting most of its retail outlets, it has not seen a decline in growth and businesses have not left the town: *"As yet, we haven't seen significant fall away in terms of premises being vacated and left empty. But once you get to a point where you start to see some of that happening and then it is having ripple effects, then they can have quite significant impacts on places"* (Gov-16). It was argued that businesses will come back when the memory of the flood fades away and the town starts growing again: *"I think it's the memory saving farce, which would get it trading again, but there would be a period of blight where the businesses have gone, several of them, everyone is aware of the flooding and no-one really wants to invest. Time passes, people start to forget. There's a drive of a new store that sells fish or whatever and someone thinks; 'Oh well, I wasn't here in the flood, I'm sure it wasn't that bad', and they'll start investing in the area again"* (Ins-18).

Some interviewees were also more optimistic arguing that some businesses will never leave the town despite being flooded. The reasons stated were that some businesses may find attractive the opportunity of having cheaper rents. Other businesses might decide to stay and change their business model. An interviewee offered the example of a landlord who decided to modify his strategy and just rent to businesses that could easily take the flooding and carry on the next day: *"That industrial estate had low rents, partly because of the flood risk, so it changed the*

nature, but it didn't make it unproductive for society, maybe the opposite, but it's a good place" (Aca-26). Other businesses are loyal to the town and are willing to stay even though they struggle because they feel part of the community.

Box

"... you know, if your town is at risk and that's driving away businesses, it's something the town should consider, the Chamber of Commerce, the businesses themselves. Consider what's the best thing to do than just providing them with insurance to enable it to continue. Again, as I say, it would be fine if you could do it without somebody else having to pay; somebody has to pay and my question is who should that be" (Aca-07).

One key issue that was highlighted is that businesses are central to the character of the place. For example, the local pet shop, or the fish and chip shop. If they leave, the culture of the town will erode, because these businesses contribute to create the character.

In a similar manner, the fact that some towns are by rivers is not a coincidence. So, there might be places where living by the river is what makes that town the way it is. If that is the case, then people and businesses who want to live there, need to protect themselves. It is in everybody's interest that SMEs are flood resilient, as the box portrays, and should be a collective effort. For instance, in one town in Cumbria, residents were really encouraging the use of the local shops and local resources even though these were limited, but they knew that by helping the local shops, they would keep the town going. Thus, it is also this "*community spirit*" which help towns to recover faster. Yet, not all towns have the same social capital, in the same way that not all towns have the same financial means.

In this sense, it was deemed important by interviewees to differentiate the capacities that towns have, when targeting interventions, because some places need more help than others: "*In areas that are more deprived... where there's flooding... and then let's say there was a flood and they're impacted, and a lot of their businesses don't have a high turnover. I wonder whether in those areas you might lose several businesses or businesses see a decline in that particular town. I think in areas where you've got high level of affluence, anyway, you'll probably going to have relatively wealthy independent tools and/or changes, you know. They have great insurance. They can get back up and running very quickly, therefore the high street will continue to work*"(Supp-27).

Box

"When we're looking at making business flood resilient, it's for everyone's sake it's not just for them but for other areas of the country if all the businesses leave it creates huge potential problems for the country. [...] We want that kind of recognition that it's in everyone's interest to have a thriving community in those areas even if they're high risk" (Supp-15).

Local authorities are facing an important challenge as they need to think how to redesign their towns in order to accommodate growth and new business opportunities in other areas, as long as there is land available. Interviewees pointed out that local governments are putting efforts to put in place regeneration programmes to “bring more businesses in and encourage more businesses to grow, employ more people, offer better salaries and wages, and improve the quality of life in the town. If businesses start to leave the town all of that suffers really’ (LGov-04).

Interviewees highlighted that there are some difficult choices and decisions that people must make. Crucial questions to ask are: Is it possible to protect all areas? Should flood risk areas be employment areas? Or, if this area is at risk, but flooding happens relatively infrequently, shall we just deal with it each time it happens? Is my town able to continue its growth path without the existing SMEs base? *“Well, I think there are some really fundamental questions to ask about whether there are some areas that we have to effectively say should not be occupied for either housing or employment/business use. There’s a choice, again, that has to be taken really”* (Gov-03).

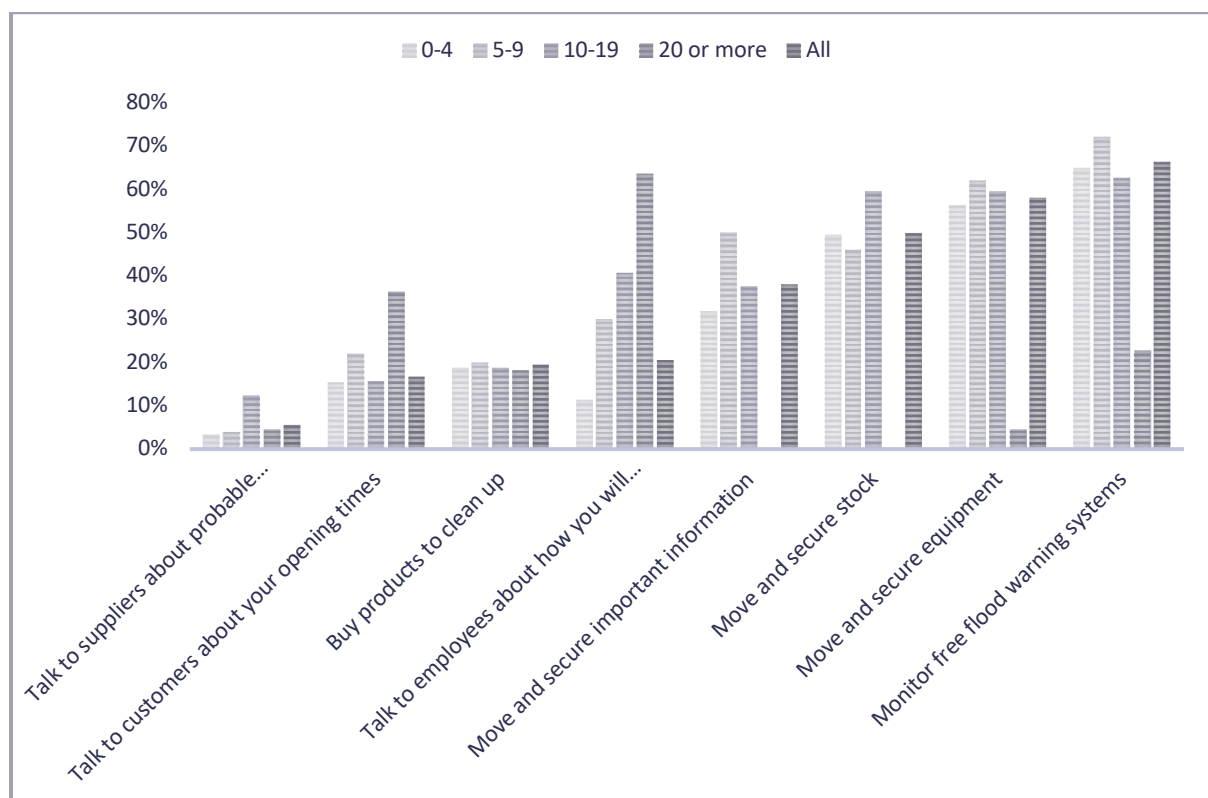
5. Strategies that SMEs undertake to manage flooding

What SMEs normally do?

To defend from the flood and prevent future floods

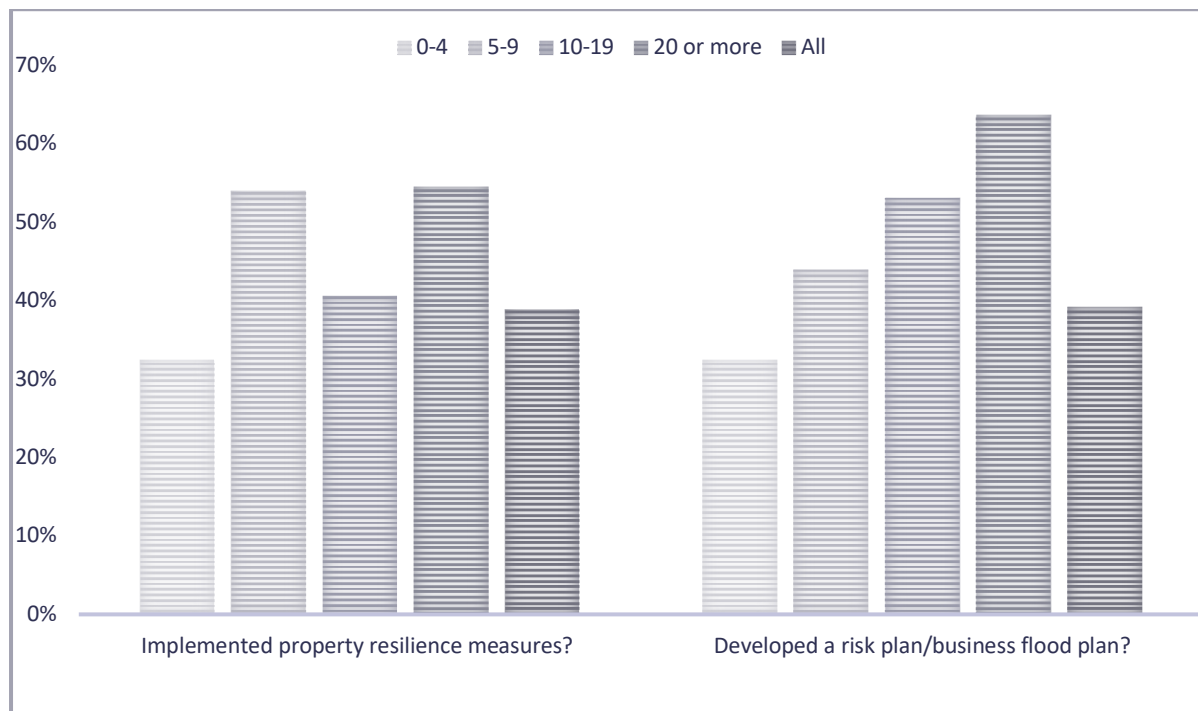
There are diverse risk management strategies that SMEs can take to protect themselves. We divided these into those strategies that they take when the likelihood of a flood is imminent (i.e. right before the event) and those that aim to protect from future events. The graph below shows the type of strategies to defend from an imminent flood by size of the firm. It can be seen that microbusinesses are more used to monitor flood warnings, move and secure equipment, but less likely to talk to suppliers about probable rearrangements, or talk to employees or to customers about when they could re-open. In general, larger businesses are more likely to talk to their employees to arrange communication after a flood event. Also, they are more likely to move and secure stock.

Figure 5. Strategies that SMEs used to defend from an imminent flood by firm size.



In terms of more proactive strategies that seek to prevent future impacts, the graph below shows that bigger businesses are more likely to have a flood risk plan or have undertaken property resilient measures than smaller businesses. However, overall, just around 35% of the surveyed SMEs have implemented those strategies. Interestingly, it seems that those businesses with 10-19 employees have implemented less property resilience measures than those with 5-9 employees.

Figure 6. Percentage of SMEs that have implemented property resilience measures and developed a risk plans/business flood plans by firm size.



Community self-organisation

Self-organisation has been one of the mechanisms that SMEs have used to overcome a flooding event and to prevent future floods. For instance, some communities have independently pulled together specific resources or set up schemes for helping small businesses to cope with floods. The city of Sheffield, for instance, developed a '**Business Improvement District**' (Sheffield BID, 2018) following the floods of 2007. This acted as a resource pool for businesses backed by a levy to support the improvement of flood defences. In Calderdale, '**Flood Save**' (Community Foundation for Calderdale, 2018) was put in place, which is a match-funded savings scheme in which a business can save monthly. In the event of a flood, businesses will receive the double amount of money saved, capped to £2,000. There is another one called '**Watermark**' (Watermark Flood Fund Calderdale, 2018), which is about building a flood fund to support people in hardship scenarios. These are examples of strategies that communities can take to be prepared for future floods. We also found strategies that can be taken to help businesses resume their operations. The '**Padinham market place**', for example, was set as a promotional campaign where SMEs rely on the publicity gained from the floods through the media to raise interest and support in their communities. They publicise that the local shops are open and, in this way, businesses turned their hardship into an opportunity to recover financially. Another local strategy adopted by some businesses to get back on their feet was to **share offices** with other businesses to continue developing their activities while their premises were rebuilt. In Calderdale, there is an initiative that aims to set up a list of '**Offices for flood**', which could be made available in the event of a flood. The interviewees described other informal arrangements, such as community hubs and flood action groups to learn from their experience. For example, '**Open Source Arts Hub**' created a network hub in Leeds where SMEs can exchange flood experiences and receive advice.

Although these initiatives are promising, not all communities under flood-risk have this self-organisation capacity. The commonality among those initiatives is the existing **social capital**. Strong networks can be seen in those towns. Those places have already an **established sense of community**, which facilitates self-organisation around a common goal. Therefore, **trust** and other community capacities need to be developed if these schemes are to be replicated in other parts of the country.

It was noted that business-led networks need to increase their **awareness** around flood-risk, and business/community-led initiatives would need to be supported to embed flood resilience as a priority. Besides an appreciation about the risk of flooding, communication and information support would be crucial in 1) spreading awareness about what has been done in certain local areas to increase resilience, 2) setting up network channels among community businesses, and 3) establishing networks between businesses and the local government, in order to build trust, social cohesion and a sense of community.

Government grants

Another aspect that has helped SMEs when flooded is the aid provided by the government. Small business can also seek funding through their Local Councils and Local Enterprise Partnerships (LEPs). Some examples are the Regional Flood and Coastal Committee's Flood and Coastal Erosion Risk Management Grants and Aid, or the Pathfinder projects (See Annex A). However, it was highlighted that these schemes rest upon the businesses' capacity to advocate together for their creation: *"It requires... businesses to come together... to make the case for why this is a priority against all the other priorities that there are for investment at local level"* (Gov-03).

The grants provided for SMEs raised an interesting line of debate in the interviews, as it was suggested that the **aid provided by the government would be better spent to build capacities before the flood and not after it**. Otherwise, the grants can be seen as a political choice: *"Those grant schemes are entirely a political choice in response to floods and is something the government, in a sense, keeps in the back pocket to use as and when it wants to, generally after very big floods.* (LGov-16).

Although many businesses have benefited by the grants provided by the government, these have not worked as expected. In the 2013/14 floods, Defra administered grants to help businesses making their property more resilient or providing a one-off payment to help them recover. At the time, the take up of grants turned to be low and it was argued that the reason was because Defra's procedure was too restrictive. Then, in the 2015/16 floods, it was decided that the responsibility of administering the grants should be passed to Local Authorities. However, according to the interviews, it seems that the conditions attached to the grant did not match the capacities of local authorities to support their implementation: *"The people in local authorities... it's at a time when they're under stress. So, they're dragging people who don't know what they're doing. Yes, and to do these things properly requires a lot of skill and knowledge and expertise. So, if you're asking an admin assistant or something to come in and do it, it's going to go wrong."* (Supp-28).

In addition, it was mentioned that without guidance regarding accreditation and standards of the products and services being delivered by the grants, the government would have lots of difficulties in assessing the effectiveness of the grants, which could be a waste of resources.

Administering the grants by local authorities turned out to be a challenging matter, according to the interviews. First, there was a confusion as to whether SMEs were eligible to apply for grants, specifically in the case of 'Repair and Renew' to which businesses were not applying, because they did not know if they were eligible. Some businesses did not apply because they did not have time, or the amount of money was not worth the effort. Some other businesses were worried that taking up the grant would increase their insurance premiums: *"This was very narrow-minded, but some of them were afraid that if they applied for the Resilience Grant, they would increase their flood insurance premium, because the insurance company would think they were more at risk"* (SuppArt-12). All this evidences a lack of information. For the 'Repair and Renew' grant, the conditions and criteria attached to it proved particularly problematic. Indeed, not only these varied among each local authority, but they also turned out to be quite restrictive for some businesses, because of the proofs they needed to provide. For instance, businesses needed to prove that they would implement resilience measures in their properties and this required filling in the necessary paperwork, which ended up being quite technical. For some business owners who are not used to deal with such formalities, this was even more problematic as the quote in the next box shows.

Box

"We tried to help as many people as we could. You know, we ended up filling out quite a few forms for people, but some people were just like: 'Oh I just don't want to deal with that,' you know? They might be a drycleaner. The most writing they might have to do is writing their names on the tickets in the drycleaners and that's it, you know. They just can't deal with a big 4-page or 5-page form. And then people are asked about, you know, accurate amounts of money that they're going to spend on things" (SuppArt-12)

Various interviewees also mentioned that the money available through those grants was insufficient to cover the costs of flooding: *"There are the kind of hoops you got to jump through to get to them and whether that is considered worthwhile, and then there is the fact that I think they mapped around £5,000, which sounds a lot, except when you think the average damage for a flood event is around £30,000 or £40,000. It's barely scratching the surface"* (Supp-15). In addition, the grants were not timely because, as mentioned above, there was a lot of bureaucracy. Furthermore, businesses were too busy trying to rebuild their premises, and the paperwork seemed an additional burden. Other issues related to businesses having to apply through their landlords in cases where they do not own their properties.

One way to avoid delays in providing the grants and increase the take up could involve insurers managing the grants, as one interviewee mentioned: *"There's some talk of the insurance companies, perhaps, taking the grants on board themselves. Some insurance companies are talking about this. Putting themselves forward as the people who manage the grants and integrating it with the repair and rebuild. That would certainly appeal more to small businesses, because then they wouldn't have to handle the bureaucracy"* (Aca-26).

6. Insurance and SMEs

This section explores the interface between SMEs and insurance. On the one hand, the industry is willing to work with SMEs but, on the other hand, SMEs have found difficulties working with insurers. The interviews and the survey highlight specific challenges in this regard. To build the picture, we examined SMEs responses and classified the challenges in terms of affordability (high excess/premiums), availability (in the past/future), speed of payment, misunderstandings in what the policy covers, and resilience measures not considered in the pricing. Some examples are presented in the table below, while Annex B contains all SMEs' responses. This data brings closer the challenges that SMEs were having.

In order to provide a broader picture of the challenges, semi-structured interviews were conducted with with insurers, local and national government officials, and local and national organisations that support businesses.

Box

"We got quite a lot of anecdotes and evidence from our members to begin with building up this picture across a number of insurance areas whether it was the premiums going up as a result of previous flooding or whether it was the terms or conditions of those insurance providers, insurance quotes that were being stretched and not covering the vital things that were needed to" (Supp-15).

While interviewees confirmed that they have heard those challenges in their own spheres, other challenges were identified (see Table below), such as lack of trust on how widespread is the issue, lack of understanding about economic costs faced by SMEs and the risks they represent to the industry, among others. These are explored in the next sections.

Table 5 Example of quotes highlighting problems

| Affordability | Availability |
|--|--|
| <p>70. Premiums are so high, we don't have insurance plus the excess is ridiculous so when you weigh up the loss and the premiums, it's cheaper not to have insurance.</p> <p>281. Initially after 2012 we were given a quote with a premium double the normal value and an excess in the region of £10,000. It was not affordable and the excess made it unviable. The next time, that is, for the following year's insurance we couldn't get a quote to include cover for flood.</p> <p>125. Although we were able to pay the excess, this was simply reduced from the amount that our insurers paid us. The excess was £2,500 and if the pay out had not been more than this we knew we would have to get a loan from some of</p> | <p>21. I have been informed that going forward we may not be able to get flood insurance. If this is the case then this may seriously jeopardise our ability to continue in business at our Brighthouse site.</p> <p>117. No flood cover can be obtained on my premises, as insurance companies see it as too high a risk.</p> <p>220. I think it is deeply unfair that even though our business was not flooded (i.e. water did not enter the property apart from a small amount in the cellar),... our postcode is black listed.</p> <p>313. Extremely difficult to obtain insurance after two separate catastrophic flooding incidents in</p> |

| Affordability | Availability |
|--|---|
| <p>our members. As a small community group, we simply do not have that amount of money available for such situations.</p> <p>299. We now have a £250,000 excess... until some works are carried out - works which we have been told we can't carry out as they have no ability to prove the works will be worthwhile.</p> | <p>10 years. Given level of cover required, mainstream insurers very reluctant to offer cover.</p> |
| Misunderstandings about what the policy covers | Resilience measures not considered on the pricing |
| <p>6. Should be covered for at least business interruption. Found out because it was flood related. The exclusions were directed at everything. We had paid a very high insurance sum for 500 quid a year, paid, nothing in return! I will not be bothering with insurance ever again, had I simply put the monies aside that I'd paid for the past 25 years into my own pot, I would have managed to pull myself out of both incidents and still had cash in the bank. Now we are left to fend for ourselves, it's not bloody acceptable!</p> | <p>141 Unhappy that nobody is willing to insure us for flooding, after we had installed flood boards and air brick covers.</p> |
| Decision not to claim | Slow response |
| <p>72. I am insured for flood damage, but the excess is £2,500, so not worth claiming.</p> <p>84. We have not claimed as it was not enough loss to make it worthwhile and the loss is hard to precisely quantify.</p> <p>145. No claim made as policy is a joint policy and any claim on this property would affect the Group Policy.</p> | <p>36. Our loss adjusters have been very slow to react. In fact, they did not look at our claim for 6 weeks.</p> <p>94. High excess and long delays until on account payment received without private funds business would have closed</p> <p>101. I am insured and they have paid an interim payment, but are really dragging their feet getting the rest to me. It's been around 6 weeks now and still I keep ringing them.</p> |

Accessibility and Affordability

The issue of whether insurance is accessible to SMEs was recurrent in the interviews. It was argued that some businesses are located in areas where the insurance industry would not even provide a quote given the high risk the area represents. However, **there is still uncertainty about the reality and extent of businesses accessing and affording insurance**, as interviewees pointed out. *“So what we hear is that in some high flood risk areas businesses claim that they cannot even get quotes for insurance cover, but the insurance industry denies this, so there's a question of who's telling the truth here”* (Gov-03). It was noted in a particular case that the industry's risk assessment could even change from one year to the other: *“So I said I'll take the excess because it's never going to be necessary. The next year they said we're not offering any flood insurance for that property in that area because it's so close to a river”* (Supp-19). For those businesses that were able to receive quotes, their ability to access insurance was then restricted by the affordability of such products and what they covered.

The question of how many SMEs are suffering from an insurance issue concerning flooding is a difficult question, but interviews revealed that it **seems to be a localised problem**: *“As far as we have seen at the ABI and the industry has seen, there isn't a sort of widespread systemic problem with accessing affordable flood insurance for*

SMEs, and I think that was sort of confirmed by some Defra research that happened in July 2015" (Ins-25). Defra's report (Dickman et al., 2015) showed that 75,000 businesses across the country are struggling in some way to get affordable flood insurance. Thus, considering the entire population of SMEs, that amount is small, but as an interviewee stated, it is not zero: "Can't pretend that is a widespread [problem] throughout the business community... but 75,000 even if it's not that much it's not an insignificant number" (Supp-15). It was pointed that there are flood risk areas in the country where even these small numbers can be significant.

Regardless of how widespread is the issue, the question of affordability of insurance for SMEs has been raised in different policy spheres, but that an answer is still yet to come. How much money an SME is willing to pay to be covered by insurance? How much money an insurer is willing to accept to cover SMEs at flood risk? How much disruption and reductions in growth is the government willing to accept? This is a conversation that has incipiently happened and a conclusion has not been reached.

The interviews reveal that the affordability and accessibility of insurance for SMEs comes down to a market failure driven by 1) a lack of understanding of the risks that SMEs represent to the insurance industry, 2) a lack of understanding of the economic costs of flooding by SMEs, 3) a lack of understanding on to what extent resilience measures are able to reduce flood risk on SMEs, 4) a lack of wider willingness to consider resilience measures into the pricing of insurance, and 5) a lack of recognition by the national government of the ripple effects that the economic costs faced by SMEs have on towns at high flood risk.

SMEs are businesses with limited resources and the market logic dictates that they might want to spend the minimum amount on insurance. In the case of start-ups, they might have even tighter parameters and will not want to spend a lot on insurance. As an interviewee expressed, "the question of what is affordable is an interesting one". **From the insurers' point of view, insurance premiums are being priced according to a certain level of risk.** If SMEs are located in high risk areas, then the price of premiums reflects this level of risk, and it is the business who would have to make the decision of either moving, paying or staying and not having insurance cover: "When you look at insurance costs for SMEs, I think if you're in a high-flood risk zone you should expect to be spending £1,000 or £2,000 a year on flood insurance and maybe more. And the point is: if you're located on the top of a hill, you won't need to do that and that is just the way it is" (Ins-22).

From this stand point, if insurance is affordable or not, it is down to the business owner if s/he is willing to bear the risk. This is problematic for small businesses who are constrained by not insuring their premises and risk losing their business altogether if faced with the event of a flood, as exemplified by the SME in the following box:

Box

"We have been trading at this address for 19 years and this is the first time we were flooded. We don't know if we will get insurance again because of the cost. If we can't get insurance, we don't know if we will be able to continue trading" (SME-100).

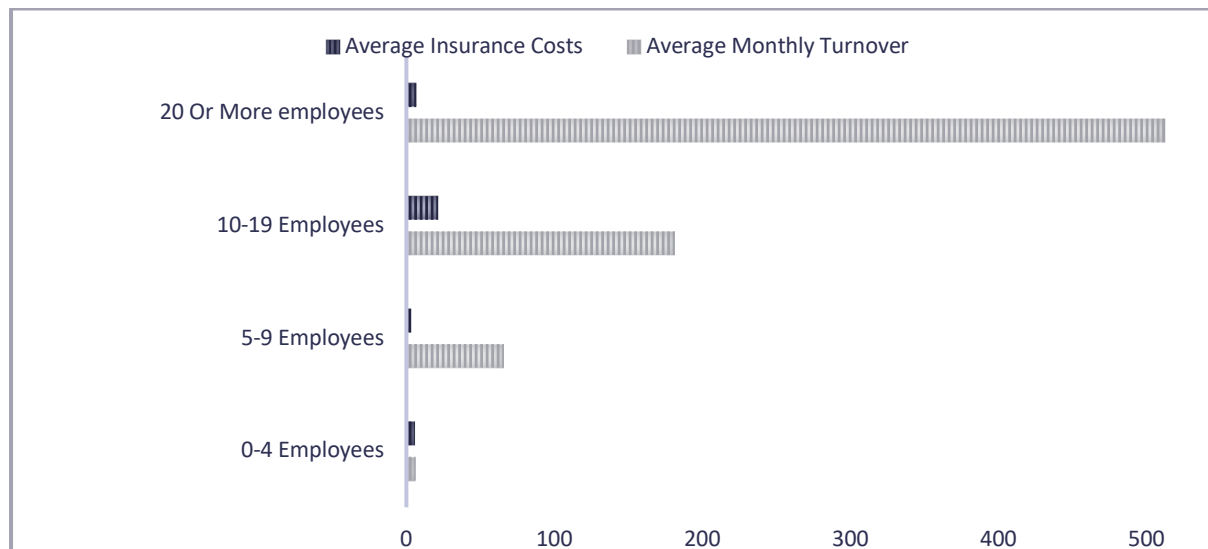
As seen in section 4, when SMEs are affected by flooding events there are ripple effects in local economies. Thus, insurance as a risk management strategy could be useful for the recovery of local economies, as long as they respond in a timely manner. In addition, lending processes in high flood risk areas depend on having in place flood insurance, so investments and growth of SMEs could be missed if SMEs cannot access/afford insurance. In this fashion, affordability of insurance should be examined more closely.

The following section examines what is affordable for SMEs from a new perspective. It shows that it is useful to look at the 'relative price' of insurance (i.e. price vs turnover) to be able to assess affordability.

Affordability in numbers

The quantitative results provide some light in terms of affordability of SMEs. We found that the size of the business, in terms of number of employees, matters. Businesses with 0-4 employees had to spend more on insurance relative to their turnover. Of the insurance quotes stated in the survey, businesses with 0-4 employees had to pay on average 169.5% of their monthly turnover; businesses with 5-9 employees had to pay on average 27.8% of their monthly turnover; businesses with 10-19 had to pay on average 24% of their monthly turnover; and businesses with more than 20 employees had to pay on average 63.5% of the stated monthly turnover.

Figure 7. Insurance costs and turnover per number of employees



For smaller businesses, the costs of insurance relative to their turnover are high. For firms with 0-4 employees, their monthly sales would be just enough to afford insurance, without considering other costs to run the business. Nevertheless, when compared to the average loss of a firm, then it can be seen that having insurance is worth it. Below is a bar chart of average losses, average monthly turnover, and average insurance costs. While the average insurance costs are comparatively quite similar, the monthly turnovers and losses in the 2015 flood vary greatly. Businesses with smaller turnovers still had to pay similar amounts for insurance.

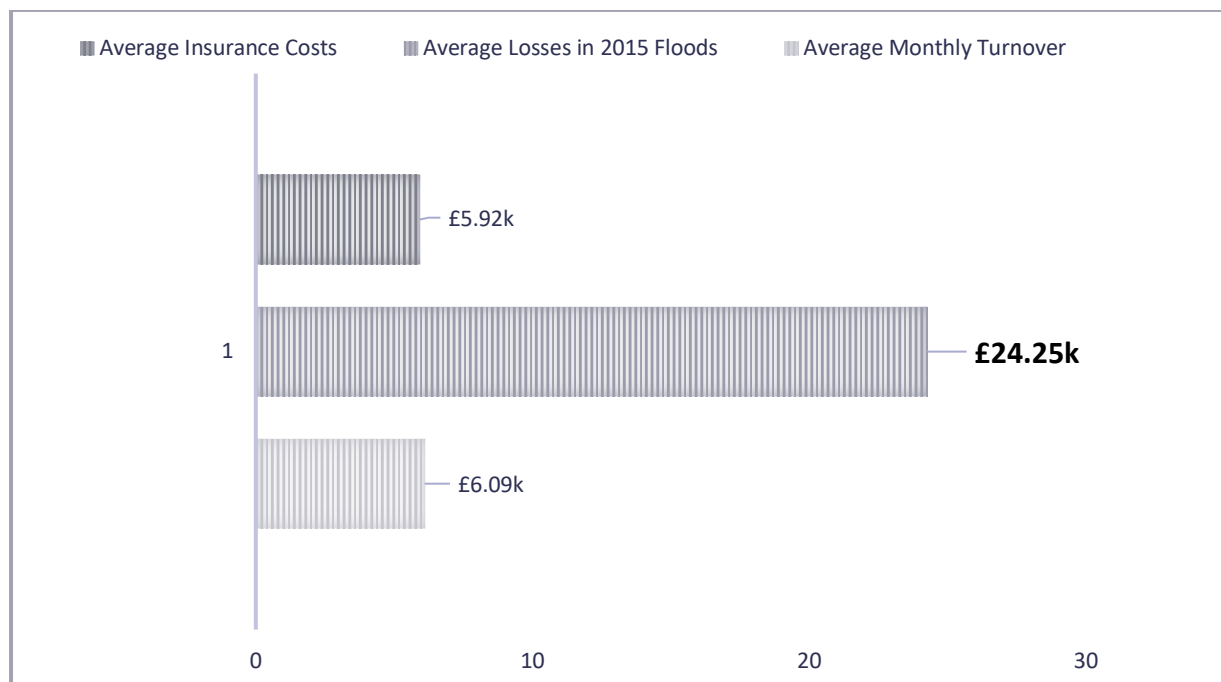
Businesses with more than 20 employees had high losses, high turnover, but comparing to the cost of insurance, it is relatively fairly small to them.

Table 6. Losses, turnover and insurance costs per number of employees

| Number of employees | Losses (thousands) | Turnover (thousands) | Insurance (thousands) |
|---------------------|-----------------------|-------------------------|--------------------------|
| 0-4 | £24.25 | £6.10 | £5.92 |
| 5-9 | £78.87 | £65.91 | £3.33 |
| 10-19 | £111.85 | £79.86 | £21.17 |
| 20 OR MORE | £517.05 | £512.84 | £6.60 |

As can be seen in the graph below, for businesses with 0-4 employees, their insurance cost is around £6,000 and their turnover is along those lines. However, for them, the average losses were £24,000 which means that they would need to save almost their entirely monthly turnover to buy insurance. However, without insurance they would need almost 4 months of their turnover to cover the economic losses if they are flooded. There are various factors that need to be taken into account to say if insurance is affordable. These include the excess, the premiums, and the level of risk, but at the end it comes down to uncertainty. If they are flooded and the damage is greater than their excess and what they paid for the insurance, then it is worth having insurance. If SMEs are not flooded, then paying for insurance becomes can be a significant expense.

Figure 8. Average costs, losses and turnover of businesses with 0-4 employees in 2015



In a similar manner, when examining those businesses that do not have insurance (2 out of 5 SMEs), 26% said that the '**quote was not affordable**' and 86% of these businesses are within the 0-4 employees category; 19% said that they '**could not get a quote**', with all of them having between 0-4 employees; and 57% said they '**didn't have time or don't know how to get a quote**', with 91% of these have between 0-4 employees, 8% between 5-9 employees, and 2% have 20 or more employees.

In terms of excess, 13.6% of the surveyed businesses had an insurance excess that was '**so high it has not been worth submitting a claim**'. 7.5% SMEs provided the amount of the excess and, excluding the outliers, the average of unaffordability of insurance was: £7,576.

Is the insurance market working for SMEs?

In terms of how suitable the insurance market is for SMEs as it currently stands, interviewees perspectives were diverse. To have a view on that, as an interviewee puts it, you need to answer the following questions: Is it working for the insurance industry? Is it working for SMEs survival? Is it working to increase the resilience of SMEs? What is not working? What is missing?

If we focus on the point of view of the insurance market, perhaps it is not working completely, but they have implemented different strategies to manage their risk exposure: "*I suppose from the point of view of the insurance market, is it working? They probably want them [SMEs] to be paying higher premiums and so it's not working from the commercial perspective of those insurers, I suspect*" (Aca-26). SMEs in high-risk areas represent a **bigger risk with little return**, so the factors involved in the process of offering insurance in a high-risk area from the insurers perspective depend on the insurer's appetite for risk (high risk=high premiums), their overall exposure (risk aggregate, regulation requirements and access to re-insurance), and the expertise and understanding of the broker regarding the level-type of risks. Based upon the interviewees' answers, it seems the case that the industry response to SMEs in high risk areas varies considerable and **a combination of strategies seem to be working for them**: "*We've got a combination of things that we do as a business, but it's difficult to give a stock insurance answer because, as I say, there's lots of individual insurance companies and they will all treat their... differently depending on what their strategy is at the time*" (Ins-13). Some insurers will continue to insure SMEs, some will increase the prices or they will offer insurance just to new customers, and some might refuse to insure SMEs altogether or might provide a policy excluding flood: "*Our experience with insurance companies is that they prefer not to underwrite high-risk flood. It's not... with a traditional insurance product, it's not [a] low-hanging fruit for them*" (Ins-22). For those insurers who are willing to cover the flood element, their main strategy is **to reduce their exposure to risk through high premiums and/or excess**: "*The higher the excess is, in theory anyway, the lower the premium should be, because you're accepting a portion of the risk. You're saying, well, if this claim happens, I'm happy to pay the first £5,000 or £10,000, whatever it is, by increasing or decreasing the excess*" (Ins-20).

Regarding the question of whether the insurance market is working for SMEs, most interviewees agreed that there are various factors and levels to account for to provide a straight answer. However, it was highlighted that a high excess might work for the industry, but might not be working for SMEs. The **size** of the business was

acknowledged as key determinant of the unsuitability of the insurance market for SMEs, and **micro-firms in flood risk areas seem to be particularly affected**: *"For the smaller firms, it doesn't appear to be working at the moment, because they still struggle to get insurance despite sort of new innovations that have happened..."* (Ins-20). Some interviewees asserted that the market is working *"but obviously there's room for improvement"* (Aca-05). The problem that interviewees perceive about the insurance market for SMEs is that it is **localised**: *"That's a really interesting question. It's working for most, if you look at just the sheer numbers. But then again, these people aren't in flood risk areas"* (Ins-20). Thus, the answer about whether the insurance market is working for SMEs should be provided by investigating SMEs in high-risk areas, because those areas are constantly reporting problems related to the affordability and access to insurance due to high flood risk.

For other interviewees, the insurance market, at the moment, is unable to provide **affordable insurance**: *"I think, in terms of the whole picture now, I think there's probably a bit of a disparity between who can actually afford it and, in the end case, who would actually risk not having it, in that sense as well, because it's not affordable"* (Supp-23). Several interviewees mentioned affordability as a problem and commented on the strategies that some SMEs have taken to overcome this; for instance, **self-insurance, re-insure their excess or not claiming to their current insurance**.

Some businesses were obliged to abandon the traditional insurance route altogether and find ways to self-insure, such as through a **savings pot**: *"They've said whatever it would have cost us we'll put into a separate account. We hope, fingers crossed, we will not flood for another five years. If it's five years before a flood again we can afford to recover with the money that we've saved by not insuring"* (Supp-02). Others have used their **own pension** money: *"Another one I'm thinking of, used their pension fund to fund their recovery, because they actually had, they said, not been able to get insurance after the first flood. So, to recover from the second flood, they used their pension fund just to recover"* (Aca-26). It was acknowledged that this is a missed opportunity for the insurance industry, as they could be losing the SMEs market.

The other strategies being used to overcome the unaffordability of the price of insurance is **re-insurance**: *"So he has actually taken out insurance on his excess. That's about ten percent of the excess, it's seven thousand pounds to insure the excess. So, we've had a few of them. There was another one. I think his excess was £2,500, which is more reasonable for a small business, but now they've told him that his excess will be £25,000. But he's re-insured his for £2,000"* (Gov-02). Also, SMEs are choosing **not to claim insurance** at all either because it would be too expensive, not worth the effort, or they are worried that this would interfere with other policies: *"...a quote was not worth the effort"* (SME-13); or *"I am insured for flood damage, but the excess is £2,500, so not worth claiming"* (SME-72), *"No claim made as policy is a joint policy and any claim on this property would affect the Group Policy"* (SME-145).

Is the insurance market working to increase resilience on SMEs? Probably not. Some insurers might encourage businesses to implement resilience or resistance measures, in order to reduce their flood risk. However, this is not a common strategy and section 5 further explores this.

What is it not working? There is a **lack of understanding about the risk that SMEs represent for the insurance industry**, because of their diversity and the difficulties to assess them. *"People tend to think that SMEs will have the problem solved if we tell*

them that if they put xyz resilient measures they will reduce their insurance excess down to 5k, or cover certain amount of money, but the reality is SMEs are so diverse and so difficult to assess" (Ins-21).

Understanding the level of risk that SMEs represent is a first step to offer a suitable product for them, but at the moment there is insufficient knowledge: *"The question is what are you buying it for? Particularly when it comes to something like flood. Are you buying it to get reimbursed pound for pound for everything you lose? I suspect not. I think it's mostly about business survival and continuity. When something bad happens, will I be able to continue trading, pay my bills, etc., etc.? And I think that's... insurance in a traditional sense what an SME needs? ...you can't capture them all in any sort of traditional insurance product? I can't quantify what all the costs will be due to the interruption, reduced footfall, all those sorts of contingent costs" (Ins-22).*

The difficulties mentioned in several interviews related to the fact that SMEs belong to different sectors, have various ways of operating, have different stocks, all of which make the **assessment of SMEs' risk a challenging task**. This challenge is well portrayed by the following interviewee: *"...essentially we've all got the same stuff in our houses, whether it's a studio flat or a 10-bedroomed mansion, you know, the cost of... but essentially it's the same stuff, but businesses are very different, the way they operate, what they're doing, essentially they're very different. And the insurers will say essentially each quote is very unique and special to that business and for that property, so it can't be commoditised" (Gov-03).*

Industry innovations

The floods modified the status quo of the insurance industry as the problems that SMEs were facing in affected areas resonated at a national level. Defra (Bonfield, 2016) has conducted some reviews to understand more about the problems that SMEs were facing regarding insurance after the floods. In response, different parts of the industry started to create their own solutions. As mentioned in the previous section, a recurrent strategy was allowing businesses to insure their excess as a way to make insurance affordable and managing the risk: *"Risk is a bit like a bet. If you can lay that bet off, someone else to protect your outlay, then great, and insurers do the same thing. You know, many losses are reinsured, so it's just the way it works, and if they can do that and they can find an affordable way of doing that, and they feel that that's the best way to protect their assets then, yeah, great, as long as someone's willing to take it on" (Ins-13).* Apart from that, the interviews reveal that the industry seems to be confident that things are moving towards finding a scheme for SMEs, as the quote from the box above exemplifies. However, it was acknowledged that it takes time to assess the effectiveness of the proposed schemes. It is difficult to find a one size fits all solution, and some interviewees are cautious about not favouring one scheme over another, and not disclosing their strategies too much, because, at the end, they are commercial entities in a competitive market.

In terms of specific flood insurance products offered to SMEs, certain industries are able to provide detailed underwriting to their members. Indeed, BIBA, which is a large membership organisation, was able to launch a member-wide commercial property scheme called **excess buy back scheme** (British Insurance Brokers' Association, 2016), through which they try to provide insurance in locations where

mainstream insurers would not be prepared to be involved with. It provides more options for the policy holder, who are offered to choose the amount of risk they want to bear: *"it's roughly about 3% of whatever the excess is your premium that you pay. So if it's sort of, let's say, £100 excess because it makes it easier. The policy would be £3 and if your flood claim gets accepted by your insurer and they say your flood claim has been accepted, you need to pay your excess. The excess, it's called flood excess in fact, the flood excess team would pay the excess for you. So, it's what we call an excess buy back, so with an excess that's you as a policyholder taking on a portion of the risk... essentially you are insuring that extra risk that you've got"* (Ins-20). Even though this represents an additional expense, the properties at very high risk of flooding are then able to access insurance: *"They do offer flood insurance in places where others might not. But they do have a higher operational cost"* (Ins-22). However, it is likely that this scheme is not suitable for the smallest SMEs. Since its implementation in December 2016, BIBA considered that the impacts of its scheme were positive with a resulting £157 million equivalent insured (British Insurance Brokers' Association, 2018).

Box

"The industry is definitely looking at how it can work with businesses and with other business trade bodies or representatives to understand... Can we provide some sort of toolkit for SMEs for them to understand they're high flood risk and manage that better?" (Ins-25).

Parametric insurance is another type of product launched onto the market. Flood Flash (Floodflash, 2018) is one example in the UK. This product provides full insurance cover based upon a fixed height of flooding formerly agreed between the parties: *"It basically says if you get floods to a metre, we will pay you whatever we've agreed, say £50,000, or £100,000 over a metre... So, it's basically you have... a trigger level of height and then there's a pay-out of a set amount for that height"*. This innovation is promising as it incentivises businesses to become resilient up to a certain level of flooding, while this decreases the risk for insurers given the reduced likelihood of high-level floods.

Resilience measures considered on insurance pricing

As mentioned in the previous section, one strategy that has been explored by insurers is to take into account that businesses have installed some resilience measures when assessing the true risk exposure rate of SMEs. Interviews revealed that, indeed businesses who are implementing resilience and resistance measures, would want these to be taken into account for a reduction in the price they pay for insurance. If this were to happen, then **the price of insurance could be affordable to those businesses that are willing to protect themselves**. Again, we found that the main barrier for this to happen was that the insurance industry are finding very difficult to take them into account because there is a **lack of understanding on how to model the different type of resilience measures**, and also because resilience interventions require that people act upon: *"I suppose actually insurers being able to*

understand exactly how to model it... I suppose, it's difficult to say, partly because there's an element of human intervention involved, right? So with a lot of these products there's a reliance on the business owner being there to put the flood gate in or turn on the pumps and various elements... so I think it's in progress and it's definitely something that the industry is working very closely on and trying to understand how they will be able to sort of price and understand the reduced level of risk... I think a lot of it is to do with the sort of behavioural characteristics of home owners... business owners they need to want to put this stuff in first so insurers aren't going to force people to do it if they don't want to do it" (Ins-25).

Another interviewee commented that one way to tackle the reliance on people deploying the flood protection, is to make available automatic products for SMEs: *'Especially because business premises are often empty, on weekends and night... kind of automatically deploying products... probably appropriate for businesses" (LGov-34).*

Taking into account resilience measures into the price of the insurance has been historically difficult for insurers, and today there is still a gap in understanding. Several interviewees asserted that research is being currently conducted to try to assess the risk reduction with certain resilience measures as the next box shows.

Box

"And that's why we are looking to try and push the resilience test up and say, if you just changed the design of the inside of your building, use the right materials, think about how you store, then that can help you. It might not stop you flooding, but it will reduce the impact on the property. It will reduce the time you're out of that property. It will reduce the impact on your business. All of which becomes cheaper for the insurer if you've got to replace it, but also less impactful for the business themselves, which gives them more chance of recovery. But that is all very much an unknown at the moment" (Ins-13).

Acquiring this knowledge takes time and needs to be tested before it can lead to a standard or regulation: *"...in order to get things into building regulations, they not only need the standards to be robust and made for a start, but they need an evidence base to back them up... The problem is even when that [the Code of Practice] is done... We are still not going to be in a place where we can do that. Simply because all the additional standard things like product verification of standards to show that this waterproof tile is actually waterproof. People might know damn well it is waterproof, but unless you have got proof that it is, they are not going to look at it" (Supp-17).*

The industry has done some work on the ground with some businesses to find ways to take into account resilience measures in order to reduce the price of the premium. Those cases reflect a willingness to make this work. We were told that the aim was to demonstrate that insurers can take into account resilience measures in the pricing. However, it was mentioned that this is something exceptional, requiring effort, contacts and interest to make it work. However, this suggests that if there is interest among insurers and businesses, then the issues of accessibility, affordability and increasing resilience can be resolved.

The issue of not taking into account resilience measures into the pricing has an important effect on behaviour. If resilience measures are not taken into account, then this can exert a **negative feedback loop**, resulting in businesses not wanting to protect themselves: *“if you cannot get any benefit in your insurance premium for making yourself more resilient to flood, you do lower the incentives to do it”* (Ins-22). However, if resilience measures are taken into account into the pricing of the premiums, **positive feedback loops** can be generated. It is an opportunity to incentivise businesses to protect themselves because they will be receiving a direct benefit. It was also mentioned that insurance should not be a first line of defence, but should represent the last resource.

Businesses in flood risk areas need to invest in flood protection, and it is **imperative to guarantee that business rates will not go up**. Otherwise, there will be no incentive to increase investment, as one interviewee puts it: *“If you are in a flood plain and you put a layer of expensive flood mitigation infrastructure, you might be paying more business rates as a consequence and that just seems perverse somehow”*. Take-up of insurance when renting premises

Take-up of insurance when renting premises

There is a need to look into the responsibilities of managing flood risk in the case of leased properties. In terms of buying insurance, not surprisingly, we found that there is a difference between the take up of insurance between businesses renting and those that own their premises. SMEs owning their properties are more willing to invest in flood protection. However, there is an additional hurdle for businesses that rent their premises with regards to the issue of liability between the tenant and the landlord. Indeed, there is a **lack of clarity** about what tenants and landlords are responsible for in regard to liability and responsibility, as well as what is the landlord prepared to do in order to improve things. Interviewees highlighted that **the responsibility to protect the building lie with the landlord**: *“Well, the landlord has the obligation around the fabric of the building... but the tenant will have obligations in relation to the specific space that they occupy and any alterations that they've made and done”* (Gov-03). As a result, insurance cover for the building falls upon the landlord: *“If you are a tenant in a flat or a leaseholder in a home where you don't own the freehold, it's not your responsibility to purchase building insurance... so SME will have to focus on making sure that their machinery and stock and their contents are insured, but it's not their responsibility to insure the actual bricks and mortar”* (Ins-25). While it was suggested that the rental agreement signed by the leaseholders should inform them on their duties, one participant highlighted that **tenants were not always aware** of who should be responsible for insurance cover and often lack awareness if they have the right insurance cover. Besides, this general lack of clarity over issues of liability between tenants and landlords seems to be further complicated by other issues: *“If we're talking about contents and we're talking about factories then if you're in a tenanted building in a factory you've probably got carte blanche to do what you need to do, because it's all your own machinery, so it probably wouldn't be owned by the landlord. So, it does vary a lot, there's a great deal of complexity in the difference between somebody who might be renting an office and somebody who's renting a factory space”* (Aca-07).

Responsibilities between landlords and tenants are considered to have specific implications for businesses' flood risk management strategies. For instance,

interviewees mentioned the fact that those businesses renting their premises have the ability to leave at any point, which they might do in the event of a flood: *"One of the reasons small businesses are slightly more relaxed about it, is that if the shop in the town centre is flooded they can just say, that's it, I'm off and go to another premises if it's rented"* (Gov-01). As such, it seems to be that **SMEs owning their business will have more incentives to invest in measures protecting them against floods**: *"Yes, businesses that own the premises are much more receptive, because there's an asset there... that they want to protect, whereas businesses that rent ultimately they can be tending to move"* (Supp-02).

Some interviewees argued that **many factors are at play**, such as the rental agreement, the type of building, or even a landlord's particular attitude. SMEs renting will rely upon the willingness of their landlords to implement flood risk management measures. Landlords can be receptive and proactive as this interviewee puts it: *"Landlords, we've certainly had quite a number... who have a number of properties in kind of mews type areas, you know, small groups of properties, where they've taken steps forward... have done things for their tenants"* (Lgov-30). However, there are other examples of landlords just doing the minimum. It was mentioned that many landlords live in different areas and there is a lack of empathy, as the real burden of a flooding event is difficult to grasp in the absence of a direct experience. The lack of empathy can be exemplified by the following quote: *"We've had businesses that have left because their landlords... well the landlords do two things. One is that they don't do anything, and they leave you to clean up... or they say: 'If you don't like it, then go, somebody else will take it because it's a popular place to have a business'... And the other side of it is that they will just do the same again and they will just put cheap plasterboard in, put the electrics back in again and say: 'There you go, hope you don't have another flood'. So, they will spend the minimum"* (Supp-19).

Moral hazard

We explored the interviewee's perspectives on whether helping SMEs with grants to recover or access to insurance could result in a lower uptake of risk reduction actions. In other words, we explored the presence of moral hazard effects. A moral hazard effect takes place when a mechanism to reduce risk results in individuals implementing less risk reduction activities. We specifically asked interviewees about their views on the following statement: "Businesses don't protect themselves because they know that if flooding happens, they will receive help from the Government/other organisations/or insurers will pay...".

Various interviewees disagreed with the idea: "No, not at all. No, I don't think you'd get that from businesses at all. I think that businesses will do what they can to protect themselves. The worst thing they want is to be flooded" (LGov-08). Other interviewees agreed that while some businesses might assume that the support will come if they are flooded, the ones that have been flooded would still want to repair their property, so they do not flood again, rather than just relying on external support: "I think it depends on which business you're talking to. If you talked to businesses being flooded recently, I have a feeling they might say that the government didn't really help. Or help in a very limited way and they have to do lots of things themselves or their insurer has to do most things. If you talk to a business that's at flood risk... but haven't been flooded recently, they might assume that the government would be there to support them" (Supp-27). Similarly, most interviewees agreed that businesses with flood experience know that **the external support is not as significant as to keep their business running**: "They understand that, you know, a handout from the Council is not the same as keeping your businesses running, and for businesses that is an important message: 'You might get a pay-out from your insurer, but it won't happen fast enough for you to continue running, so it's better to be prepared; better not to have to close than to recover'" (Aca-07).

Box

"Even if you've got full insurance on everything you've got, you've still got the emotional toil of it all. You've still got the time when you were going to be closed and the stress of having to get everything re-done. All that, while you've got customers who you can't service, you've got competitors in other places. So, you know, people still need to shop. So, they go shopping elsewhere, and then they get into a habit of shopping in that other place, and they get into that habit very, very quickly" (Supp-32).

Several interviewees who are part of organisations supporting businesses, noted that when experiencing flooding, SMEs also know that there are damages that are difficult to overcome, regardless of the type of support. Therefore, they do not agree with the statement:

Some interviewees views did not favour the idea that businesses consider external help as a "comfort blanket", but expressed that it is difficult to generalise. Some proactive businesses may act swiftly, because it is important to get back trading quickly again, while others might not worry too much: "Well, we got a grant last time and we got a grant the time before that as well, and therefore if it only comes around every five years, I can probably cope with it" (LGov-14). Another interviewee associated the lack of protective actions to uncertainty, rather than to the idea that businesses might rely on being saved by grants: "If I was a business owner and I was

thinking that a flood hasn't happened, but you are in a flood risk area... if a flood hasn't happened in the last two to three years, then there's probably no point in spending money on resilient measures on something that might not happen. I suppose that's again, a perception point, but I definitely think that some people will think that. But I don't know if that's a minority or a majority" (Supp-23).

Some interviewees mentioned that the attitude of 'doing nothing, because the help will always be there for you' is a **cultural issue** that perhaps happens more in the US than in the UK, and that it tends to happen more in relation to households rather than businesses: "If there's a blind expectation that funding will be made available, then would you put your hand in your pocket? Perhaps not" (Lgov-30); "I don't think it's just SMEs, I think, as a culture, we expect government to pay when something goes wrong, you know?" (Supp-19). It was acknowledged that a cultural change is needed towards **transferring ownership of situations and giving responsibilities to people**. It was said as well that there is a need of reciprocity and understanding that while the government has a role to play in managing flood risk, there is a "...need to change in culture of people understanding that they can also take action to protect their properties" (Ins-25). Although some efforts have been made to communicate the message that the government will not come to 'pick up the tab', and that businesses and people need to protect themselves, the message has not permeated well. This might be due to the **mixed messages the government has sent**: "I think there still could be a lot more done nationally in terms of getting out the message: 'We'll help you to help yourself' ...but actually we're not always going to come and pick up the tab and we're not always going to be there to help you, and you need to start taking responsibility for yourself. But the problem is nationally. I think the messages has always been: 'Oh, we'll come and help you. We'll always be there when there's a flood. We'll be out there with our blue light services and come and rescue you'. All of those sorts of things, and I think all of the messages nationally probably have been extremely mixed" (LGov-09). In this sense, it was acknowledged that there is a need to provide more coherence on the extent to which the government will help: "Obviously the government gives slightly mixed messages when it says that it's up to the insurance industry to do it, and after a big flood event you get the Prime Minister down in a flooded high street promising 5,000 pounds grant to help businesses, at which point nobody actually takes up that 5,000 pounds, but it makes them look quite good" (Supp-15).

7. How can flood risk management be improved?

Lessons and what needs to change

Barriers to an effective flood risk management

A central priority for small businesses is to survive against the pressures and difficulties they might encounter. However, there are numerous barriers that prevent businesses to engage in flood management. *"Small businesses have a lot of pressures on their finances and on their time and they may not survive as a business until the next flood, even if the flood's only five years' time. You know, it's about the longevity of small businesses and of the small margins that they operate in [which] aren't enough"* (Aca-07). As such, considerations of **money and time** and the resources needed in flood risk management are significant barriers to businesses: *"So cost, time and resources have got to be up there."* (Supp-02).

Another common behaviour among small businesses relates to how they assess and accept their flood risk, which plays a significant role. First, there is a common **lack of understanding and awareness** among people in general about their risk of flooding: *"I suppose the lack of awareness for a lot of SME owners on whether their business is at flood risk or not... We get a lot of people saying: but I'm not at flood risk because my house has never flooded before, or my business has never flooded before, or that area has never flooded before. That doesn't mean that it's not at risk of flooding in the future, and I think that's definitely an issue that people fail to understand"* (Ins-25). Others may be conscious of the risks, but adopt an **"ostrich strategy"**: *"They just think, oh well, we've had two floods, we won't have another one"* (Supp-19). All these behavioural barriers are exacerbated by the unpredictable nature of flooding. In fact, it seems that memory about flooding can be quite short, and some businesses tend to forget over the years how badly it has impacted them. *"I think people don't have long memories... and they can get a bit complacent with it"* (LGov-10).

Another recurrent barrier, which was discussed by the interviewees, is the **lack of support and reliable information** about what efficient measures businesses can implement. Trustworthy advice can help businesses to be confident that the transformations they make will be worth the investment: *"I think, first of all, there is reliable, impartial advice that is based upon the fact of what works, which is evidential-based, ...tailored to an area's needs, as well as to a property's needs and a business's needs..."* (LGov-14). The problem of where and how to get reliable information tends to open the door to opportunists, who contribute to undermine the trust of SMEs as the next box shows:

Box

"Some businesses are quite suspicious now of people knocking on their door asking questions about the flooding, because there's been a lot of kind of cowboys going round trying to sell them flood protection products or things they don't need, or saying they're working with the Environment Agency and they're not necessarily. So, it's created a bit of suspicion, I think, so that when there is a genuine piece of work happening that they should be getting involved in, they don't know whether they should or not be talking to people" (LGov-04).

The implications of these 'cowboys' undermining SMEs trust are that businesses might resist implementing resilience measures and develop a general scepticism about the efficacy of the measures.

It was also highlighted that resilience products need a certain amount of **maintenance, in terms of costs and time**, for them to work appropriately. This might be an additional barrier.

The effectiveness of business resilience measures additionally depends on whether surrounding buildings have also put them in place, what can be described as the **neighbouring effect**: *"A lot of small businesses will be in buildings that are linked to neighbours and, therefore, your measures are totally ineffective, unless your neighbours do them too. Yes. There's issues about just how effective things are going to be"* (Supp-28). This quote may additionally reflect the fact that businesses are more likely to implement resilience measures following the example from their neighbours.

Interviewees also stressed that the issue of **ownership of the premises** is another factor that can impact upon a business effective flood management strategy: *"If they own their building, I think the biggest challenge is: Can they afford to do all the installation of the measures? I think for businesses that don't own their own building the challenge is convincing their landlord that it is worth doing"* (Gov-09). This is a significant factor, as the majority of businesses do not own their premises (See previous section) and are therefore reliant on their **landlord's willingness or permission** to implement flood resilient and resistance measures. The fact that those SMEs that do not own their premises are dependent on their landlord to put adequate flood management measures in place was highlighted as an important factor among the interviewees. This further poses the **issue of liability** between the landlord and tenant in terms of products and maintenance costs: *"So what's the division of liability and responsibility between the landlord, as opposed to the tenant, and what is the landlord prepared to do to improve things or not"* (Gov-16). This issue was highlighted as an important factor of concern with regards to the businesses' ability to contract insurance, which again rests on the landlord's responsibility for those renting their premises.

We found that there is a misunderstanding regarding flood insurance. There needs to be more clarity about what SMEs are being covered for. At present, the flood cover is not addressed separately, but offered as part of a packaged policy within their property or business interruption insurance.

Improving SMEs engagement

Interviewees were asked how SMEs engagement around issues of flood management could be encouraged. Among the various strategies, what stood out were the **local and community events and networks** set up by local councils and other organisations working at that level. As such, working at the local level enables SMEs to connect with other businesses and organisations in their area, which contributes to the creation of strong support networks. For that purpose, it is useful to adopt a **"people-centred approach"** to ensure that businesses are listened to and are provided with the adequate resources to keep those networks running: *"So, it's about listening to communities and about addressing their issues and problems... We need the community to sign up to flood warnings, do a resilience plan, etc. We're going in to listen to the community, and work out their problems, use their local knowledge and skills to help formulate and combine it with our expertise, and come up with solutions"* (Supp-28).

Similarly, the need for **face-to-face communication** was considered key to provide up-to-date flood-related information to businesses, especially in relation to the grants that are available to them: *"We basically went around door knocking. We engaged with them face to face. It wasn't done by telephone or email. We arrived at the premises, asked if there was anybody who we could speak to about the flooding and where possible we said: this is what you [can do to] apply for these grants. Do you need any assistance, ...as to maybe what you could do? How to apply for these grants?"* (Supp-02). In addition, the interviewees emphasised the need to directly present information to people rather than sending it: *"I think trying to email and wait for responses... You'll be waiting for ages, whereas if you catch them whilst they're in, then you can speak to them there and then."* (Gov-31). *"They still made their own choice, but at least they were better informed"* (LGov-33). Other innovative ways of communicating are setting up **websites** (Floodadviceuk, 2018) **and creating online toolkits** (Sesameuk, 2018) for businesses. *"We have actually got a toolkit that was done by Lancaster University, ...the businesses can literally fill that in online [which] highlights what they need to put in place..."* (LGov-10). Another interesting case is a ten-minute plan, which was designed to include all necessary measures businesses need to have in place in the event of a flood (Business in the Community, 2018).

Another useful way to engage with businesses is the use of **traditional business and communication channels** already in place, such as the business organisations that they are part of (i.e. Federation of Small Business, Business in the Community) or the already existing networks to directly disseminate flood information: *"I think a key route is through using the established networks. The networks the environment agency is building up and then the local authorities are building up... So, could that be through electoral roll, or it could be through trading standards... or through the other kind of business facing? The regulatory business facing part of the council who are already in contact with all of those businesses..."* (Supp-29). However, some interviewees pointed out some doubts regarding the accessibility of these traditional business channels for very small businesses. For instance, many businesses are not part of the Chamber of Commerce: *'A lot of the businesses in 'x' are SMEs. They're not members of the Chamber of Commerce; they're not big enough... You might have a business on 'y' Road, which has got five employees and they just don't think being a member of the Chamber of Commerce is going to benefit them'* (SuppArt-12). Similarly, an issue that was pointed out is the need to develop a relationship

between the Local Councils and the very small SMEs. In many cases, SMEs of this size do not tend to interact much with Local Councils.

Lastly, one interviewee stressed the importance of providing information to businesses at **the right time** in order to have a greater impact: "So, it's making sure you communicate with people and let them know the help's there when they're ready for it, so they don't feel they've been abandoned, but you're not trying to force them to fill in grant application forms, while the key thing that they're focussed on is getting the water out of their building. So, it's just, as I say, making sure that they know you're there and keeping going back to make sure you're there when they're ready" (Supp-32).

Table 7. Enablers referred to by stakeholders

| Enabler/stakeholder | Gov | LGov | Supp | Acad |
|----------------------------|-----|------|------|------|
| Face-to-face communication | | ✓ | ✓ | |
| Local/Community focus | ✓ | ✓ | ✓ | |
| Business networks/channels | | ✓ | ✓ | |
| Online resources/toolkits | | ✓ | ✓ | ✓ |

As discussed above, **awareness** and acceptance about the risk of flooding faced by SMEs can be a key barrier to an appropriate flood risk management. Given that there is the need to increase awareness of future levels of risk, interviewees were asked how businesses could be engaged to be better prepared. Overall, it seems that most interviewees agree that there is already plenty of information about flood risk available. However, work needs to be done to provide SMEs with tailored information. Caution must be taken, however, on the nature of the message and who communicates it, as this will determine whether it has a positive impact on the businesses' flood risk management: "I think we have to be very careful about how we do that awareness raising. And it is perhaps better, I don't know, whether it is the insurance industry that needs to get on board with this. I don't know whether it is membership organisations, like the tourist boards and destination management organisations, the Chambers of Commerce and the Federation of Small Businesses; whether it is the local authorities, or whether it is a combined effort to make people more aware. Flooding happens. It has happened in these areas before and the likelihood is that it will happen again and we can't say when that will be" (LGov-14). For instance, one interviewee stressed the need to provide **positive and simple messages**: "This is a good thing to do. It is an easy thing to do. And if you give them a good story and a means to act, people act generally in the way you want them to. I have always found that if you tried to scare people into acting it promotes paralysis rather than action, you know?" (LGov-14). Avoiding the use of a patronising tone at all costs was considered by one interviewee as crucial for businesses to listen to the information and take up necessary measures.

Some businesses might be more apt to receiving advice from other businesses by focusing on their **shared experiences**: "You know, it's easy to go in and talk to them,

but it becomes very hypothetical, ...oh well, it won't happen to me, I'm okay here, or it's never happened before, so it won't happen again, whereas if you have people present or know stories of other businesses in the local vicinity who've experienced flooding and who have prepared well, or are expressing how shocked they were, and how much impact it has, they tend to listen and take that on board" (Gov-31). Similarly, another strategy to raise awareness among SMEs would be to have **business role models** in place: "I think that we need to get some businesses on board in order to get other businesses on board. And I know that sounds like a vicious cycle, but I think you need one key, we'll call them champions. A flood champion in the area to demonstrate that they have taken resilience measures and that it is not as complicated as some people think it is" (Supp-17). Additionally, using the **existing social structures**, such as their social networks, breakfast clubs, local business clubs, among others, would prove beneficial.

Another interviewee was rather sceptical about the need to increase flood risk awareness. It was thus argued that it would be more beneficial to focus on **providing easy and adequate support to businesses**: "So I think people are probably quite aware, but if there's nothing obvious, simple and reliable they can do, then they're quite possibly being sensible by actually not taking any action. So, I'm not sure I disagree with them not preparing, really, because it's so complex. I see them do stuff that is quite obviously going to work for them, rightly or wrongly, but they're not relying on outside expertise on what to do" (Aca-26).

What are the minimum resources SMEs need to bounce back?

There is an increasing need to assess the risks of SMEs. Small businesses share similar risks to those of households. However, a key difference is that when SMEs are affected, the effects can impact their supply chains or their communities. Thus, SMEs need to have the capacity to cope and be able to have business continuity. As business continuity is important, we asked interviewees which are the essential things that SMEs need in order to continue operating, or what are their minimum requirements to get back in business after a flood. This question was also asked directly to businesses (See Table below).

Table 8. List of the 5 most worrisome damages that business experienced with a flooding event

| | |
|---|----|
| Closure of premises | 20 |
| Damages in the overall financial situation | 17 |
| Access (roads, motorways, railways) | 16 |
| Disruptions in the product/service delivery | 16 |
| Lack of cash-flow | 15 |
| Stock damage | 15 |
| Building structure | 12 |
| Lack of customers | 12 |
| Energy power disruption | 9 |
| Sewage disruptions | 8 |
| Disruptions in communication | 8 |
| Specialised equipment | 7 |
| Building maintenance | 6 |
| Disruptions in the supply chain | 5 |
| Office equipment | 5 |
| Changes in the firm's reputation | 4 |
| Other | 4 |
| Water supply disruption | 2 |

Table 9. List of the essential resources SMEs need to continue operating after a flood

| | |
|--|---|
| Determination | Speed up insurance claim procedures |
| Customers | Cleaning & advertising |
| Financial assistance | Customers |
| Alternative office space | Access, dry premises, power, connectivity and security. |
| Support on fighting insurance claim | Customers |
| good insurance and access to good advice | 4x4 Vehicle |
| Access roads | manpower for clean-up and customers |
| Communication, roads | Hands on help |
| Money | Been able to get started with work asap |
| Determination | cashflow, premises and IT infrastructure |
| Plan for keeping systems working during the interruption | Ground water management |
| Premises to trade from | Football pitch and stadium |
| IT and Internet Connection | Clean & secure premises with Cloud based access to data |
| money, good staff. emergency business plan | Power |
| telecoms, especially emergency back-ups | Access |
| Safe premises | Flow of stock, transport, access |

Table 10 Essential resources SMEs need to continue operating after a flooding event by sector

| | |
|--|--|
| Agriculture, Forestry and Fishing | 4x4 Vehicle, Ground water management |
| Manufacturing | Money, Power |
| Construction | Clean & secure premises with Cloud based access to data |
| Wholesale and retail trade | Customers, Financial assistance, Support on fighting insurance claim, Premises to trade from, customers, flow of stock, transport, access to |
| Repair of motor vehicles and motorcycles | Determination |
| Transportation and storage | money, good staff. emergency business plan |
| Accommodation and food services | Alternative office space, Good insurance and access to good advice , access roads, Been able to get started with work asap |
| Information and communication | Access, dry premises, power, connectivity and security. |
| Real estate | Speed up insurance claim procedures |
| Professional, scientific and technical | IT and Internet Connection, Telecommunications, especially emergency back-ups, Hands on help |
| Education | Communication, roads |
| Human health and social work | Cashflow, premises and IT infrastructure |
| Arts, entertainment and recreation | Plan for keeping systems working during the interruption, Cleaning & advertising, Manpower for clean-up and customers |
| Other services | Safe premises, Football pitch and stadium |

When asked about what useful measures SMEs could put in place in order to recover from a flood, almost all interviewees agreed that these strongly depend on the nature of the business. Indeed, as mentioned above, SME are very heterogeneous in terms of both numbers of employees and types of activities. For instance, it was argued that manufacturing businesses could protect their stocks by "**operating in a just in time** sort of world... And then also [protecting] any critical equipment or systems and things on site as well, about how they are perhaps set up and protected within the site as opposed to the whole site itself" (Gov-16). SMEs from the service or retail industry, such as guesthouses, B&Bs, cafés and food-related businesses, are particularly reliant on their premises in order to conduct business. Therefore, the focus should be on **getting the water out** of the premises as soon as possible. For this purpose, **the reactive and resilience of the area** would be highly beneficial to them: "We had the road sweepers down there all the time and clearing up. People were just putting the junk at the end of their drive or outside their premises, and as I say, we had wagons going around and picking up bulky items and taking them off to refuse, to the tip. So, I think that was a useful service for them" (LGov-35). In contrast, other business types, such as consultants, do not necessarily rely on a specific location and should be able to get their business back up quickly as long as they can **access their information and records**. In this case, simple precautionary measures, such as making sure that all IT equipment and electronics are secured in safe places should be essential.

The impact of flooding and the ability of SMEs to prevent damage will vary substantially across businesses. However, interviewees mentioned one key aspect that businesses must consider at all costs: their **customer base**. Indeed, in order not to lose customers, SMEs should prioritise keeping their customers informed about their situation, while ensuring the supply of product and services in order to keep the business running, even if operating via a **temporary online service**: "I think that most businesses now have at least some online presence. They probably are engaged in a level of communication and want to be able to communicate to customers about [their] business if it's running as normal or if there's some limits to their business" (Supp-27). Moreover, there should be the possibility for employees to work off-site during the recovery period. However, SMEs who are mostly reliant on local supply chains might have increased difficulties in getting back to normal if their usual suppliers have also been affected by the floods.

Being able to **relocate temporarily** was also considered to be of great help to businesses. However, this is not always simple. "Having somewhere to operate... a lot of them, were sort of like... sort of garage repair type business, like manual type businesses or builders yards or dirty industrial usage on a small scale" (LGov-35).

A **support system in place** for those having to relocate was deemed particularly important: "Some sort of resource and physical help from NGOs, I suppose, or organisations that can be there on the ground, actually giving information out or offering temporary accommodation" (Supp-23).

Interviewees highlighted the difference between the rather short-term and urgent measures needed after a flood (e.g. sweeping the roads, getting the water out of the building), in contrast to the lengthy and costly process necessary to achieve a complete recovery. It was acknowledged that the capacity of SMEs to get back in business quickly is highly dependent on the nature of their business, their size and the resources available to them. Nevertheless, in all cases, getting back to business as soon as possible was deemed a crucial aspect on their resilience. In order to do so it

was recommended that they should **prioritise key aspects while leaving others for later**: *"You focus a lot on drying the property really quickly, but then maybe you get the store trading in a temporary way, whilst works are then carried on over the next month. So, you might have four to six weeks of actually just getting the business sorted..."* (Ins-18).

Interviewees also argued that it might be useful to have **coordinated standards and certification schemes** in place in order for businesses to be able to trust that the resilience products they buy are effective. It is important to mention that some progress has been made in this regard, following the recommendations made by the Government "Bonfield report" (Bonfield, 2016). For example, a website was created to help SMEs look for necessary flood-related support and product advice (Floodadviceuk, 2018; National Flood Forum, 2018). Another outcome of the report was the conversion of an old barn in Cumbria into a showcase of different resilience measures and products, and it is open for the public to visit (Dhonau, 2018).

Incentivise insurance take-up

How to incentivise the uptake of insurance remains a key issue in determining the effectiveness of SMEs' flood risk management.

Overall, interviews stressed the importance of the broker's role in assessing the risks of businesses, since it is the first point of contact for SMEs wishing to get insurance: *"...the vast majority of insurance is sold and distributed by brokers and they can work with a business to help understand what it is, the type of cover that they need and find the best cover for that and you have some very specialised brokers"* (Ins-25). The role that brokers play in providing insurance quotes to businesses, acting as a "middle-man" between the insurance industries and their customers can have an important impact upon whether businesses take up insurance covers: *"If you've got a flood risk broker, a specialist flood risk broker, they [insurance companies] might trust that sort of submission, perhaps more than if it was just someone who normally does a lot of standard property and a bit of motor and has submitted this flood risk"* (Ins-20). The "Property Flood Resilience Action Plan", which was concerned with the increase of resilience measures among SMEs, looked specifically at the role of brokers and how they communicate to businesses.

Brokers have a very detailed knowledge about the issues businesses are facing, as well as the measures that might work for them best: *"Things like signing up to the Environment Agency flood alerts, 46% said it had no effect whatsoever on insurers' ability to offer better terms as a result. 21% said [this was] effective..."* (Ins-20). Brokers might also be helpful to distinguish between the efficacy of resilience and resistance measures.

For flood insurance to be effective and taken up, interviewees deemed necessary that the Government should promote adequate standards and a coordinated approach to resilience. In this way, the insurance industry would trust that such measures would effectively reduce business flood risk, and thus be able to lower their insurance premiums and excesses.

Awareness and perceptions among SMEs of their flood risk obviously remains an additional hurdle in their take-up of insurance products: *"There's a really, really large education piece, I think, about the fact that there are some companies in high-*

flood risk areas, but who haven't been affected that recently, who would benefit from cover" (Ins-22).

Exploring other strategies

Flood Re PLUS SMEs?

As mentioned in the introduction, SMEs are not included in Flood Re based on the argument that they can secure affordable insurance. However, the 2015/16 floods raised the question of whether SMEs can afford increasing insurance prices. The interviews revealed that the issue of extending Flood Re to SMEs has been discussed at various policy levels and in different spheres. This section presents the mixed views around this matter, as well as the challenges and opportunities.

We asked interviewees if they considered that Flood Re should be extended to SMEs. Not surprisingly, the organisations that work closer to SMEs supported in the majority of the cases their inclusion in the scheme. In contrast, people who have been involved in the discussions around this matter were more cautious. One of the main arguments is who would bear the risks and the costs if SMEs are included in Flood Re. If SMEs reduce their risk through insurance products, insurance companies would be increasing their risk. At the moment, there is uncertainty on the level of risk that SMEs represent. *"Part of the reason for not including businesses in Flood Re is that they're so diverse that it's very difficult to model their risk"* (Supp-15). Unlike households or vehicles, which are asset driven, SMEs operate in a very different way and have different products. Businesses need to guarantee that they can continue operating. Hence, interviewees highlighted the importance of **insuring business continuity**, mentioning also the lack of understanding and challenges to model this: *"If you've got a business that holds an awful lot of stock that sits in a flood risk area, you are not only insuring the property to get the property back, but you're also insuring all of the stock that sits in the property. You're also insuring all of the business interaction that goes along with that, so if you're out for a year and you're insuring that turnover, then that loss can be much, much greater than a household loss. And for anyone to be able to... supplement that would just make the rest of insurance far too expensive"* (Ins-13).

In terms of the willingness to extend the scheme, interviewees agree that there is a lack of willingness to dismantle Flood Re to rebuild it and include SMEs. On the one hand, it **seems not commercially attractive**. *"I think the sort of notion that Flood Re could be extended to the business insurance market is superficially attractive, but I think you will find... that they [insurers] will say it's almost impossible to do"* (Gov-03). In addition, **it would be costly to the industry**. *"It's not a particularly long-term profit-making venture at the moment, just because of the way it's structured, so it effectively costs the insurance industry. So, I don't know what the motivation would be to extend that to commercial"* (Ins-22). More importantly, there is **no motivation to change**. *"The market is not willing to change. There's not the drive there for change, so you could force the change... If not, you've just got to accept that this is risk our country faces"* (Ins-18).

The issue of who should bear the cost of extending Flood Re to SMEs raises deeper questions about **what is it that society wants to protect** as the following box portrays.

Box

"It's not a right and wrong question, it's a question of what does the market think or what does the general public think about using their money to support small businesses. So, it's not a simple yes/no; I think there are some that should be included for the equity in terms of residential. And I think the question about small businesses is a more general societal question, so if society wants to use residential money from low income families to support businesses... I suspect the answer is no, and I suspect that's why the decision was made, because of the cost subsidy" (Aca-07).

In terms of the Government sharing the risk of SMEs, it was also mentioned that there was not much appetite of this. "For Flood Re, I don't think the government gave a specific guidance of not including businesses in Flood Re. I think the guidance they gave to the industry was that they didn't want the industry solution to exceed the unofficial cross-subsidy that was already estimated across the market, which I think was about 8%. The industry could not model that including SMEs. The Government accepted that the limited solution provided by the industry was the only one that was going to work." (Aca-07). If the levy was to be shared between businesses, it was pinpointed that some firms would lose, and others would win: "Cross subsidising profitable cafes by the river with unprofitable hairdressers at the top of the hill. Why should the hairdresser who's not making as much profit be funding a cafe at the bottom of the hill that is making a lot of profit?" (Ins-25).

Contrastingly, various interviewees strongly supported the inclusion of **smaller businesses**: "The proposition that we've had is for micro SMEs, so you know, perhaps like a corner shop where someone lives above the property or a pub or a veterinary surgery or something like that, these small businesses" (Ins-20). Interviewees also highlighted that Flood Re should be extended to **home-based businesses**. "Certainly some definition of small business I feel should be included, just in terms of getting the residential market covered, the places where people live... So, then there's micro businesses, people who might be running a business from their home. I think on the whole probably those people are not telling their insurance companies that they are running a small business from home, so they may well be covered until they claim" (Aca-07). Interviews revealed that is unclear if people who are running micro enterprises from home can be covered by the scheme, and, as shown in box below, it would be useful to clarify this matter.

Other criteria that was mentioned was the **turnover**. "Flood Re could definitely be extended for businesses, like small businesses, which were trading under a million pounds a year or under £750,000 a year. That would seem like a real practical solution" (Supp-12). In this manner, there have been discussions about including microbusinesses in Flood Re, but there have not been great advances in that regard.

For some interviewees the inclusion of SMEs in the scheme would not represent an important burden for the industry, but they think that there is a lack of **political will** as exemplified in the following box.

Box

“...the impact wouldn't be huge for micro SMEs and we're not talking sort of people making an awful lot of money from these businesses. These are really small businesses, fewer than 10 members of staff. I think there could be a mechanism there or certainly it's conceivable that they could be in Flood Re. It just comes down to politics and the appetite make that happen” (Ins-20).

Extending Flood Re to SMEs is regarded as an **opportunity to push protection if it is tied to the compulsory take up of resilient measures**. *“I think them doing it [including SMEs in Flood Re] would be a good way to drive protection for small businesses and you could get the Flood Re start insisting on taking resilient measures. So, you could say, I'm going to drive resilient measures by saying that you have to be in Flood Re, but then to be in Flood Re and get covered, you've got to do resilient measures”* (Ins-18).

Others would argue that Flood Re has not worked properly in operational terms at the moment, given that it has not really incentivised the take up of resilient measures. Consequently, extending it to SMEs might not be entirely beneficial due to the effectiveness that Flood Re has shown to date. *“I don't know, to be honest. I don't think Flood Re is perfect in its execution anyway, and I don't know if an exact copy of Flood Re should be used for businesses”* (Aca-05). Moreover, **extending Flood Re as an exact copy of the existing model could be a way of reinforcing dependency**. *“People disagree, but we don't necessarily want the insurance system to be there as a buffer. We might want people to get used to the idea of floods and to get used to preparing and adapting and absorbing the costs, rather than thinking that insurance is the answer. And particularly because small businesses are a bit self-reliant anyway. I'm not sure you'd want to undermine that”* (Aca-26).

It was pointed out that if Flood Re were to be extended, the idea of what constitutes an SME will need to be revised. This is important in order to avoid the risk of subsidising those businesses that don't need it, such as branches of big companies. It was also highlighted that if Flood Re were to be extended, it would have to be structured in a different way, because its effectiveness depends on a risk management strategy. Interviewees convey another reason why Flood Re should be extended to SMEs. Some argue that flooding is a permanent problem. As an interviewee expresses it: “Flooding is here to stay”, thus **strategies need to be put in place** to harness the country. Linking Flood Re to risk management strategies implemented by SMEs is an opportunity to advance SMEs resilience.

| Further Eligibility Guidance (July 2017) ISSUE 1, p.2 | SME-302 |
|---|--|
| “Dwellings which form part of a single mixed-use property can be eligible for Buildings/Combined cover if the Dwelling has its own Council Tax Band and does not attract business rates. Examples include B&Bs and homes where incidental business activity takes | “Flood Re: says that guest houses will qualify for the scheme as long as they are wholly council taxed, our personal experience is that this isn't the case. We have been told by several insurance companies, including direct line that they |

place. However, Flood Re can only accept policies that fulfil the definition of a "Home Insurance Policy", where such policies are not being treated differently to non-Flood Receded policies. If insurers are seeking to cover a home as part of a wider insurance policy, for example, a farmhouse under an existing farm policy, Flood Re expects a designated premium to relate to the Dwelling element and for the policy to meet the other eligibility criteria, including being in the name of an individual. For the avoidance of doubt, Flood Re will only cover contents and fixtures and fittings that relate to the residential part of any mixed-use premises. We would not expect appliances and trade tools used solely for business purposes (such as dog grooming appliances or hairdressing tools) to be covered by Flood Re's definition of "Contents".

will not provide Flood Re: scheme cover because our property is too large. We have had to continue with our current provider who has increased the excess from £2500 before the floods to £10,000 post flood. The annual premium has also doubled to £3000. I would be interested to know how this can be improved as I feel, reading the Flood RE: guidance that we should qualify. I would also be interested to know if other guest houses have the same issues. It is very stressful, and we feel left out and let down".

Could flood insurance be made compulsory?

If SMEs in flood risk areas need to better manage their risk and if the existing research suggests that it is difficult to engage with SMEs, then what about making flood insurance compulsory? We wanted to explore the different perspectives around this question. Overall, we found that this is a difficult issue, and the majority of interviewees had not considered it before. The general view is that this action would not contribute to solve the problem. First, its implementation would be very complex. Second, it would not be fair if affordability issues are not resolved. Third, the current direction is that the market already offers a range choices and citizens have a degree of responsibility, while the government avoids imposing mandatory measures. However, interviewees agreed that there is an urgent need to motivate businesses to act.

In terms of the political difficulties of implementing this measure, interviewees mentioned that **flooding is a localised issue, and this makes it difficult for the Government to regulate.** "I think government wouldn't want to impose burdens on businesses by making everybody do some kind of flood insurance, because... 70% of businesses in the UK wouldn't need to do anything because they're behind good flood defences or they're in areas where there is no flood risk. It's tricky using a law. Law is a very blunt way of actually addressing an issue like this, because obviously a government regulation, a government law has to apply equally to everybody" (Gov-01). However, it was also highlighted that since businesses are part of supply chains, a flooding event could **impact indirectly wider areas** and not just locally: "...if your business is located in a flood risk zone, then you should have flood insurance, but then just because you're not in a flood zone [this] doesn't mean that you won't be impacted by flood. It's more the case for businesses than for homes, because businesses have supply chains, they have customers, and clients, who, if they're affected, their supplier is affected and then the business is affected" (Aca-05).

Some interviewees were inclined to the idea of making flood insurance compulsory. "I think it **should be 100% compulsory.** I don't understand why it's not... If we drive a car, you have a car insurance. Why, if you live in a flood zone... should you not have flood insurance? I don't get it" (Supp-27).

The arguments provided were mainly from the perspective of improving the overall risk management, which would **help protect communities**: *"I think the impacts are so great on our community... They will see the reasons behind it, and also we have various pockets that have flooded that have never flooded before and that were nowhere near the river... I think from our area's point of view, I think they would probably all agree that it would be a good idea"* (LGov-10).

An interviewee argued that although making flood insurance mandatory would be difficult to put in place, **with time it would be accepted and become a normal thing**: *"Again, like anything that's new, people might resist the change, but I could only imagine what happened when fire insurance or at least fire regulation was made mandatory. I bet there were people who didn't take to it that well at the time, but over time it just becomes a normal practice and that's the case probably for a lot of things"* (Supp-23).

Other interviewees warned that from a common-sense perspective, it would be good to make it mandatory, but **it all comes down to affordability**. *"Make it compulsory when it's not affordable isn't really fair, isn't it?"* (Supp-02).

In addition, if insurance was made mandatory, there would be a need to have a more comprehensive flood management strategy. *"So maybe not just making flood insurance mandatory, but making it mandatory to take all of the most reasonably possible resilience improvements to your property"* (SuppArt-12).

For others, it depends on the **type of business insurance** that should be compulsory, since there are different types of insurance that could apply to SMEs. A couple of interviewees were inclined to suggest that **insuring the building** should be made compulsory, particularly for **landlords** that rent premises to SMEs. Interviewees agreed that this can be a measure to help SMEs in flood risk areas.

Most interviewees mostly agreed that making insurance compulsory would be complex and would not solve the problem. On the contrary, this would represent an additional burden. *"If there were things that were made mandatory, it would just feel that it was just another problem being put onto their shoulders really"* (Supp-32).

There was a general agreement that even though making flood insurance compulsory is not a good idea, there is the need to do more to drive businesses to protect themselves. In this sense, interviewees offered ways to persuade SMEs. For instance, resilience measures could be pushed through **lenders/legal firms**. *"Will I ever see that insurance is mandatory...? I don't think, but what we would like to see is people like lenders, legal firms encouraging the uptake of resilience when they're lending money to new businesses to start up, for example."* (Ins-13). For other interviewees, the **supply chains** could be a source for encouraging SMEs to protect themselves, instead of making flood insurance compulsory. This was contested by another interviewee who mentioned that it is unlikely that the supply chain can push the implementation of risk management, because of the low likelihood of a flood. *"I don't see why if you're a client in that supply chain, why you would be expecting and requiring those people that you're relying on to have a strong, established means of managing risks in whatever sense, and flood is just one of those. To guess that the issue here is probably, in its hardest sense, is about the cost of these investments versus the probability of it actually happening, and if we're talking of things that are 1% probabilities, that's not the biggest driving force of a business"* (Gov-16).

Another proposal to avoid making flood insurance compulsory and incentivise protection involves insurers implementing conditions to provide insurance.

Box

"If you had a survey by a professional who says you need to block up your air bricks and make air circulation... or you need to have your floodgate in place... you need to be registered with the Environment Agency's alarm system. If you're on holiday and away, somebody else has to have a key. All of those things could be put in place by the insurance company, so it's not compulsory, but it's nearly compulsory. You can't get insurance unless you've got these things" (Supp-19).

Finally, it was mentioned that the common business model of the insurance market goes against compulsory insurance. "So the preference in the industry is actually the other way around. Let's try and drive people towards wanting the insurance, rather than having it as a begrudged purchase that they're forced to have, because we feel the behavioural economics is different as well when people are forced to do something compared to when they're encouraged to engage with something" (Ins-20).

8. Conclusion and final remark for the future

Flood risk is one of the main climate risks of the UK. A resilient nation needs resilient households and resilient businesses. This project aims to contribute to the development a flood protection policy framework to increase the resilience of SMEs. This is paramount, since SMEs are the backbone of the economy and the most vulnerable of the business sector.

The research followed a mixed-methods approach in order to improve our understanding of the situation that SMEs face regarding flooding. The analysis is based on quantitative data from 319 surveyed SMEs and qualitative data from 39 semi-structured interviews. The results were validated in a reaction workshop involving 9 stakeholder representatives. This report thus offers insights from businesses, insurers, national and local government officials, academics, charities and organisations that support flooding efforts and/or support SMEs. The findings provide new evidence of the challenges that SMEs have around insurance, as well as the strategies that SMEs employ to manage flooding and the opportunities that can be made available to them to increase their resilience.

We learned that the economic impacts of flooding on SMEs are not well understood. Current economic assessments leave behind the nuances related to the size of the business, which can provide a better perspective of the situation they face. We found that the average economic costs of flooding per SME are around £46,500, ranging from £26,462, on average, for SMEs with 0-4 employees, to £433,018 for businesses with 20 or more employees. We challenged the idea that the bigger the business, the bigger the economic losses, by examining the economic costs relative to the number of employees and turnover. We found that for businesses with 0-4 employees, the economic costs represented 423% more of what they earn in one month, meaning that a firm would need to have had savings of 4 months of its average income to make up for the economic impact of a flood. For businesses with 20 or more employees, on the other hand, the losses are almost equal to their average monthly sales. So, in relative terms, the smaller the business, the bigger the losses. In this sense, we argue that examining the losses relative to turnover and number of employees can better reflect the real size of the impact of flooding on SMEs. We showed that is also helpful to better understand the different type of damages that SMEs experience and the different flood risk management strategies they take. In a similar fashion, it is also useful to assess insurance costs in relation to the average turnover and losses to assess affordability and usefulness of insurance. We found that insurance costs are significant to the smallest SMEs; for instance, for SMEs with 0-4 employees, the average costs of insurance would equal their average monthly sales. There is thus a need to examine the 'relative price' of insurance to have a better understanding of the affordability of insurance to SMEs. Despite the significant cost, when compared with what they can lose with a flood event, having insurance is worth it. Nevertheless, the issue of affordability needs to be addressed, since the majority of businesses that reported not having insurance, either because 'they could not get a quote' or 'the quote was not affordable', pertained to the



smallest SMEs. In addition, the qualitative results indicate that there are affordability problems and the smallest businesses seem to be the most affected.

We also found that there are some overlooked damages when assessing the economic impact of flooding on SMEs. Home-based businesses and businesses that rent their premises experience double impacts, which are often ignored. When home-based businesses, such as a Bed & Breakfast, are flooded, the owners suffer negative economic consequences on their livelihoods and on their personal lives, as they cannot escape the disaster. In the case of businesses that rent their premises, flooding has an economic repercussion on the tenant-SME, as well as on the landlord's income. These and other indirect impacts need to be taken into account, as they add up to the multiplier effect of the damages of flooding on SMEs and wider towns.

The flood impacts on SMEs can have significant impacts on local economies in the short- to long-terms. If SMEs move away from flood risk areas, this could trigger a downward-spiral effect that can erode the characters of towns and the wellbeing of their inhabitants. There is a need to open up spaces and start more profound discussions in order to elicit opportunities to reinvent areas at flood risk. If the objective is to make areas at flood risk climate-resilient and vibrant, then efforts need to be directed now to start building that future. On the contrary, if the objective is to stop people living in flood plains, and encourage SMEs to move away, then there are hard conversations and decisions that need to happen today among the national and local governments, including the people living in flood risk areas.

It is important to recognise that there is a need for a cultural shift towards transferring ownership of situations and giving responsibilities to communities. There is a need for a common understanding that, while the government does have a role to play in managing flood risks, every member of the community needs to protect her/himself, and that the government can enable those processes. The government should have a more coherent message and, instead of just providing grants to recover, which might create a moral hazard, money should be made available to build resilience. There are examples of businesses and communities coming together to cope with a flooding event and to prevent future impacts. However, self-organisation only happens when there is a strong sense of community, trust, and the social-business networks are already developed. Not all communities at flood risk have the capacities to do it, but the government can help to build their capacities, so they protect themselves. There is a need to enable spaces where businesses can come together to share experiences. There is also the need to help business-community-led initiatives to embed flood resilience as a priority. In this regard, the report touches on several other factors that could help to build capacities in SMEs to these can become resilient.

There is still uncertainty about whether insurance affordability and accessibility are a widespread problem for SMEs. Results leave no doubt that there are areas of the country where SMEs are having affordability and accessibility problems. Although the numbers seem small (c. 75,000) in comparison to all the existing SMEs, this number becomes significant in towns at flood risk. In this sense, it is useful to see this issue in relative terms. For instance, in 2016, around 1,600 businesses were impacted in Calderdale. That number is small if we consider the amount of SMEs in the country. However, to Calderdale, it represented 20% of its entire business sector. The economic costs amounted to £47 million pounds, while the wider costs to the regional economy increased to £170 million pounds. In this sense, the negative

repercussions of this “small” number of SMEs were quite significant for the region. If the problem is localised, then efforts need to be focused on those areas.

The research shows that there is a market failure in terms of imperfect information that insurers have on the economic costs of flooding on SMEs, and this is preventing flood protection of SMEs. Despite efforts made, insurers still do not understand the risk that SMEs represent to them, given that SMEs are very diverse and difficult to commoditise. Uncertainty represents high risk, which is reflected in the prices. Is the insurance market working to increase resilience on SMEs? Probably not. Results show that the industry is trying to work with SMEs in high risk areas designing products and strategies, such as parametric insurance or re-insuring the excess. These have helped the industry to manage its risk exposure and offer in some cases better prices. Nonetheless, there are still questions regarding the affordability of those schemes and whether they work just for a few SMEs. More needs to be done, in this sense, to understand the risks and the specific needs of SMEs to be able to offer suitable products and increase the uptake of flood insurance. As the quantitative results show, SMEs economic costs are significant and having insurance makes sense. However, SMEs need to do their part to be protected, and insurance should not be taken as the first line of defence, but rather as a measure of last resort. Insurance could also be a driver for self-protection if it is tied to the take-up of resilient measures, like the updated Flood Re (Flood Re, 2019), and this is reflected in the price or conditions of insurance. SMEs not only would appreciate being recognised for their self-protection, but would also be encouraged to adopt property resilience measures. Nonetheless, this demands a better understanding of the economic costs of flooding on SMEs, as well as of the effectiveness of resilience measures that can be put in place and the implementation of related standards and accreditation schemes.

There is a genuine need to offer better and affordable insurance products to SMEs in flood-risk areas. Should Flood Re be extended to SMEs? No, this would not be easy or even desirable, as Flood Re was designed for households. The report details the major barriers to extend Flood Re to SMEs, including political, commercial, social, and technical factors. However, ensuring the affordability and accessibility of insurance is particularly important in flood risk areas. For instance, an SME wanting a loan to buy machinery will be required to have flood insurance. If lending processes depend on having in place flood insurance, lenders could also incentivise protection. Thus, encouraging the take-up of insurance could make SMEs more resilient, while unlocking growth and investments in flood risk areas.

Creating a new Flood Re scheme that enables and prepares SMEs for a future of affordable insurance, where the government and the UK insurance industry join efforts to support and incentivise community resilience might not be the answer to all SMEs, if the political will and the industry appetite are not there. Explorations could be made perhaps, to include some type of SMEs, such as home-based businesses, the smallest SMEs and landlords. Either way, a unified flood risk management framework for SMEs is urgently needed. This report offers valuable analysis and insights that can inform the development of this framework, and the various findings contribute to advance the discussion. Encouraging the creation of resilient SMEs is a worthy effort as the economic impacts they experience have ripple effects across local and regional economies. Moreover, climate change threatens to exacerbate those effects. More needs to be done to increase the resilience of this vital actor, which not only drives employment and growth, but also constitutes an essential fabric of our communities.

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Annex A

Schemes that SMEs can access to recover and protect from flooding

| SCHEME | DESCRIPTION | HOW |
|--|--|---|
| Business Rate Flooding Relief Department For Communities And Local Government | A scheme administered by local authorities through the use of a criteria for 100% relief for 3 months. Government reimburses local authorities that use their discretion on the payment appropriate payment for individual businesses. | Businesses that are eligible for funding apply to their local authorities. An estimated £10 million was allocated to local authorities to assist affected businesses with funding for immediate clean-up costs, materials, and exceptional costs (such as hiring of drying equipment) and temporary accommodation. |
| Repair and Relief [Defra] | Grant available to homeowners and businesses introduced by Government to support homes & businesses affected by the recent winter flooding (between 1st December 2013 & 31st March 2014) Administered by local authorities | A grant up to £5000, intended to fund measures that enhance the resilience or resistance of a property that would not be covered by insurance. Homes and businesses benefitting from community-level schemes or property level protection scheme to reduce their flood risk will not be eligible for this funding unless the scheme funding is less than £5000. |
| Business Support Scheme (Business Hardship Fund) | A scheme to support all small and medium sized business in flood affected by flooding in 1st April 2013 and 30th November 2013, suffering significant loss of trade as a result. On 27th November 2014 the period of eligibility for the scheme was extended to cover the period from April – December 2013. Local authorities will decide on a case-by-case basis who they wish to give support to, within the parameters set out in this guidance document | |
| Communities And Business Recovery Scheme | local authorities with funding worth over £2,500 for every business flooded from the government | Councils in Cumbria, Lancashire, Northumberland, North Yorkshire and Herefordshire have received £10.5 million payment from the Community and Business Recovery Scheme to support affected communities in those areas. |
| Flood Save- Calderdale | Flood Save is a match funded savings scheme for business and homes not covered by the FloodRE scheme in Calderdale. | The Community Foundation for Calderdale have invested £500,000 from the flood fund, in the event of a flood this money will be used match fund *100% of savings made by members |

| SCHEME | DESCRIPTION | HOW |
|---|---|--|
| | | You will pay regularly into your Flood Save account with cash or monthly standing orders of £10, £25 or a maximum of £150 (savings will be covered by the Financial Services Compensation Scheme). We will match fund up to £2,000. |
| Big Lottery Fund- Cumbria | A £1 million package to help Cumbrian communities become more resilient, helps local people, communities and organisations to prepare for similar events in the future. | |
| Community Flood Improvement Fund Grant- Essex | Funded by Essex County Council to protect homes and businesses in Essex (excluding Southend and Thurrock) against flooding. It is part of the Council's five-year Flood Prevention Capital Programme. | Householders and small business owners affected by Storms Desmond and Storm Eva should contact their local authority about accessing the grant. Reduce flood risk to properties or businesses in their area. Projects to protect homes are given priority. |
| Flood And Coastal Resilience Partner Funding | Forms part of Environment Agency's overall capital allocation to grant fund flood and coastal erosion risk management projects in the 2012/13, 2013/14 and 2014/15 financial years. | All projects supported by partnership funding will need to meet the criteria set out here, and as a minimum in every case |
| Business Emergency Resilience Group (Berg) Property Level Resilience Grant | Flood Resilience Grants of up to £5000 are available to property owners Business Emergency Resilience Group (BERG) has been working with the UK Government to develop the mechanism for accessing the Property Level Resilience Grants. [Flood Resilience Grant (up to £5,000 for improvements to a property's resilience to future flood damage over and above repairs that take place as part of an insurance claim).] | Local authorities are running the UK Flood Assistance Scheme |
| Community Recovery Scheme: Pathfinder Project | DEFRA set up 13 projects to explore innovative community resilience to flooding. The project took place from 2013 to March 2015 and was allocated £5 million over 2 year. From across England, 45 applications were received, and projects submitted by 13 local authorities (referred to collectively as 'pathfinder projects') received funding | |
| Reports On Pathfinder From National Flood Forum Website: | | |
| Buckinghamshire: | Work package 1 of the Buckinghamshire flood resilience | Through the use of the Chesham Flood Smart initiative, |

| SCHEME | DESCRIPTION | HOW |
|-------------------------|---|---|
| Calderdale: | <p>project aimed to raise awareness on flood risk to residents, schools and businesses</p> <p>Calderdale undertook a study and provided recommendations from their Pathfinder project</p> | <p>two presentations were conducted to the Chiltern Chamber and an event held targeted at businesses in October 2014</p> <p>14 impact pathways based on information from respondent businesses, mapped what losses and gains were experienced, their values and their reach.</p> |
| Cornwall | <p>Approximately 160 households and businesses were supported, with the local Flood Group (Angarrack) and the Community Council (Polperro) identifying the specific properties at risk of flooding, using their local knowledge to augment the published flood maps</p> | <p>Training workshops that business proprietors deemed necessary to become more resilient and promote the 'business as usual' message as soon as normality returned</p> |
| Devon | <p>The Devon Flood Resilience Community Pathfinder Report (2015) organized a flood recovery surgery session which was aimed at providing the opportunity for homeowners and businesses to share their story ask questions and find information to support their recovery.</p> | <p>The case study they use to highlight successful business flood resilience is from property level flood protection and not financial.</p> |
| Northamptonshire | <p>The Business advice toolkit stresses the needs for business continuity plans and provides support and training for the development of the plan.</p> <p>110 businesses approached/contacted through community hub and awareness raising actions</p> | <p>They use the ABI small business guidance document as part of their business toolkit; insurance is highlighted as a key resilience mechanism.</p> <p>Raising awareness through flood resilience packs. Key lesson from engagement with businesses mentioned in report "<i>Business can be very hard to engage with</i></p> <p>Several flood fairs to enable people to understand their risk. Swindon also conducted flood</p> |

| SCHEME | DESCRIPTION | HOW |
|---|--|---|
| Rochdale | The aim of the Liverpool pathfinder was to establishment physical and non-physical infrastructure to support the governance and management of flooding in the Woodlands Estate- no specific mention of business resilience support | scenarios and response, but it was more aimed at young people. Business contingency plan and install property level protection |
| Liverpool | Swindon video gives guidance for how to prepare and suggests buildings and contents insurance for homes/businesses. | |
| Swindon | 9 Flood action were established to determine the risk of flooding and enhance positive engagement with authorities. Action plan and recommendations to enable better uptake of resilience measure for properties at high risk of flooding | Tangible actions and recommendations |
| Warwickshire | Flood guidance material and resources | |
| The Property Flood Resilience Action Plan Defra https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf | Flood guidance advice and material | Showcase, videos etc. |
| Flood Guidance – Output Of Property Flood Resilience Action Plan http://www.floodguidance.co.uk/ Know Your Flood Risk- http://www.knowyourfloodrisk.co.uk/ | Real life installations of flood resilience measures | |

| SCHEME | DESCRIPTION | HOW |
|---|-------------|-----|
| <p>Cumbria Flood Resilience Showcase Project – Task Group 1 Of Flood Resilience Action Plan – Community Innovation</p> <p>https://www.bitc.org.uk/media-centre/blogs/cumbria-resilient-showcase-community-innovation-project-defra-roundtable</p> | | |

Annex B

Issues that SMEs reported regarding insurance

| Affordability | | | |
|---------------|---|-----|--|
| 52 | The shop has never flooded in 50 years of business. As a new business owner, we did not want to claim as this would have put our premiums up to an unaffordable level like many already in Hebden Bridge | 178 | Excess too high to make claim |
| 53 | costs so high not worth entering into any insurance contract. | 179 | Excess is 2,500, so we try not claim, they will increase premium next time |
| 54 | We have been here 25 years and never claimed for flood damage - premiums increase every year - why didn't they come down - they have used the 2015 floods as an excuse/reason to increase premiums considerably | 197 | My workspace and tools and machinery were uninsured as being right next to the river would make insurance too high along with product and public liability insurance |
| 60 | The excess is high and future insurance for flood is not available | 215 | My excess was very high, but I have no choice but to claim |
| 70 | Premiums are so high, we don't have insurance plus the excess is ridiculous so when you weigh up the loss and the premiums, it's cheaper not to have insurance. | 225 | Have recently found out we are covered but will not be after this event due to insurance going up. |
| 72 | I am insured for flood damage, but the excess is £2500, so not worth claiming. | 228 | We re-opened quite early, but then have had to close several times since for repairs. I personally have had my own salon takings massively affected for planning and coordinating building work. Not covered for this on insurance. My excess was too high to be able to submit a claim as verifying costs and losses is also an issue when trying to calculate losses |
| 74 | I have 10 properties I let out in Todmorden. Insurance is difficult to obtain and expensive with some properties not covered for flooding. My business is not tenable anymore as I cannot insure against flood risk | 281 | Initially after 2012 we were given a quote with a premium double the normal value and an excess in the region of £10000, it was not affordable, and the excess made it unviable. The next time. that is for the following year's insurance we couldn't get a quote to include cover for flood. |
| 94 | High excess and long delays until on account payment received. without private funds business would have closed | 286 | Premium and excess increased. |

Affordability

| | | | |
|-----|---|-----|--|
| 100 | We have been trading at this address for 19 years and this is the first time we were flooded. We don't know if we will get insurance again because of the cost. If we can't get insurance, we don't know if we will be able to continue trading. | 290 | big increase in premiums |
| 105 | After the 2012 Flood the extra premium for Stock was so high and also a bigger excess was sought, and it became unrealistic. | 292 | Our quoted excess is the same as the value to be insured |
| 113 | The excess quoted at £2500 | 299 | We now have a £250,000 excess...until some works are carried out - works which we have been told we can't carry out as they have no ability to prove the works will be worthwhile. catch 22... |
| 125 | although we were able to pay the excess this was simply reduced from the amount that our insurers paid us. The excess was £2500 and if the pay-out had not been more than this, we knew we would have to get a loan from some of our members. As a small community group, we simply do not have that amount of money available for such situations. | 300 | Of 25 clients I helped, only 2 got no insurance help. I declared floods "an act of God/ no help at all. Other site had previous floods so no cover available at a realistic price - so self-insured. |
| 128 | the excess was so high and the interruption of the works needed meant we had to repair things ourselves over a longer period of time, after that we didn't bother to insure against flood as it was cost prohibitive and the works after would have meant gutting the place which would mean we have to cease trading completely, we simply can't do that | 302 | Flood Re: says that guest houses will qualify for the scheme as long as they are wholly council taxed, our personal experience is that this isn't the case. We have been told by several insurance companies, including direct line that they will not provide Flood Re: scheme cover because our property is too large. We have had to continue with our current provider who has increased the excess from £2500 before the floods to £10,000 post flood. The annual premium has also doubled to £3000. I would be interested to know how this can be improved as I feel, reading the Flood RE: guidance that we should qualify. I would also be interested to know if other guest houses have the same issues. It is very stressful, and we feel left out and let down. |
| 133 | It is not the quote that is the issue it is the excess. 25000 means that insure ace is not worth anything | 312 | Loss from theft has increased premiums and payment was disputed |
| 177 | can't afford it | | |

| Access/Availability | | | |
|---------------------|---|-----|---|
| 4 | We are very concerned that we won't get insurance again | 152 | Insurance company flat out refused to cover flood damage. |
| 9 | Initially denied claim as box ticked saying we were more than 250m from river or canal, auto generated statement of fact | 157 | It's required but I can't get it |
| 11 | as the business has previously flooded It isn't worthwhile to pay the high premiums for flooding, if I was able to get a quote at all. | 170 | Inability to get insurance devalues my business and will close my business if my premises is affected again |
| 12 | I think its disgusting that in this day and age you can't get insurance on a property because it's in a flood zone - I paid extra because it's in a flood zone and still floods are not covered | 191 | We can't get flood insurance since the boxing day floods. |
| 21 | I have been informed that going forward we may not be able to get flood insurance. If this is the case, then this may seriously jeopardise our ability to continue in business at our Brighthouse site. | 192 | I was in an old building right next to the river, we were building up to being able to afford the insurance which we had been told by the previous tenant and neighbouring tenants that it was near enough impossible to get insurance the with the overall conditions. We were replacing windows and working our way up to it. |
| 24 | Not possible to insure against closure of canal (our premises undamaged) | 220 | I think it is deeply unfair that even though our business was not flooded, I.E water did not enter the property apart from a small amount in the cellar, and we have been told by our landladies did not flooded in 2012, our postcode is black listed. |
| 31 | the only way I got insurance was through the brewery who own the building. As an independent business owner, I could not get insurance | 221 | Can't get insurance against floor |
| 38 | even though we didn't claim after 2012 floods, every insurance policy we have had since, has automatically excluded flood cover. | 237 | Insurance companies will not provide flood cover, I feel this should change as that is what you pay premiums for - damage or loss in any form |
| 40 | After the 2012 floods it was impossible to get cover. | 254 | since 2012 flood (when we didn't even claim) every insurance policy since has automatically excluded flood cover. |
| 41 | Previous flood risk area. Quote unavailable. | 259 | possibly won't be able to get insurance next year |
| 43 | Found it impossible to get quotes from providers. They wouldn't even quote with flood damage excluded, they just outright said they wouldn't insure anything at all under any circumstances. | 261 | As we are on a level 3 designated flood plain, we cannot get a quote for flooding insurance |

| Access/Availability | | | |
|---------------------|---|-----|--|
| 44 | underwriters refused to consider | 269 | Insurers will not cover the business for flood from 1st Feb 2016 renewal |
| 59 | Cannot get flood insurance at flooded premises and have moved my business to nearby premises that have never flooded and still cannot get flood insurance | 277 | £3,000,000. claim in 4 years. it is understandable that no one will insure us. |
| 60 | The excess is high and future insurance for flood is not available | 280 | It is impossible to get flood insurance in this area. I tried many brokers and it was not a case of high premium but NO COVER available |
| 61 | No one willing to cover | 281 | Initially after 2012 we were given a quote with a premium double the normal value and an excess in the region of £10000, it was not affordable, and the excess made it unviable. The next time. that is for the following year's insurance we couldn't get a quote to include cover for flood. |
| 69 | Struggling to get new insurance | 284 | As we do not fit any of the criteria, we cannot get insurance for the contents, only for the bikes |
| 74 | I have 10 properties I let out in Todmorden. Insurance is difficult to obtain and expensive with some properties not covered for flooding. My business is not tenable anymore as I cannot I insure against flood risk | 285 | Refused insurance because of the perceived flood risk. |
| 78 | the inability to obtain contents insurance will affect our decision to remain here as a business | 287 | We cannot get flood insurance for most of our business, one element has flood cover but with a very high excess |
| 81 | Some of our customers cannot get insurance which is of concern should there be another flood. | 293 | Difficult to acquire insurance after second event |
| 96 | We may struggle to get future insurance. In 2012 we luckily did not get flooded so did not have to make an insurance claim | 303 | Building insurance is through the landlord. |
| 102 | We cannot get insurance against flooding. | 308 | No longer insured for flooding after 3 events |
| 108 | We are in a postcode at risk from flooding and therefore nobody wants to insure us. | 310 | They will not insure the property for flooding as it is on the Lake side |
| 117 | No flood cover can be obtained on my premises as insurance companies see it as too high a risk. | 313 | Extremely difficult to obtain insurance after two separate catastrophic flooding incidents in 10 years. Given level of cover required, mainstream insurers very reluctant to offer cover. |

Access/Availability

| | | | |
|-----|--|-----|--|
| 132 | Said loads already!! I'm an insurance broker but because our insurer was one of those who excluded cover after the 2012 floods, we couldn't access feasible office contents cover - even as a broker (despite ABI and Flood Re all saying - businesses don't need to be included in Flood Re - because they can go to a broker for cover - ironic? [...]) now in Calderdale we are launching our own solution called Flood Save. This is a new scheme under which businesses can save a regular monthly amount and in the event of a flood the scheme hopes to match fund the savings - this pledge is working with the Calderdale Community Foundation and hopefully central govt and PLC backers | 315 | I can't get any sensible insurance after my flood. |
| 146 | Concerns regarding this year's renewal and availability of flood cover. | | |

| Problems with the insurance policies | | Decision not to claim | |
|--------------------------------------|--|-----------------------|--|
| 6 | I should be covered for at least business interruption, found out because it was flood related. The exclusions were directed at everything, we had paid a very high insurance sum for! 500 quid a year paid, nothing in return! I will not be bothering with insurance ever again, had I simply put the monies aside that I'd paid for the past 25 years into my own pot, I would have managed to pull myself out of both incidents and still had cash in the bank, now we are left to fend for ourselves, it's not bloody acceptable! | 1 | Due to position attempt at a quote was not worth the effort |
| 23 | The buildings insurance is taking so long to come back to me, they sent a surveyor out 9 weeks after the floods to "assess the damage"! They are the reason why I am not up and running right now. My contents insurance ran out in Feb 2016, I had to try and find a new policy. Nobody but 1 insurance company, (the same one from the previous year) would insure me. They tripled my premium and will not insure me for flooding for 1 year. That really has to change | 6 | No spare money, simpler to take the risk of occasional damage. |
| 26 | To date we have received an interim payment of £40,000 but we do not know when the outstanding claim will be settled | 7 | I am insured for flood damage, but the excess is £2500, so not worth claiming. |

| Problems with the insurance policies | Decision not to claim |
|--|--|
| <p>45 We have our own insurance with a company called Quilter and Randall Holdings (Based in Bermuda we found out). They sent out a loss adjuster around a week after the flood. He said that we should receive an interim payment within a couple of weeks and advised us to throw out the bar and damaged fridges as well as infected beer casks and bottles. We had to pursue the loss adjuster and the broker [...] for weeks as we had received no reply or money from them. Eight weeks after the flood we received an email informing us that they were "Of a mind to void our insurance due to a misrepresentation of the facts". They stated that I had misled them when I took out the policy by stating that Hebden Bridge was not in a flood zone (Untrue) and that they found that I had a county court judgement in 2000 and did not declare it with them. It is true that I had a CCJ but it was all paid up and the judgement is spent after 6 years (2006) therefore I wouldn't have to declare it anyway and I don't remember the question being asked as it was April 2015 when I took out the policy and it was done over the phone. We have disputed their quest to void our claim and have asked for it to be reviewed and go through their complaint's procedure. In the two weeks since this request we have had to chase the complaint and the process has not officially started yet. [...]. We are at a financially critical point as we still have loans and other payments going out of the business account as well as facing a 5k excess from the landlord's insurers. We hope to be ready to open by May, but we will have no income to set up the pub or buy stock if we receive no insurance money.</p> | <p>8 We have not claimed as it was not 4 enough loss to make it worthwhile and the loss is hard to precisely quantify</p> |
| <p>85 The insurers are not paying out for the replacement of everything we have lost.</p> | <p>1 No claim made as policy is a joint 4 policy and any claim on this property 5 would affect the Group Policy</p> |
| <p>119 my business interruption insurance is not worth the paper it's written on. it does not cover the canal being closed.</p> | <p>1 We did not claim because we do not 7 want to have future fee increases. Also 4 can do without interference.</p> |
| <p>130 We changed Insurers since 2012. Previous ones worked on how close we were to a river not how high above the river we were.</p> | <p>1 Excess is 2,500, so we try not claim, they 7 will increase premium next time 9</p> |
| <p>167 My current insurance company won't now increase the level of cover due to being flooded they have not put a clause on it so I can only claim the minimum if flooding was to happen again at my premises</p> | <p>2 No claim made as motor trade and 7 liability could be affected in the future 1 and this is very important to have</p> |
| <p>181 We have insurance but were under insured as we are an arts org with an archive that is difficult to insure. We had to throw away some of our 40-year archive of photos, objects, sculptures, media and documentation.</p> | |
| <p>281 If flood cover was removed them would not be able to say in same premises and flood cover a necessity</p> | |
| <p>288 The insurer refused to accept our figures for loss in sales despite us having very detailed, robust and qualifiable figures. This resulted in a loss of approximately £10,000 to the business when the claim was eventually settled over 18 months later.</p> | <p>Resilience measures not included</p> |
| <p>289 Wouldn't pay out for ALL damages saying I was under insured</p> | <p>1 Unhappy that nobody is willing to insure 4 us for flooding, after we had installed 1 flood boards and air brick covers.</p> |

| Problems with the insurance policies | | Decision not to claim |
|--------------------------------------|--|-----------------------|
| 291 | Loss of business insurance is ineffective. It only covered 50% of the loss in revenue. | |
| 297 | we have not one bit of page to say what the insurance has paid out on or not paid... | |
| 299 | We now have a £250,000 excess...until some works are carried out - works which we have been told we can't carry out as they have no ability to prove the works will be worthwhile. catch 22... | |

Annex C

Participating Organisations

- Aquobex/Oxford Brookes Uni
- Association of British Insurers
- Aviva
- BIBA
- BITC
- BRE (BREEAM – BRE Environmental Assessment Method)
- British Damage Management Association (BDMA)
- British Property Federation
- Cambridgeshire County Council
- Carlisle City Council
- Centre for Disaster Resilience (CDR)
- Cities & Local Growth Unit
- Cumbria Chamber of Commerce
- Cumbria County Council
- Defra
- Environment Agency
- Floodflash Ltd.
- FSB- Federation of Small Businesses
- Hull City Council
- Kendal Futures
- Kingston University
- Leasehold Knowledge Partnership Limited
- Leeds Open source arts
- Lindsey Cunningham
- National Flood Forum
- NELEP
- Newground social enterprise
- Northamptonshire County Council
- Rochdale Borough Council
- South Lakeland District Council
- University of Salford
- University of West England
- Upper Calder Valley Renaissance
- York City Council

Annex D

Flood Re eligibility



For the attention of Compliance Officers / Head of UK Property (residential)

July 2017

Dear Compliance Officer / Head of Property

Flood Re Scheme eligibility

Over the course of the first year of Flood Re's operations, we have received a large number of requests for clarification from both industry participants and from members of the public relating to the eligibility of properties and policies for the Flood Re Scheme. We have answered those queries on a case by case basis, but in the interests of sharing those responses more broadly, we have collated our answers into the attached guidance note to assist industry's better understanding of the Flood Re eligibility criteria.

As insurers and brokers will be aware, the primary eligibility criteria for policies and key definitions are set out in the Flood Re Scheme Document, appended to the Flood Reinsurance (Scheme and Scheme Administrator Designation) Regulations 2015. More detailed eligibility criteria can be found in Schedule 2 of the Excess of Loss Reinsurance Treaty, being the "Underwriting Guide", which sets out the required terms and conditions of policies being ceded to the Scheme. We hope that the attached guidance note provides a further level of detail and we would be grateful if you could please circulate this guidance to relevant individuals within your company, in both underwriting and claims functions.

We have updated our website FAQs / Eligibility pages too, but should you have any questions on the note itself, please do not hesitate to contact us. Furthermore, a number of industry participants have taken the opportunity to invite Flood Re to run bespoke training sessions for underwriters and claims handlers and we are very happy to offer these. In the meanwhile, we would encourage you to continue to contact us with new queries via our email: servicedesk@floodre-operations.co.uk.

Yours faithfully

Flood Re

Flood Re Limited, 75 King William Street, London EC4N 7BE
Flood Re Limited is registered in England and Wales (08570444). Flood Re is authorised by the Prudential Regulation Authority and regulated by the Prudential Regulation Authority and Financial Conduct Authority (FRN 706046)

Further Eligibility Guidance**1. Will Flood Re reinsure leasehold properties?**

Yes. Leasehold properties are eligible for the Scheme if they:

(1) fulfill the definition of a “Dwelling”;

(2) the leaseholder has an obligation in their lease to insure the structure of the Dwelling; and

(3) all other eligibility requirements are met.

Under English law, it is unusual for short-term leaseholders to have this obligation as it usually remains with the freeholder. It is more typical of longer term leases (e.g. 999 year leaseholders) where the rights and obligations are akin to a freehold interest. Insurers should ensure that they have in place appropriate controls to check that leasehold properties being ceded to the Scheme meet this requirement.

2. Are flats eligible for the Scheme?

Yes. It is possible for an individual flat to meet the definition of a “Dwelling” (being part of a building and a single residential unit).

Where a flat is owned on a leasehold basis and the leaseholder has the obligation to insure the structure of the flat itself (see number 1 above), and the insurance policy meets all other eligibility criteria, it is possible to cede it to the Scheme. Again, under English law, it is very unusual for leasehold flat owners to have the necessary rights or obligations to insure the structure of their individual flat so Insurers should specifically check this before ceding flats to the Scheme.

For the avoidance of doubt, a block of flats together would not meet the definition of a “Dwelling”.

3. Will Flood Re reinsure properties that were built in 2008 but didn't receive a Council Tax Band until 2009?

Only properties that were built, as evidenced by the Council Tax Register, prior to January 2009 are eligible for the Scheme. However, Flood Re is aware of certain instances where a build had been completed in 2008 and the dwelling was used as residential premises, but a Council Tax Band was not

issued until 2009 due to a delay in administrative proceedings. In such cases, Flood Re will accept these premises provided that the owner can show to Flood Re's satisfaction that they lived in the premises, using them as their home, prior to January 2009. This can be evidenced, for example, through furnishing a utility bill.

Note that this exception does not apply to properties that were built and used as commercial premises and only converted to residential dwellings after January 2009.

4. Will Flood Re accept properties where the build was started pre-January 2009 but was not completed until after that date?

No. Flood Re will only reinsure properties where the build was completed prior to January 2009.

5. Would the structure and contents of an extension which is in the process of being built (but not yet completed) be covered by the Scheme in case of damage caused by flooding?

Yes. The structure of such an extension would be covered as it would form part of the already existing "Dwelling". The contents of such an extension would only be covered if they fulfill the definition of "Contents" in the home insurance policy. For the avoidance of doubt, we would not expect professional trade tools and materials to meet the definition of "Contents".

6. If Household Premises made up of two or three flats are insured in the name of a management company, could this still be eligible for the Scheme?

The Scheme Document states that the insurance policy has to be either in the name of an individual or individuals, or held on trust for that individual or individuals. Therefore, it is possible for a management company to obtain insurance on trust for the owners of the two or three separate flats within the Household Premises, so long as this is structured as a true legal trust.

7. For how long or how often does a policy holder or their immediate family need to live in a property for it to be eligible for the Scheme?

The eligibility criteria include the requirement for the policyholder or an immediate family member to live in the property for “some or all of the time” during the policy period. A number of participants have asked that Flood Re better specifies what amounts to “some of the time”. Rather than specifying a numerical value for “some of the time”, we would draw your attention to the fact that the requirement for a homeowner to live in the insured property for “some or all of the time” is just one of the eligibility criteria. As a fundamental starting point, the policy being ceded to Flood Re must still meet the basic definition of a “Home Insurance Policy” as defined in the Scheme documents and should not be on different terms to an insurer’s standard home insurance policy.

By way of example only, Flood Re would not expect to be ceded a home insurance policy relating to a property which had a tenancy agreement in place for all or part of the policy period because a policy designed to meet the needs of a landlord’s risks would not normally feature in a standard home insurance policy. Furthermore, we would not normally expect any given insured to have more than one home insurance policy in place.

Insureds may occasionally rent out their entire home or part of it for short periods, such as a few days or weeks in accordance with the terms of their Home Insurance Policy and those properties can be ceded subject to meeting all other requirements.

Flood Re requires insurers to meet all of the eligibility requirements, in good faith. The Scheme is designed to assist homeowners most at risk of flooding, not businesses or properties being rented out for commercial gain. Flood Re’s own reinsurance is based on the same eligibility criteria so it is important that only eligible risks are ceded to us.

8. Can a second building (shed, outbuilding...etc) at the same risk address as the main home be included under the same home insurance policy?

Yes. Outbuildings “enjoyed with” the primary residence can be ceded under a single home insurance policy provided that they do not have a separate Council Tax Band and do not attract business rates. There is no upper limit to the number of additional buildings on that basis. Outbuildings do not need to meet the pre-2009 build date requirement.

9. Can mixed-use premises be ceded into the Scheme?

Yes. Dwellings which form part of a single mixed-use property can be eligible for Buildings/Combined cover if the Dwelling has its own Council Tax Band and does not attract business rates. Examples include B&Bs and homes where incidental business activity takes place. However, Flood Re can only accept policies that fulfil the definition of a "Home Insurance Policy", where such policies are not being treated differently to non-Flood Re ceded policies.

If insurers are seeking to cover a home as part of a wider insurance policy, for example, a farmhouse under an existing farm policy, Flood Re expects a designated premium to relate to the Dwelling element and for the policy to meet the other eligibility criteria, including being in the name of an individual.

For the avoidance of doubt, Flood Re will only cover contents and fixtures and fittings that relate to the residential part of any mixed use premises. We would not expect appliances and trade tools used solely for business purposes (such as dog grooming appliances or hairdressing tools) to be covered by Flood Re's definition of "Contents".

10. Will Flood Re cover claims for resilient repair?

No. In line with its Transition Plan, Flood Re is currently carrying out research into the relative value and effectiveness of resilience measures and will report separately on its findings in due course. In the meanwhile, in accordance with the terms of the Treaty, Flood Re will not indemnify insurers for resilient repair. The definitions of "Loss" and "Flood Risk Element" currently preclude claims payments covering betterment for the purpose of potential resilient repair. Therefore, Flood Re will only indemnify insurers for the cost of like for like repairs and will not follow the fortunes of underlying policies even if they allow for betterment as a standard term. Any payments made to an insured above the cost of like for like repairs will be borne by the insurer. For the avoidance of doubt, where building work has to be completed to a higher standard due to a change in laws or regulations, then such build difference will not be considered "betterment", provided it is the insurer's normal practice to indemnify such cost within a New-for-old cover.

11. Will Flood Re cover contents that are located away from the insured property?

No. Flood Re will only reimburse insurers for damage done to contents located in the Dwelling affected by the flood in question. This is because the definition of "Contents" relates to the "Dwelling" in which they are located and the purpose of the Scheme is to help protect homes at risk of flooding and their contents.

Annex E

Workshop

Building a framework for flood risk management for SMEs

*Monday 16th April, 2018
11AM-4PM
Seminar Room 8.119a, School of Earth and Environment
University of Leeds, LS2 9JT*

Objective

To improve our understanding of flood risk management of SMEs. Which risk management strategies (financial and practical) SMEs employ at the moment to manage the impacts of flooding, and which other opportunities might be available to them.

Agenda

| | |
|----------|---|
| 11.00 AM | Registration and refreshments |
| 11.15 AM | Introductions |
| 11.30 AM | Presentation of results |
| 12.30 PM | Lunch |
| 1.15 PM | Group discussion on: Where are we now in relation to flood risk management including insurance for exposed SMEs? |
| 1.45PM | What do we want to achieve in the future regarding flood risk management for SMEs? |
| 2.25 PM | Break |
| 2.40 PM | How do we achieve that future? What things need to change now? |
| 3.10 PM | Shall we help the private sector (SMEs)? |
| 3.40 PM | Feedback |
| 4.00 PM | Close |

Introduction

After a brief presentation about the most recent research findings about SMEs flood risk management, participants were asked to discuss in groups four main themes presented below. The aim of these discussions was to generally improve the understanding of SMEs flood risk management. More specifically, these would help outline the current risk management strategies employed by SMEs and the current opportunities offered to them to mitigate against the impacts of flooding.

Current situation

The first part of the workshop focussed on identifying the current situation regarding SMEs flood risk management. Participants were asked to discuss the results presented and provide their experience and expertise of SMEs dealing with flood risks and highlight what key issues and aspects of the problem they have come across.

| QS. | TABLE 1 | TABLE 2 |
|---------------------------------------|--|---|
| 1.WHERE ARE WE NOW | Home-based BSS ignored No stats on re-insurance of excess Insurance maps needed Focus on BSS continuity necessary | More data of small BSS Government investment lacking Landlords require standards for flooding (i.e. Energy ratings) BSS networks needed – mentoring helpful |
| 2.WHAT TO ACHIEVE | Changing BSS vs trading again - relocation as option Awareness Landlords Lenders – continuity plan | Ownership – responsibility Affordable insurance (i.e. Flood Re staged approach) Flood data – insurance companies Engagement (i.e. Industries/ elected members) New flood insurance products |
| 3.WHAT NEEDS TO CHANGE | Advice Acceptance vs awareness Recurrent flooding vs perception of risk Flood Re to flood resilience Independent resilient communities | Central point of trust/reference Communication/signposting Plans in place – holistic strategy Different flood risk management models |
| 4.SHALL WE HELP PRIVATE SECTOR | What level of help How to get mgs. across to BSS Market laissez-faire VS support Incentive for BSS to change | Vibrancy of small BSS is key for economy Community initiatives – i.e. Hebden Bridge Messages – incentives for BSS Opportunities to act – BSS continuity plan Nudging |

Power Point used in the Workshop

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www.cceep.ac.uk

Workshop: Size matters (?)

Building a flood risk management framework for SMEs

Dr. Paola Sakai

University of Leeds, School of Earth and Environment
16th April, 2018

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Outline

- Background
- Objective of the research and methods
- Economic losses of SMEs by size >relativity<
- Strategies to reduce flood risk
- Workshop: exploring opportunities to make SMEs resilient to flooding
- Close

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Flooding in the UK

- Main cause of loss damage: 2006-2016 (EM-DAT, 2016)
- 184,000 non-residential properties at high risk (SCORA, 2017)
- Economic costs for businesses: £740 million (2007), £831 million (*12)
- Average annual insurance claims for flood-related damage: £0.6-£1 billion in the coming decades (CCRA, 2012)

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The research

- To improve our understanding of SMEs' flood risk management, and
- To establish if SMEs have flood insurance problems
 - If so, how they could be overcome?
- Which other risk management strategies could be available for SMEs?

Methods

- ✓ Semi-structured interviews: supporting organisations, National and local officials, insurance industry, academics, etc.
- ✓ Survey applied to SMEs

Higher intensity = higher damages

Damage that SMEs experienced as a consequence of 2015 and 2012 floods

| Category | 2015 (%) | 2012 (%) |
|---|----------|----------|
| Water inside premises | 100% | 100% |
| Changes to the firm's reputation | 100% | 100% |
| Damage to premises | 100% | 100% |
| Disruption to the supply chain | 100% | 100% |
| Acting as a nuisance | 100% | 100% |
| Office equipment | 100% | 100% |
| Disruption to communication | 100% | 100% |
| Specialised equipment | 100% | 100% |
| Loss of customers | 100% | 100% |
| Loss of premises | 100% | 100% |
| Energy power disruption | 100% | 100% |
| Disruption to the production/service delivery | 100% | 100% |
| Labour availability | 100% | 100% |
| Building maintenance | 100% | 100% |
| Stock damage | 100% | 100% |
| Access to bank, mortgage, insurance | 100% | 100% |
| Damage to the social finance situation | 100% | 100% |

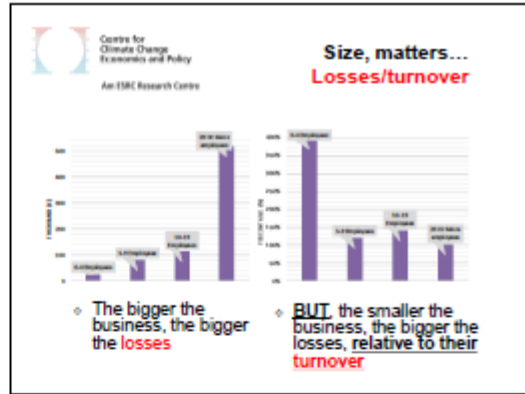
- Average total costs :
 - ◊ £26,000 (2012)
 - ◊ £47,000 (2015)
- Double amount of time to recover sales

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Size, matters... losses

| Number of employees | Average losses in 2015 (Thousands) |
|---------------------|------------------------------------|
| 0-4 | £0.25 |
| 5-9 | £0.67 |
| 10-24 | £0.85 |
| 25 or more | £5.71 |

- The bigger the business, the bigger the losses



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Home-based businesses!



1.5 businesses are home-based businesses (HBBs).
 92.7% HBBs - 0-4 employees
 4.9% HBBs - 5-9 employees
 2.4% HBBs - 10-19 empl.
 0% HBBs - >20 employees

On average, these businesses had losses of £11,343 in the 2015 floods


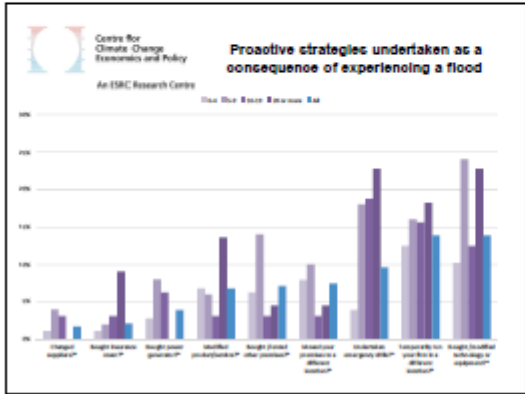
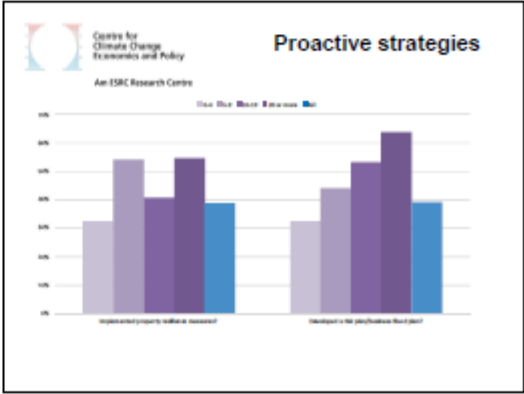
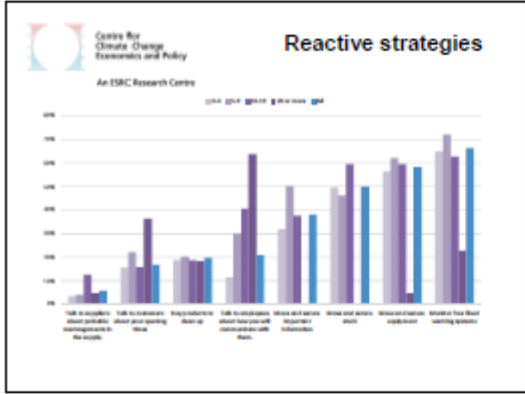
36.6% did not have insurance because either it was not affordable or they could not get a quote.

**Double impact:
Livelihood +
Personal life**

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What small businesses normally do to protect themselves from flooding?

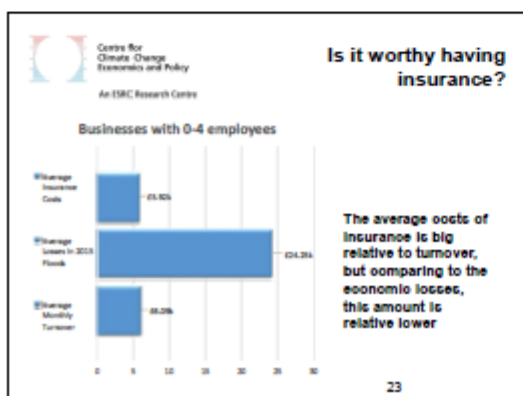
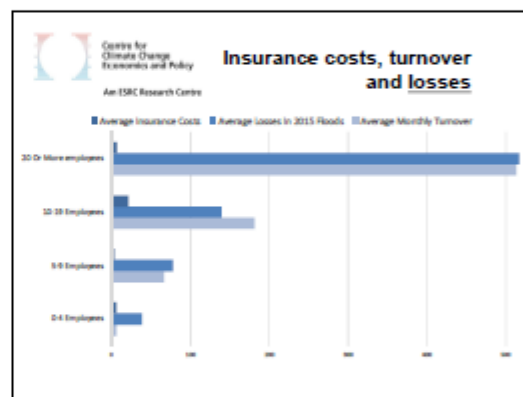
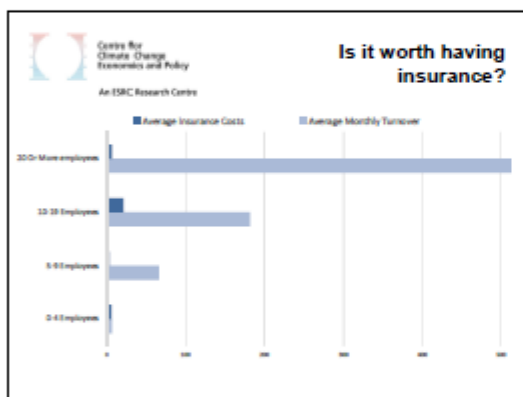
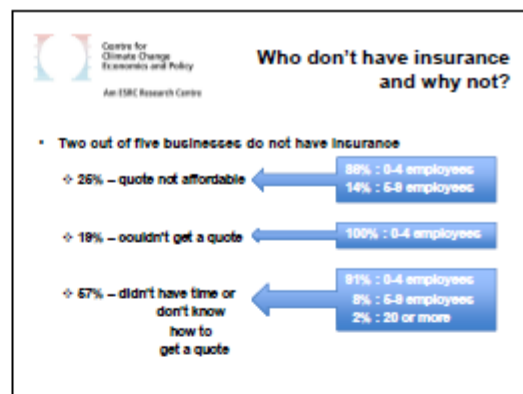
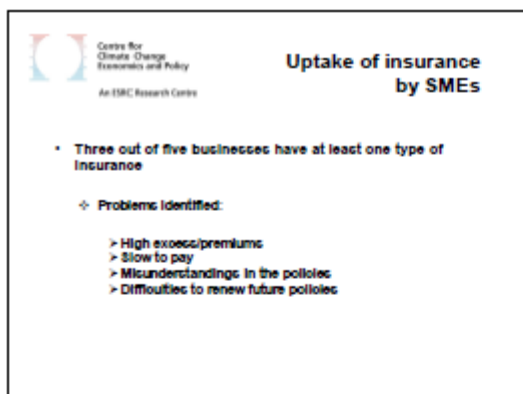



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Other strategies that SMEs have taken to prepare for flooding



- Start setting aside money for the next flood
- Local support schemes
 - Community pooling: 'Flood save'
 - Community promotional campaigns: 'Flood publicity'
 - Setting network hubs
 - Peer-to-peer help
- Seek/receive independent support
- Trying new insurance instruments
 - Re-insuring excesses,
 - Resilience small flood & insurance big floods



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Another risk management strategy that SMEs can take is to relocate to another town

◊ What would be the implications?

- Employment will be impacted
- Communities affected
- Affections to the businesses
- Empty spaces might attract crime

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Steps taken to support SMEs

Insurance industry

- ✓ Agreed to offer quotes to SMEs in affected areas
- ✓ Re-insuring the excess
- ✓ Brokers working closer with SMEs

Other support

- ✓ Local/community engagement events
- ✓ Door-to-door face-to-face advice
- ✓ Online toolkits
- ✓ Information provided to SMEs using own business communication and network channels

Government

- ✓ Flood Recovery Grant Scheme
- ✓ Grants: property resilient, repair and relief
- ✓ Communities and Business Recovery Scheme
- ✓ Business Hardship Fund
- ✓ Business Rate Flooding Relief
- ✓ Free Legal Helpline
- ✓ Self-help guidance: e.g. Business survival toolkit
- ✓ Business Continuity Checklist

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Constraints to move forward SMEs' FRM

SMEs

- Lack of strategic planning
- Do not engage with issues outside their activity
- Time constraints
- Priority is to sell
- Lack of financial resources to implement resilience measures
- Lack of awareness:
 - Resilience measures
 - Own flood risk
 - Support available
- Mistrust
 - Lack of impartial advice about flood protection "Challenges"

Government

- Labour force
- Regulation is difficult because not all businesses are in high risk areas
- Belief that a collective responsibility approach will not be supported
- Belief that businesses have the capacity to organise themselves

Insurance industry

- Uncertainty on which is the real level of risk that the SMEs sector represents to the industry
- Believe that SMEs at risk should be proactive in reducing their own risk
- It takes time to assess the effectiveness of new products

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Flood Re

- ◊ Aim: to provide affordable insurance to those likely to be disadvantaged.
- ◊ Excludes micro-businesses, small businesses, charities and co-operatives in high-risk flood areas

- "No evidence to justify the inclusion of commercial insurance products, and consequently businesses were out of the scope"
- "Flood insurance is widely available for SMEs, and brokers can help SMEs secure flood cover"

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Workshop: Building a framework for flood risk management for SMEs

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Objective:

To explore ways to make SMEs more resilient in flood-affected areas, and together think of a framework for flood risk management for SMEs

- Part I. Where are we now in relation to flood risk management including insurance for exposed SMEs?
- Part II. What do we want to achieve in the future regarding flood risk management for SMEs?
- Part III. How do we achieve that future? What things need to change now?
- Part IV. Shall we help the private sector (SMEs)?
- Part V. General discussion

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Part I

Where are we now in relation to flood risk management including insurance for exposed SMEs?



20 minutes group discussion
10 minute wrap up

Part II
What do we want to achieve in the future
regarding flood risk
management for SMEs?



20 minutes group discussion
10 minute wrap up

Part III
How do we achieve that future? What
things need to change now?



20 minutes group discussion
10 minute wrap up

Part IV
Shall we help the private sector (SMEs)?



20 minutes group discussion
10 minute wrap up

Part V
Feedback and Conclusions



20 minutes group discussion
10 minute wrap up