

# Long-term impacts of flooding following the winter 2015/16 flooding in North East Scotland: Summary Report



Photo: Lorna Philip



Photo: Lorna Philip



Photo: Steve Addy



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Mags Currie, Lorna Philip and Gillian Dowds



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**Research Team:** Dr Mags Currie and Dr Lorna Philip jointly led the project, Dr Gillian Dowds was employed as a researcher for the duration of the project and Dr Annie McKee was a researcher on the project for the first year and we thank her for her input at that time.

**Dedication:** This report is dedicated to those who participated in the research, sharing their experiences of the winter 2015/16 flooding.

# Contents

Executive Summary	1
1 Project introduction	3
1.1 Purpose of the research	3
1.2 Case study areas	3
1.3 Data collection approach	4
1.4 Key findings and recommendations	4
1.5 Report structure	5
2 Project findings	5
2.1 Overview of Project Year 1 findings: Similarities and differences in preparations and responses to the flooding between the selected case study areas	5
2.2 Overview of Project Years 2 and 3 findings: Long-term impacts of the aftermath of the flooding felt in both case study areas	6
2.3 Overview of key findings: long-term impacts and lessons learned	6
2.3.1 Responsibilities of householders	6
2.3.2 Sources of information and modes of communication	7
2.3.3 The financial impacts of flooding	7
2.3.4 Temporary accommodation	7
2.3.5 Tenure and impacts of flooding	7
2.3.6 Flooding and insurance	7
2.3.7 Impacts of flooding on businesses	8
2.3.8 Responsibilities of statutory agencies and voluntary organisations	8
2.3.9 Who would benefit most from assistance during and after a flood event?	8
2.3.10 Flooding affects the wellbeing of communities and individuals	8
2.3.11 Long term recovery	9
3 Advice to others who live in a flood risk area offered by participants and associated recommendations arising from the research	10
3.1.1 Being aware that you live in a flood risk area and taking appropriate action	13
3.1.2 Receiving and responding to flood warnings	14
3.1.3 Information about what to do in an emergency	14
3.1.4 Formal and informal support for community members	14
3.1.5 What could community groups do if there is another flood?	15
3.1.6 Insurance	15
3.1.7 Development and land management in flood risk areas	16
3.1.8 Advice for statutory agencies and voluntary organisations	16
4 References	18

# Executive Summary

In response to the severe flooding experienced in North-East Scotland during the winter of 2015/16, the Centre of Expertise for Waters (CREW) commissioned a project to;

- (1) develop a better understanding of the long-term impacts of flooding upon people and communities and,
- (2) identify and understand what types of support and advice are needed at different stages of the recovery process.

The research was conducted over a three-year period gaining new insights about the long-term impacts of flooding on people and communities to be identified. These insights informed several considerations for enhancing flood-risk management (before, during, and after a flood), and highlighted how personal and community resilience may be supported.

## Key findings

### *On People*

- In the first year after flooding, impacts on participants included;
  - issues arising from long-term use of temporary accommodation,
  - sustained involvement in the reinstatement or refurbishment of their own properties,
  - upset and anxiety arising from flood-related experiences and frequent communications with insurance companies and associated parties, and
  - dealing with unforeseen costs.
- Longer-term (> 3 years after the flood) included;
  - challenges in renewing or securing home insurance at an acceptable price,
  - decisions about, installation and maintenance costs of property-level protection measures,
  - negative impacts on physical and emotional wellbeing (arising from reminders about the winter 2015/16 event), and
  - uncertainty over local future flood risk protection measures/proposals.
- How individuals coped with, and recovered from, flooding was highly varied and not directly related to demographic or other personal attributes. However, certain groups (children, older people, those living alone or with pre-existing stressful life circumstances) were found to be more vulnerable during all flood recovery phases. Individuals within these groups would have benefited from more targeted assistance

following the flooding.

- Emergency grants, administered by the local authority, were made available to flooded households and businesses. Grants were also available from national charities and via local fund-raising efforts. This research demonstrated how important, and appreciated, these sources of funding were.
- By the end of the project, participants displayed greater knowledge of how they and their household could be more resilient and better prepared for future flooding by, for example, having prepared a response and evacuation plan.

### *On Communities and Businesses*

- Faced with an emergency situation, communities in North-East Scotland initiated their own immediate response to the winter 2015/16 flooding. Since then, communities have mobilised to develop new, or re-invigorate existing, resilience planning in case of flooding or another type of future emergency.
- Individuals will still be adversely affected by flood events, even if they have experience of, or made preparations following, a previous flood event.
- Flooding affected the entire community. Those whose homes or business premises were not flooded faced practical challenges including disruption to utilities, transport infrastructure and local services.
- Flooding had a serious financial impact on many local businesses, most of which were micro or small enterprises. Some local businesses had never reopened after the flooding. For those still trading, considerable financial losses had been incurred.

## Recommendations

### **Types of support and advice needed at different stages of the long-term recovery process**

*For those living or working in flood risk areas to avoid or minimise the impacts of flooding*

- **BEFORE FLOODING:** People and businesses are advised to be prepared for flooding in the same way that they would routinely prepare for other household emergencies (such as a fire). In particular, we recommend:
  - o having an emergency plan that clearly sets out what actions should be taken in the event of serious flooding including which belongings to take and evacuation protocols;
  - o investigating appropriate property level flood resistance and resilience measures;
  - o ensuring that home/business insurance includes



adequate flood cover (i.e. consultation with Flood Re);

- o registering with Floodline and paying close attention to any notifications;
- o being aware of actions that could be taken to assist neighbours and vulnerable members of the community when there is risk of flooding.
- DURING FLOODING: People and businesses should be prepared and have evacuation plans organised, including the contact details of emergency services; although being mindful their response may not be immediate due to wider pressures elsewhere.
- AFTER FLOODING: Assistance from close friends, family and neighbours is particularly beneficial at times when those who have been flooded need to make decisions on issues such as; which damaged belongings should be salvaged, or in compiling inventories of belongings for insurance company records.

**For statutory organisations and voluntary agencies who have a role to play in preventing, preparing for, responding and assisting the recovery from flooding**

- BEFORE FLOODING: Those who issue flood notifications (such as Flood Alerts, Flood Warnings and Severe Flood Warnings) should ensure that there is clarity over the terminology their notifications use (e.g. warning or alert) and ensure their notifications encourage appropriate action to be taken. Participants in the study thought that public access to local river data was useful and provided reassurance to them and others in their community. We recommend that data be available for as many rivers in flood risk areas as possible.
- BEFORE FLOODING: Home reports, the documents that provide potential property buyers information about a property for sale, should state if a property is located in a flood-risk area, and explicitly state if a property has been flooded. If property level protection measures have been installed these should be identified.
- BEFORE FLOODING: Opportunities to obtain trusted, impartial advice regarding property-level flood-resistance products and options to purchase and install such products should be easily accessible, well-advertised, repeatedly (e.g. every three months), via the local authority or any other authority with the capacity to do so, to householders and businesses
- BEFORE/DURING FLOODING: Information about how a flood event is progressing should be disseminated using a variety of platforms (e.g. print and broadcast media, social media and other online platforms) to ensure that it reaches as many people

as possible. Those responsible for disseminating information must be aware that disruption to utilities and telecommunications networks during flood events mean other modes of communication are essential.

- BEFORE/DURING/AFTER FLOODING: Community-led resilience planning efforts require coordinated long term support from statutory agencies, the emergency services etc. to ensure that communities retain long term capacity to respond to a future emergency situation.
- AFTER FLOODING (IMMEDIATELY): Once the need to use an evacuation centre has passed, co-ordinated efforts to collate and disseminate information about temporary accommodation options and their availability would be very useful as many households can find it difficult to identify and secure suitable temporary accommodation after a flood event. It is recommended that local authorities could lead such efforts.
- AFTER FLOODING: Members of the public appreciate regular and honest communication thus information and updates about plans for future flood-related actions should be readily accessible and transparent. Multiple dissemination modes would ensure that information reached as many people as possible.
- AFTER FLOODING: NHS Scotland and associated services should anticipate additional demands for, e.g. GP and counselling services, in communities that have been flooded. Services should be well-advertised and, if possible, they should be delivered within or a short distance away from areas affected by a flood event.
- AFTER FLOODING (IMMEDIATELY): If grants intended to meet some of the costs of installing flood resistance measures are made available to householders and businesses their availability should be well-publicised at the time when those whose homes were flooded are planning and undertaking home refurbishments. Clear use criteria for such grants are required. It is recommended that Scotland wide guidance is developed that could be made available through local authorities or any other authority with the capacity to do so.
- AFTER FLOODING (LONG-TERM): Formal and informal support are warranted in flooded communities and should target the needs of individuals (e.g. one to one counselling), vulnerable groups (e.g. the frail and elderly, those with a disability) and the needs of the wider community (e.g. informal opportunities for people to get together with the option to share their experiences), including both those whose homes were flooded and those whose homes were not affected. Children who experienced severe flooding should be offered support by their school.

# 1 Introduction

Many areas of Great Britain were badly affected by flooding in the winter of 2015/2016. Over a fourteen-week period commencing in early November 2015 a “persistent and exceptionally mild cyclonic episode” brought “severe, extensive and protracted flooding which impacted most damagingly on northern Britain, Northern Ireland and parts of Wales” (Marsh *et al.*, 2016, p1). The flooding had considerable impacts on numerous communities, including private homes, business premises, transport infrastructure and agricultural land. The Association of British Insurers (in Marsh *et al.*, 2016) estimated that the costs of storm damage to homes and businesses during the winter of 2015/16 exceeded £1.3 billion.

In Scotland, in early December 2015, severe flooding affected the south of the country with Hawick and Dumfries both badly affected. Late December saw further periods of heavy rainfall that brought more flooding to the South of Scotland, badly affecting Peebles and Newton Stewart. Severe flooding also affected the North-East of Scotland in late December 2015 and early January 2016. Some flooding was experienced in Aberdeen city, but most flooding and associated disruption was experienced across Aberdeenshire, in small towns, villages and the open countryside.

The flooding in Scotland in December 2015 and January 2016, some of which was directly associated with Storms Desmond and Frank, was some of the worst in living memory. Previous research (e.g. Weritty *et al.*, 2007) demonstrated that the impacts of flooding on people’s lives can be damaging and may be long-term. The severity of the winter 2015/16 flooding prompted CREW to commission research that would seek to understand these impacts better and to consider what types of support and advice people and communities need at different stages of a long-term recovery from a flood event.

## 1.1 Purpose of the research

The purpose of the project *Assessing the Long-term Impacts of Flooding* was to better understand the impacts of flooding upon people and communities and to consider what types of support and advice are needed at different stages of a long-term recovery. The research was conducted over a three-year period and sought to advance our understanding of these long-term impacts on people and communities, contribute to better flood risk management and make suggestions as to how personal and community resilience may be supported and enhanced.

This research offers novel contributions in that:

- a) It offers longer term perspectives on the post-flooding journey than have been captured in earlier research;
- b) The longitudinal design, which has involved repeated encounters with the same individuals over the duration of the research, has not been attempted over such a long time period in flooding impacts research;
- c) Comparing experiences of individuals who live in an area which has experienced repeated flooding, with those of individuals who live in areas with little previous experience of flooding offers new insights, as does comparing experiences of individuals living in a remote rural community with those who live in an accessible rural area, close to a major urban centre; and
- d) Participants and the researchers co-produced advice to others in the form of ‘peer to peer’ suggestions of what householders and business owners/ managers who live in a flood risk area should do to build personal resilience to flooding and ‘peer to stakeholder’ recommendations designed to enhance community resilience and the response of agencies who play a role in responding to and dealing with the aftermath of flooding.

## 1.2 Case study areas

In late December 2015 and early January 2016 many communities in the North East of Scotland were flooded. The worst flooding on Deeside affected the upper Deeside town of Ballater and much of the surrounding area. This area was selected as the case study area to illustrate an area where severe flooding was unusual. The case study area lies within *Ballater* of the North East Local Plan



[https://commons.wikimedia.org/wiki/Category:Maps\\_by\\_Nilfanion](https://commons.wikimedia.org/wiki/Category:Maps_by_Nilfanion)

**Figure 1** Case study locations in North-East Scotland



District – Local Flood Risk Management Plan<sup>1</sup> (Figure 1). Flooding in Garioch, on the lower reaches of the River Don, is a regular occurrence, especially on low lying agricultural land. Following discussions with the project Steering Group, the neighbouring settlements of Port Elphinstone and Kintore (both located in the Garioch area), which were flooded in early January 2016, were selected as the second case study area to illustrate an area where the winter 2015/16 flooding was the most recent of repeated flood episodes in the last twenty years. The January 2016 flood was also one of the most severe in living memory. The Garioch case study area falls within *Inverurie and Kintore* of the North East Local Plan District – Local Flood Risk Management Plan<sup>2</sup>.

### 1.3 Data collection approach

This research project was conducted over a three-year period and included five distinct data collection phases. In Project Year 1 a household survey (Phase 1) and a business survey (Phase 2) were conducted in both case study areas. The surveys were designed to elicit attitudes and opinions from those directly affected by the flooding and those who were not flooded themselves but who were affected by the disruption the flooding brought to their local area. Phase 3 comprised conducting semi-structured interviews with residents and business owners/managers in both case study areas. In Project Years 2 and 3 further rounds of interviews (Phases 4 and 5 respectively) were conducted with householders and business owners/managers in Ballater and Garioch. Most of those interviewed in Phases 4 and 5 had participated in earlier phases of the research: a longitudinal approach was thus embedded in and integral to, the data collection design and approach.

Issues identified in the flood impacts literature and those which arose in the household and business survey responses were discussed in the Project Year 1 interviews. Interviews conducted in Project Years 2 and 3 provided an opportunity for issues not anticipated by the researchers but raised by some participants in earlier interviews to be included in revised interview topic guides. Interviewing participants three times, annually over a three-year period, was an explicit attempt to allow participants' experiences of the prelude to, immediate aftermath and longer-term impacts of the recent flooding to be elicited. This long-term focus and the opportunity it affords to assess change at the level of individuals, households and the wider community is novel within the context of flooding research: no previous studies have repeatedly engaged with individuals in flooded communities using semi-

structured interviews as the method of interaction over as long a time period as this project has done. Further details about the data collection methods used are discussed in sections 2.3.1 – 2.3.5 of the comprehensive report, reflections on longitudinal approaches to flood impacts research are discussed in sections 1.3 and 2.2

### 1.4 Key findings and recommendations

Severe flooding affects an entire community, including households that were not flooded. The findings of this report demonstrate that severe flooding has long-term impacts. The initial impacts of flooding often include long-term periods in temporary accommodation, arranging and overseeing the refurbishment of property and facing unforeseen costs. Long-term impacts for those who have been flooded include challenges dealing with insurance companies and episodes of ill health and decreased wellbeing. Exactly how the wellbeing of individuals is adversely affected by severe flooding and how they cope is dependent on their personal characteristics and circumstances. The research identifies those most vulnerable to experiencing negative, long-term impacts of flooding as being children, older people, especially the frail elderly, those living alone and those dealing with pre-existing stressful life events or medical conditions.

This research has highlighted the way in which flooded individuals and communities can be assisted before, during and after a severe flood. It was found that individuals and communities in the North-East of Scotland have responded to the 2015/16 winter flooding event with better flood resistance and resilience measures. A range of statutory agencies and voluntary organisations have important roles to play in preparing for, responding to and assisting recovery from flooding. Actions for support have short-term, medium-term and longer-term components.

Those who participated in this research have helped to produce "Advice to Others" (Table 1), comprising advice that they wish to offer individuals and communities that may be affected by flooding in the future and to the statutory agencies and voluntary organisations that support flood resistance, resilience and recovery. The opportunity to offer help to other people motivated many study participants to take part in the research.

Additional specific recommendations have been produced which relate to the following topics:

- being aware of living in a flood risk area and preventative action that could be taken;

<sup>1</sup> Ballater (Potentially Vulnerable Area 06/22), North East Local Plan District, Section 2; pp.252-261. Last accessed on 27th January 2020 via [https://www2.sepa.org.uk/frmstrategies/pdf/pva/PVA\\_06\\_22\\_Full.pdf](https://www2.sepa.org.uk/frmstrategies/pdf/pva/PVA_06_22_Full.pdf)

<sup>2</sup> Inverurie and Kintore (Potentially Vulnerable Area 06/13) North East Local Plan District, Section 2; pp.150-162. Last accessed on 27th January 2020 via [https://www2.sepa.org.uk/frmstrategies/pdf/pva/PVA\\_06\\_13\\_Full.pdf](https://www2.sepa.org.uk/frmstrategies/pdf/pva/PVA_06_13_Full.pdf)

- receiving and responding to flood warnings;
- information about what to do in an emergency;
- formal and informal support for community members;
- what community groups could do if there was another flood;
- insurance;
- development and land management in flood risk areas;
- advice for statutory agencies and voluntary organisations.

For all recommendations the research identifies when the advice is most relevant (i.e. before flooding, during/ immediately after flooding or in the longer-term after a flood event) and who the recommendation is targeted towards (e.g. individuals at risk of flooding, specific statutory agencies).

## 1.5 Report structure

Chapter 2 of this report presents an overview of the project's findings. As stated in section 1.3, the data collection was organised into five distinct phases that provided the researchers with an opportunity to understand the experiences of project participants, one, two and three years after the winter 2015/16 flooding. Chapter 2 begins by giving an overview of year 1 findings (first reported in the Year 1 Summary Report<sup>3</sup>). This material is followed by a presentation of Year 2 findings and Year 3 findings<sup>4</sup> which, combined, allow long-term impacts and the lessons learned following the winter 2015/16/ flooding are considered. Key topics to emerge from the findings include:

- responsibilities of householders;
- sources of information and modes of communication;
- the financial impacts of flooding;
- the use of temporary accommodation, tenure and impacts of flooding; experiences of insurance;
- the way in which the flooding impacted on businesses;
- the responsibilities of statutory agencies and voluntary organisations;
- who would benefit from assistance during a flood event;
- the way in which flooding affects the wellbeing of communities and individuals;

- and a description of the long-term recovery process.

Chapter 3 outlines advice and recommendations emerging from the project. The recommendations comprise specific suggestions as to how individuals, housebuilders and other stakeholders could be better prepared to respond to a flood event. Each recommendation suggests who should take heed of the advice and at what point in time the advice is most relevant i.e. before flooding, during or immediately after a flood event and longer-term after the flooding.

## 2 Project findings

Presented below are overviews of the main findings to arise from Project Year 1 and from Project Years 2 and 3 of the research. These overviews are followed by a summary of key findings relating to the long-term impacts of flooding uncovered by the research and the lessons learned from experiences arising from the winter 2015/16 flooding.

### 2.1 Overview of Project Year 1 findings: Similarities and differences in preparations and responses to the flooding between the selected case study areas

Findings from Project Year 1 illustrated differences between the experiences of, and responses to, winter 2015/16 flooding in both case study areas. This showed that Garioch residents were more prepared for the winter 2015/16 flooding than those who lived in Ballater. Garioch respondents were much more likely than those in Ballater to have signed up to receive Floodline notifications before the winter 2015/16 flooding. They were also more likely to use social media and other online sources of information which posted updates about the flooding. Garioch householders were the most likely to have installed property level protection measures and to take resilience measures, such as moving belongings before flood waters rose. This is likely to reflect the fact that in Garioch (i) there was more time to take action, (ii) previous experiences of flooding in the area meant that some local residents knew what types of action they could take to protect themselves and their property, and (iii) previous experiences of flooding meant that Garioch residents were likely to take action if a flood warning was issued.

<sup>3</sup> Philip, L., Currie, M., Dowds, G., and McKee, A. (2018) Impacts of winter 2015/16 flooding in and around Ballater and in the Garioch: overview of findings from Project Year 1. Available online at: [crew.ac.uk/publications](http://crew.ac.uk/publications)

<sup>4</sup> Philip, L., Currie, M. and Dowds, G. (2018) Impacts of winter 2015/16 flooding in and around Ballater and in the Garioch: Project Year 2 Summary Report. Available online at: [crew.ac.uk/publications](http://crew.ac.uk/publications)

Regardless of the fact that Garioch residents were more prepared for flooding than those in Ballater, the extent and severity of the flooding in both case study areas was unanticipated. Residents in Ballater and Garioch faced similar problems before and during the flooding with regards to ascertaining who (i.e. which statutory agency) was responsible for specific emergency response actions. There was a perceived lack of assistance from statutory and/or voluntary services before the flooding in Ballater, and during and immediately after the flooding in both areas. In both case study areas, some householders needed help to evacuate from their homes and some did so under dangerous conditions. A considerable number of households required temporary accommodation. In Ballater power cuts and disrupted access to fixed/mobile telecommunications affected local residents for up to a month, much longer than it had been a problem in Garioch. This resulted in difficulties for many Ballater residents as they dealt with the aftermath of the flooding.

After the winter 2015/16 flooding, residents in both case study areas whose homes had been flooded found the months during which their homes were being renovated particularly stressful. Substantial insurance claims were made in both areas, highlighting the extent of the flood damage. A year and a half on from the flooding the cost of household insurance had increased in both areas, with some residents having to make savings elsewhere in household budgets to ensure they could retain appropriate insurance cover.

Unsurprisingly, flood impacts were greater for those whose homes were flooded in both case study areas. The impact of the flooding on the health and wellbeing of those living in the Ballater community was more widespread than in Garioch (most likely attributable to a larger proportion of the community having been directly affected by the flooding in Ballater). In Ballater, both those whose homes and businesses were and were not flooded felt the effects of the flooding whereas in Garioch the impact was predominantly felt by those whose homes and businesses had been flooded. In Ballater and Garioch the flooding prompted local residents to seek clarification regarding who was responsible for local flood protection measures and the maintenance of water courses. The experience of being flooded provided the impetus for new resilience groups to form or for existing groups to be reinvigorated in both case study areas.

Overall, the Project Year 1 findings identified some differences between Garioch and Ballater, the former having previous experience of flooding, the latter having little prior experience during their lifetimes. However, the differences were not as marked as had been expected. Our findings highlight how flooding of the magnitude experienced in the case study areas in winter 2015/16 is very difficult to prepare effectively for and subsequently recover from.

## 2.2 Overview of Project Years 2 and 3 findings: Long-term impacts of the aftermath of the flooding felt in both case study areas

Findings from Project Years 2 and 3 clearly illustrate the length of time it takes for those affected by a serious flood event to have moved on from the flooding, to 'get back to normal', in practical, emotional and financial terms. By the time Project Year 3 interviews were completed it was evident that most participants in both case study areas had been able to move on from the flooding. They told us that they felt settled in their homes and that on a day-to-day basis, the flooding did not enter into their thoughts as much as it had previously. However, for some people, the impact of the winter 2015/16 flooding was still keenly felt on a regular basis. For example, the practical upheaval and emotional turmoil experienced in the after-math of the flooding had taken its toll. Some participants experienced long-term physical and emotional health impacts, often attributed directly to the stress and anxiety they faced following the flooding. For almost everyone who took part in the research, unpleasant memories could be triggered by reminders of the flooding at unexpected moments, with consequent negative impacts on wellbeing.

Having an opportunity to follow individuals for up to three and a half years after a serious flood event has provided further evidence about the sustained impacts of flooding reported in previous research. It has also highlighted some new issues that further our understanding of the long-term impacts of flooding. In particular, the research highlights the importance of being able to speak to householders and business owners/ managers more than once during a research project. Behaviour, recollection of events, personal circumstances and financial status can all change as time passes: our longitudinal approach allowed such changes to be captured and our analysis of flood impacts is enriched as a result.

## 2.3 Overview of key findings: long-term impacts and lessons learned

### 2.3.1 Responsibilities of householders

Householders and business owners/ managers have a key role to play in attempts to mitigate the impacts of flooding. Those who live in a flood risk area often underestimate the risk of their property flooding, the severity of flooding that could affect their area and the way in which a flood can affect the entire local community. The experiences of winter 2015/16 led many who participated in the research to recommend actions that householders and business owners/ managers could take personal responsibility for; these are considered in Chapter 3 of this report.

### 2.3.2 Sources of information and modes of communication

Flows of information and communications between private citizens, community groups, statutory agencies and voluntary organisations were explored during all phases of the research. In project Year 2, interviewees in Garioch in particular reported they were concerned about the lack of information they had received about local flood protection proposals.

Those organisations who have a responsibility to disseminate information before, during and after a flooding emergency should use a variety of platforms (e.g. print and broadcast media, social media and other online platforms) to ensure that information (ideally, regular updates about local flood protection actions) reaches as many people as possible. The use of multiple communication modes would help to ensure that as many people as possible are aware of proposals for local flood protection schemes. This research highlights the relatively recent role of social media and other online sources, however these are not available to everyone in a population due to both power cuts, disruption to telecommunications infrastructure (both likely during, and in the aftermath, of a flood) and personal use of technology.

### 2.3.3 The financial impacts of flooding

Flooded households and businesses in both case study areas incurred considerable unforeseen costs immediately after the winter 2015/16 flooding and during the subsequent recovery period. Some, but not all, costs were covered by insurance, however cash-flow in the initial aftermath of the flooding was problematic for some. Initially, participants had to pay more than they would normally for everyday expenses such as food (e.g. ready-meals or take-aways if they only had access to basic kitchen facilities) or laundry (i.e. having to use a launderette if temporary accommodation did not have a washing machine/drier) as well as the costs of replacing everyday items ruined by flood water such as clothing and footwear. During home renovations, dehumidifiers were expensive to run and those who had not returned to their homes often had to pay utility bills both for their home and temporary accommodation for many months. Emergency grants from the Scottish Government, administered by the local authority, were available to flooded households and businesses in North-East Scotland following the winter 2015/16 flooding. Grants were also available from national charities and local fund-raising efforts. Our research demonstrated how important, and appreciated, these sources of funding were to those faced with unanticipated costs associated with the flooding.

### 2.3.4 Temporary accommodation

Due to the need for extensive property repairs and renovations, many households needed to stay in temporary accommodation for months until their home was once again fit for habitation. Two thirds of respondents to the household survey who used temporary accommodation were unable to return home until six months had elapsed, a third were out of their homes for more than nine months. The length of time it took to return home was, for many people, longer than they had anticipated. Some participants (including individuals, couples and families) had to stay in multiple temporary accommodations, including places outwith their home community. Securing suitable temporary accommodation was particularly difficult for those with pets, smokers or those with specific requirements such as not being able to climb stairs. Staying with friends or relatives, in a hotel or B&B or in a rented property, coupled with having to manage or oversee home reinstatements at the same time, was often stressful, costly and very disruptive to everyday life.

### 2.3.5 Tenure and impacts of flooding

The impacts of flooding experienced by tenants and owner occupiers showed some differences. Our findings showed that some tenants were at a disadvantage to landlords, for example, through being unable to claim the full cost of the available emergency grant funding. Landlords are responsible for the physical fabric of a property and the installation of measures such as flood doors or air vents is their responsibility. Tenants' desires to have such property level protection measures in their home were often unmet by their landlord. The research also uncovered some instances of landlords not having building insurance which resulted in tenants being unable to secure contents insurance.

### 2.3.6 Flooding and insurance

The research uncovered numerous instances where home and business premises reinstatement was fraught with difficulty. In hindsight, some participants wished that they had accepted an adequate lump sum payment from their insurance company. This was a response to complaints about poor quality home renovations carried out by unknown companies, contracted by their insurance company, some of whom travelled hundreds of miles to carry out the work. On the other hand, many participants were very happy with their renovations and some were particularly grateful for the rapport built up with those involved in the process over this difficult time. In the longer-term, it was found that insurance premiums and excess payments increased significantly for many policy holders as time elapsed. The most significant increases



were reported for the period between Project Years 2 and 3. Whether or not the Flood Re<sup>5</sup> scheme was used, the process of securing suitable and affordable insurance was time consuming, daunting, frustrating, and a source of anxiety.

### 2.3.7 Impacts of flooding on businesses

Our findings highlighted the serious impacts of the winter 2015/16 flooding on local businesses, most of which, as is common across rural Scotland, were micro or small enterprises. Some local business owners had been unable to reopen after the flooding. For those still trading, considerable financial losses had been incurred, in some cases this meant plans for future investment or expansion had to be put on hold. In remote rural communities, where private sector employment opportunities are dominated by jobs in small, often locally owned and managed enterprises, detrimental impacts of flooding on business can have lasting long-term impacts on local employment opportunities.

### 2.3.8 Responsibilities of statutory agencies and voluntary organisations

A range of statutory agencies and voluntary organisations have important roles to play in preparing for, responding to, and assisting with recovery from flooding. They also support community-led resilience planning and ensure the effective flow of information and advice within communities before, during and after a flood event. Perceptions about the activities of, for example, local authority, emergency services, SEPA and Scottish Flood Forum were broadly positive.

Dialogue between community groups in both case study areas and voluntary organisations and statutory agencies was thought to have helped to develop: an improved understanding of the roles and responsibilities of private citizens and other actors in the event of an emergency; contributed to developing new or revised existing emergency plans; and had improved understanding about what actions were being taken in the case study areas to mitigate against future flooding. Enhanced communication between community groups and other actors was, as a result of these activities, viewed positively. However, among interviewees who were not members of community groups, concerns were raised about a perceived lack of information regarding the development of local flood protection plans and a lack of understanding regarding roles and responsibilities in the event of a future emergency. There was an impression that, two years on from the flooding, there was much less communication between local residents and voluntary and statutory

agencies than there had been in the immediate aftermath of the flood. Not everyone can or wants to get involved in community groups. Some participants thought that other members of their community expected too much of local government, but high expectations could be a consequence of roles and responsibilities being poorly understood.

### 2.3.9 Who would benefit most from assistance during and after a flood event?

The impacts of flooding are profound, regardless of personal demographic or other attributes. The research found, however, that school age children, vulnerable older people, those living alone and those dealing with pre-existing stressful life circumstances or medical conditions would have benefited from more targeted assistance following the winter 2015/16 flooding. People experience different combinations of economic, practical, emotional and physical health impacts and when these impacts may be felt, is difficult, if not impossible, to predict. This in turn affects their wellbeing - specifically their ability to cope – as the months following a serious flood (or other unforeseen disruption to their lives) pass. For some individuals, impacts were felt most strongly in the months immediately after the flooding. The impact on others was most acute after they returned to their homes following a period of living in temporary accommodation. For example, it was found that older adults in particular can feel overwhelmed moving back to their home if reinstatement works have reconfigured room layouts, or resulted in the installation of new appliances. Seemingly simple types of assistance, such as help to decipher the operating instructions for new appliances, would be very helpful at this time.

### 2.3.10 Flooding affects the wellbeing of communities and individuals

Flooding affects an entire community, not just those whose property is badly flooded. A community impact is most pronounced in small settlements and in rural areas where there is a strong sense of the 'community' and people spend most of their time in the locality (such as the Ballater area). Those whose homes or business premises are not flooded face practical challenges in the immediate aftermath of a flood, including disruption to utilities, transport infrastructure and local services. They can provide practical help such as offering temporary accommodation to those who are unable to return home or participate in clean-up operations and longer-term support. They are aware of the impacts of flooding if the homes of friends and neighbours were flooded and

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<sup>5</sup> Information about FloodRe is available at <https://www.floodre.co.uk/>

may experience 'survivor guilt' (overwhelming feelings of empathy for people they know who experienced the devastation caused by the flood). Witnessing piles of household belongings left in the streets to be disposed of was a particularly distressing sight for all. In the longer term, members of flooded communities may become involved in community resilience planning and associated activities; whether or not they themselves were flooded.

Some participants interviewed in Project Year 3 (three and a half years after the flooding) still experienced a detrimental impact and would have benefitted from professional support and counselling. Those who felt they had managed to 'move on' from their experiences could feel very anxious, particularly during periods of heavy rainfall, or be caught off guard by situations or memories that suddenly reminded them of the flooding and the aftermath.

The impacts of a serious flood are felt throughout a community. The physical and emotional health of individuals can be compromised by flooding and how individuals cope with and recover from flooding is variable. Post-flooding support in the short, medium and longer-term should target the needs of individuals (e.g. one to one counselling) and the needs of the wider

community (e.g. regular informal opportunities, not necessarily promoted as a 'post-flood' event, for people to get together where the opportunity to speak about their experience is welcomed and perhaps even encouraged).

Faced with an emergency situation, communities in North-East Scotland initiated their own immediate response to the winter 2015/16 flooding. After the flooding, communities mobilised to develop new or re-invigorate existing emergency/resilience planning activities. Ongoing support from statutory agencies will help to ensure communities retain the capacity to respond to unforeseen future emergency situations.

### 2.3.11 Long term recovery

The research highlights the importance of speaking to interviewees more than once, as it was found that attitudes changed with time, mood and in relation to other external factors. James' story illustrates how, over time, the interplay of numerous factors depleted his initial enthusiasm for rebuilding his flooded business. It was only through conducting repeat interviews with the same individuals, that changes such as these could be captured.

#### The experiences of a business owner whose premises was flooded

James [name changed], in mid-life and working full-time, co-runs a business which was flooded in winter 2015/16. James described the financial impacts of the flooding on his business. His interviews included reflections about his changing attitudes towards re-establishing the business should another severe flood occur.

Since the winter 2015/6 flooding, the refurbishment of James' premises included several measures to minimise any future damage caused by flooding, for example, blocking air vents and increasing the height of electrical sockets. These measures were all aimed to minimise damage caused by water ingress, but James recognised that to make the premises completely water-tight, even more would need to be done, as James related in his Project 1 Year Interview: *"I don't think you can defend against the flood that we had. We have to just say...hopefully it'll be another 200-odd years before we have another one. But we can defend against a slightly lesser flood."*

A year later, James thought that installing flood protection measures such as flood doors, to ensure the business premises were water-tight, was too costly. He said *"There was a certain amount of money granted for doing flood defences but I would still say that, yes, it's in the back of our mind but could we do more as in flood prevention, yes, there is more we could do but we need the extra funds to be able to do that" and went on to note "These things are all expensive and you're still playing the game where you're thinking the chances of it happening twice in three years is slim. The chance of it happening twice in ten years is slightly more. So, yes, you're still going on playing the averages a little bit."*

Over the course of the study, and largely attributed to wider economic changes, James told us that his business had not returned to its pre-flooding financial position. In the months immediately following the winter 2015/16 flooding cash-flow was a real problem and the emergency grant the business received was spent paying staff wages as narrated in James' Project Year 1 interview: *"Until money came back in. I mean it all sorted itself out eventually, but... But em, I mean...we obviously had [number of] employees [...] I mean the initial problem is cashflow [...] Obviously you've still got to pay your guys. They're in more need of their money than- You still had bills. Because the bills were coming in for stuff that you'd just thrown in the skip"*.

Another business cost was described in Project Year 3. Although not wholly attributable to the business premises having been flooded, insurance costs had increased significantly. James said *"Our insurance is three, four, five – probably five times as much as it was before the flood, simply because – not particularly because we were flooded but simply because we did the [business] review, which we probably should've done long before the flood [...] ...It's a lot of money per month now, yeah."*



Rebuilding the business, had had both financial and personal implications as the following extracts from Project Year 2 and Project Year 3 interviews respectively illustrate: *"No, getting out in the hills (...) etc. has depleted just now. It's something that I'm conscious of and trying to make more time for [...] I seem to be spending quite a lot of time at work trying to make the business work. That's still very much the main focus two years on"* (Year 2) and *"I mean, before the floods, we were very lucky in business that we had a reasonably good kitty, I mean, we had plans to develop the business to try and take it another stage. We haven't got that anymore, that money"* (Year 3).

In Project Year 1 James had discussed very positively his drive and the impetus he had felt when his refurbished shop had opened. Three years on from the flooding his attitude towards re-establishing the business again should another severe flood occur had changed considerably. In his Project Year 2 interview James said: *"If you were to ask me now if it happened again next week, would I open the [business premises] again, I couldn't give you the answer. Last time, it wasn't a question; yes, it would be repaired, but I think to have to go through that once in a lifetime is plenty. If we were hit with that again, whether I would say, 'No, that'll do me', I'm not..."* In Project Year 3 he went on to say: *"It's a concern. If I'm brutally honest, if my business was destroyed again, I wouldn't rebuild it. I'm a wee bit older ... [...] and I know how long it would take to try and get it up to any sort of level again and I could probably understand better now how some of the businesses felt last time, if you see what I mean? I couldn't understand why people didn't want to get on with it, because I did but three years down the line and seeing what's involved, no, I'd be saying, 'no, let's have a settlement, thank you very much'"*.

James' experiences illustrate how, as time went on, his drive to rebuild the business after a serious setback had diminished. On reflection, he stated that rebuilding his business had ultimately been like starting the business venture from scratch, which was not something he would want to do again: *"We have been in business for [a while] pre-flood and obviously you're trying to build up a bit of money. People ask me now how long I've been in business and I say, 'I've been in business for two years', because it was like starting again after the flood, totally starting again. In fact, you were starting again on borrowed money"*.

### 3 Advice to others who live in a flood risk area offered by participants and associated recommendations arising from the research

voluntary organisations, statutory agencies), and when an action should be taken (during or immediately after a flood or in the longer term).

The research sought to better understand the impacts of flooding upon people and communities and to consider what types of support and advice are needed at different stages of a long-term recovery. It was initially anticipated that suggestions regarding advice and support would be developed by the researchers following analysis of the data collected during all three years of the project. However, the suggestions emerged as a co-produced outcome: our interviewees wanted to share their experiences and spontaneously offered advice to others who may be in a similar situation in the future in project Year 1 interviews. A formal invitation to do so was then incorporated into subsequent interviews. All participants had suggestions, some of which came directly from their own personal experience, other suggestions were based on knowledge of what had happened to other members of their community. Eight broad themes, based on different types of advice, emerged from the interviews conducted in Project Year 2. Summaries of the eight themes are discussed and recommendations presented in Tables 1 to 8, along with suggestions as to the target audience (e.g. members of the public, community groups,

Table 1: Advice to others				
Advice or recommendations	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
<b>Receiving and responding to flood warnings</b>				
Those who live and or work in a flood risk area should be signed up to FloodLine	✓			Individuals who live and/or work in a flood risk area
Households and businesses in a flood risk area should have a home/business emergency plan setting out what to do in the event of receiving a flood alert or warning.	✓			Business owners/managers in a flood risk area Fire and Rescue Service Householders Individuals who live and/or work in a flood risk area Local community groups in a flood risk area
Information about an ongoing flood event should be disseminated using a wide range of communication methods	✓	✓	✓	Community groups Individuals Local and national media Statutory and voluntary organisations
<b>Managing development in known flood risk areas</b>				
The potential flood impact of new residential and/or commercial developments upon neighbouring properties should be consistently evaluated and reviewed in flood risk areas.	✓			Local authority planning teams Private developers Scottish Government (those responsible for land-use planning regulations)
Planning conditions designed to mitigate against potential flood risk arising from new developments should be consistently enforced.	✓			Local authority planning teams Private developers Scottish Government (those responsible for land-use planning regulations)
Local resilience groups or other flood related community groups should have formal representation in local planning and development decision making processes.	✓			Community Council Community Planning Partnership Scottish Government Local authority planning teams Planning guidelines
<b>Making your home flood resistant and resilient</b>				
Property owners in a flood risk area should be able to access independent advice about property level protection measures that would be suitable for their property.	✓			Community Planning Partnership Companies selling and installing property-level flood protection measures. Individuals who live and/or work in a flood risk area Local authority Property Flood Resilience Delivery Group Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Together
Those who live and/or work in a flood risk area should consider keeping important documents, precious and/or sentimental belongings on a high shelf/ upstairs. This should be part of wider household emergency planning.	✓			Business owners/managers in a flood risk area Individuals who live and/or work in a flood risk area

Advice or recommendations	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
<b>Insurance</b>				
Households and businesses in a flood risk area should have adequate buildings and contents insurance for their property.	✓			Business owners/managers with premises in a flood risk area Individuals who live and/or work in a flood risk area
The installation and maintenance of property level protection measures in a property should be taken into account by insurance companies when calculating premiums and associated excess requirements.	✓			Association of British Insurers Central Government (Westminster) Flood Re Insurance companies
Online insurance application forms should be designed to allow those householders and businesses in a flood risk area to provide appropriate and detailed information in an effort to make obtaining insurance a more straight forward process.	✓			Association of British Insurers Central Government (Westminster) Flood Re Insurance companies
Some insurance companies expect consumers to provide very detailed information before a quote is issued. Insurance companies should obtain this information such as the exact distance from a water course or the amount of money that has been spent on local flood defences from bodies such as the local authority. Consumers should not be expected to supply the details themselves.	✓			Association of British Insurers Central Government (Westminster) Insurance companies
Assistance to prepare and oversee post-flooding insurance claims should be widely available.		✓		Association of British Insurers Insurance companies Scottish Flood Forum Scottish Government
Insurance companies should be required to monitor the quality of work undertaken by those they contract to undertake renovations and repairs required because of flood damage.		✓	✓	Insurance companies Local Government Trading Standards Association of British Insurers
<b>Dealing with stress or ill-health associated with flooding</b>				
Arranging events designed to get people in an area affected by flooding together should be encouraged. Wellbeing may be promoted if people can talk about their experiences with others.			✓	Community groups NHS (community health teams and specialist services)
Information about organisations that provide help and support to those finding it difficult to cope in the aftermath of a flood should be widely and regularly publicised.			✓	Community Council Community Planning Partnership Local Authority NHS (community health teams and specialist services) Scottish Flood Forum Local newspapers Those responsible for curating community notice boards, community website etc. Those who produce community newsletters etc

Advice or recommendations	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
<b>Community-level and statutory agency actions following a flood</b>				
The activities undertaken by local resilience groups should be well publicised, to ensure members of a community know about the emergency plans that have been designed for their area.			✓	Community Councils Community Planning Partnership Emergency Services Local Authority Local resilience groups
Information about flood risk management plans, including proposals for flood defences, should be widely disseminated in communities that have been affected by flooding.			✓	Community Councils Community Planning Partnership Consultants Emergency Services Local Authority Local resilience groups

### 3.1.1 Being aware that you live in a flood risk area and taking appropriate action

Participants felt that there were measures people could take themselves to increase their awareness and responsibility with regards to flooding. It was suggested that people who were thinking of buying a property should consider its flood risk by checking whether it had flooded previously (Table 2). They should also check SEPA's flood risk maps and be aware that purchasing property in a flood risk area can incur costs such as high insurance premiums and excess payments (section 3.1.6). Participants stressed the need for those who live or work

in flood-risk areas to think about appropriate measures they could install in their property to make it more flood resistant (e.g. flood gates, air vent covers). Various flood resilience measures for home and business premises were also identified, which included having multiple copies of important documents (digital photographs or other electronic copies could be saved to multiple locations, including cloud storage, were suggested), where possible valuable and sentimental items should be kept above ground floor level, and non-porous landscaping in gardens and drive-ways should be discouraged.

**Table 2: Recommendations for new home buyers and householders**

Recommendations: For new home buyers and householders	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Home reports should state if a property is located in a flood-risk area, and explicitly state if a property has been flooded. If property level protection measures have been installed these should be identified.	✓		✓	Scottish Government Property Flood Risk Resilience Group
Those who live or work in a flood-risk area should be encouraged to install measures that could make their property more flood resistant.	✓	✓	✓	Community Planning Partnership Companies selling and installing property-level flood protection measures. Individuals who live and/or work in a flood risk area Local authority Property Flood Risk Resilience Group Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Scotland

### 3.1.2 Receiving and responding to flood warnings

Householders and business owners/managers in flood-risk areas should be registered to receive flood alerts and warnings from Floodline. Calls to heed flood warnings were made as participants (Table 3) recalled how surprised

they had been at the speed at which the water rose during the winter 2015/16 flooding. Some participants suggested that having a home emergency escape plan was important. Others noted that evacuating their property quickly and safely was the most important thing to do if a flood warning was received.

Recommendations: Receiving and responding to flood warnings	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Those who live or work in a flood risk area should be registered to Floodline and pay close attention to any flood warnings they receive.	✓	✓	✓	Individuals who live and/or work in a flood risk area

### 3.1.3 Information about what to do in an emergency

Householders and business owners/ managers with property located in flood risk areas should be prepared for flooding in the same way that they would routinely prepare for other household emergencies such as a fire or a power cut. A home emergency plan should include measures to be taken if a flood warning is issued such as

knowing how to switch off utilities, packing a 'grab-bag', moving valuable and sentimental items etc. Awareness of the needs of neighbours and vulnerable members of the community in the event of an emergency such as a flood was also advocated. In the event of evacuating a property it was suggested the residents should try to ensure that other people knew they were doing so and knew where they were going to seek refuge.

Recommendations: What to do in an emergency	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Those who live or work in a flood risk area should have a household emergency plan that clearly sets out what actions should be taken in the event of a serious flood. This should include being aware of actions that could be taken to assist neighbours and vulnerable members of the community.	✓		✓	Business owners/managers in a flood risk area Fire and Rescue Service Householders Individuals who live and/or work in a flood risk area Local community groups in a flood risk area Scottish Flood Forum

### 3.1.4 Formal and informal support for community members

Participants felt that there should be more formal and informal support available during and following a flood event, particularly for older and vulnerable residents and those with young children. Assistance could include helping a vulnerable person to move possessions, to leave their home or offering them refuge in your home if they had been told to evacuate. Help could also be offered

when insurance claims were being made, particularly for vulnerable adults and those unused to dealing with detailed and protracted negotiations. Neighbours could also help the owners of new household appliances decipher user manuals following the replacement of kitchen and electronic appliances. It was suggested that primary and secondary schools should adopt a consistent and formal approach in their response to children who have been directly affected by flooding.

**Table 5: Recommendation: Formal and Informal support for community members**

Recommendations: Formal and informal support for community members	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
The NHS should anticipate a need for additional demands on services after a flood. Services should be well advertised and their availability and accessibility in remote rural areas should be ensured.		✓	✓	NHS (community health teams and specialist services)

Concern was expressed by some that not all of their friends and acquaintances who had been flooded were dealing with their experiences well following the 2015/16 flooding. Opportunities for formal or informal counselling within a community were considered desirable, and it was thought that such opportunities should not be promoted as something exclusively for those whose homes had been flooded. It was felt that more resources should be available to support the wellbeing and mental health of individuals in the community experiencing anxiety and feeling upset or unsettled by the flooding (Table 5). A community-based social event could provide a 'safe space' for people to talk about their experiences, and those in need of support could be identified and pointed in the direction of appropriate counselling or other services.

### 3.1.5 What could community groups do if there is another flood?

Most of the advice that participants offered to community groups related to what could be done *after* a flood event and their suggestions have been addressed in the emergency plans developed/being completed in both case study areas. Development of these emergency plans has required local communities to think about who in the community will do what, when, and in what order to ensure that help and assistance is offered in the most effective manner. Communities also need to think about vulnerable people within them and the ways they can be both identified and offered prompt assistance.

### 3.1.6 Insurance

Most participants considered home insurance to be essential. It was observed that a realistic total value of home contents was likely to be higher than an initial estimate. The cheapest premium would not necessarily equate with appropriate insurance cover. Participants who had gone through the process of making a post-flood insurance claim had learnt a lot from this experience and made suggestions that might help others in the future deal with a claim (Table 6). It was recommended that people making insurance claims should be able to

access impartial, independent support and advice and that the information provided should be consistent. The Scottish Flood Forum provides this type of support and it was suggested that organisations such as Scottish Flood Forum should target assistance towards people who live on their own or to vulnerable members of a community. The importance of getting in touch with your insurance company as soon as possible following a home being flooded was stressed. More consistency between loss adjusters and insurance companies was requested. Participants recommended taking photographs of items being disposed of so that householders could provide evidence of the type and quality of items they had lost when negotiating for replacements.

Those who had dealt with an insurance claim recalled that they had been surprised they had needed to deal with multiple organisations and individuals involved in renovating their home including, for example, the insurance company, loss adjuster, company clearing out their home, contractors appointed by the insurance company and individual tradespeople. Many interviewees advised that an assertive attitude and persistence are required when dealing with all parties involved in home renovations.

Discussions about insurance led some participants to suggest that a community-based, independent loss adjuster could be appointed who would act for those directly affected by flooding. A community assessor could act as an advocate for householders and mediate between them and the insurance company appointed loss adjusters if required. A community-based loss adjuster could work alongside and offer complimentary support to that already offered by the Scottish Flood Forum and be paid for out of local fundraising or other post-flooding grants made available to a community. Suggestions of having someone working on behalf of the community were not just restricted to supporting insurance claims. A few interviewees suggested that the role could include having an independent named individual available for consultation by local residents wanting advice on *all things flooding*, including impartial information about property level protection measures.



Table 6: Recommendation: Insurance				
Recommendations: Insurance	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Those who live or work in a flood risk area should ensure that home/business insurance includes flood cover.	✓	✓	✓	Business owners/managers with premises in a flood risk area Individuals who live and/or work in a flood risk area

### 3.1.7 Development and land management in flood risk areas

In the Garioch case study area, concern was raised by participants about the scale of recent housing and industrial developments and the potential impact these had on flood risk. It was thought that the impact of new developments on drainage patterns and the water table had been detrimental. It was suggested that house builders constructing properties within or near a flood risk area should be required to install property level protection

measures such as suitable air vents to new homes (Table 6). Where developers are required to make a contribution towards the construction and maintenance of flood defences (as a condition of planning permission being awarded) local people wanted evidence that such finance was directed to a flood defence project.

In the Ballater area large tracts of land are managed for forestry, farming and sporting activities. A balance between the interests of, for example, private estates and farmers and protecting local housing was advocated.

Table 7: Recommendations: Development and land management in flood risk areas				
Recommendations: Development and land management in flood risk areas	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Those who have a responsibility to disseminate information before, during and after a flood should use a variety of platforms (e.g. print and broadcast media, social media and other online platforms) to ensure that information reaches as many people as possible.	✓	✓	✓	Community groups Individuals Local and national media Statutory and voluntary organisations
Opportunities to purchase flood resistance measures from a local authority should be available to householders and business owners/managers whose property is located in a flood risk area. Trusted advice on the most appropriate measures to invest in should be readily available, with assistance for installing these.	✓	✓	✓	Community Planning Partnership Companies selling and installing property-level flood protection measures. Individuals who live and/or work in a flood risk area Local authority Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Scotland

### 3.1.8 Advice for statutory agencies and voluntary organisations

Suggestions for improving communication between voluntary organisations and statutory agencies and local residents were offered by participants. It was suggested that communications from relevant agencies regarding flood risk should be presented clearly and simply to ensure that disseminated information is accessible to all. It was also felt that the local authority and emergency services

should be proactive in offering timely information as a means of reassuring the community that local flood protection remains an important issue. There was a perception that the planning system does not adequately respond to concerns voiced by local residents. This view was expressed most vociferously in Garioch where there is a perception that new housing and industrial developments have been permitted in areas known by locals to be at risk of flooding. In the Garioch case study areas there was also confusion and worry about who had

long term responsibility for the maintenance of specific local flood defences, drainage infrastructure and water courses. Clarity regarding who is responsible for the maintenance of such measures, who owns land, and who has responsibility for discharging obligations such as flood mitigation and clean-up operations. If those responsible for maintenance do not fulfil their responsibilities, there should be a mechanism of enforcement to ensure communities are not unnecessarily put at risk of future flooding (Table 8).

Interviewees in both case study areas demonstrated a keen interest in local flood protection proposals or plans. Public meetings to present and discuss these were much appreciated, however communications at these events should be clear and simple for everybody to understand. Opportunities to ask questions and raise concerns from community members are highly valued.

Table 8: Recommendations: Statutory organisations and voluntary agencies				
Recommendations: Statutory organisations and voluntary agencies	Timeframe for Advice			Recipient of advice
	Before Flooding	During/ Immediately after Flooding	Longer-term after Flooding	
Those who have a responsibility to disseminate information before, during and after a flood should use a variety of platforms (e.g. print and broadcast media, social media and other online platforms) to ensure that information reaches as many people as possible.	✓	✓	✓	Community groups Individuals Local and national media Statutory and voluntary organisations
Opportunities to purchase flood resistance measures from a local authority should be available to householders and business owners/managers whose property is located in a flood risk area. Trusted advice on the most appropriate measures to invest in should be readily available, with assistance for installing these.	✓	✓	✓	Community Planning Partnership Companies selling and installing property-level flood protection measures. Individuals who live and/or work in a flood risk area Local authority Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Scotland
Grants to home and business owners intended to meet some of the costs of installing flood resistance measures should be publicised when home refurbishments following flood damage are being planned. Sources of emergency financial assistance should be well publicised and efforts made to ensure financial assistance reaches all those who would benefit.		✓	✓	Community Planning Partnership Companies selling and installing property-level flood protection measures. Individuals who live and/or work in a flood risk area Local authority Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Scotland
Once the immediate need to use an evacuation centre has passed, co-ordinated efforts to collate and disseminate information about temporary accommodation options and their availability would be very useful. The local authority could play a lead role in this.		✓		Community Planning Partnership Housing Associations Individuals who live and/or work in a flood risk area Local authority Scottish Flood Forum (SFF) Scottish Government's Resilience Team/ Ready Scotland
Further research about the long-term impacts of flooding on securing household and/or business insurance, monitoring long-term community resilience and household preparedness for future flooding is recommended			✓	CREW and other research funders

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