Public perceptions of Scotland's changing climate and resilience to climate impacts: a snapshot

Research for the Scottish Communities Climate Action Network

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INFORMING POSITIVE CHANGE

Scottish Communities Climate Action Network

Public perceptions of Scotland's changing climate and resilience to climate impacts

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Contents

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1   Introduction

This report presents findings from qualitative research focusing on public perceptions of Scotland's changing climate and communities' resilience to climate change impacts. The research was designed to inform the planning of the Scottish Communities Climate Action Network (SCCAN) future activity.

1.1   Research purpose

The project aimed to investigate the Scottish public's perceptions of climate change impacts on their communities, their awareness of resilience-enhancing activities, and their views on necessary actions to adapt to climate change.

It also sought to evaluate community preparedness and response strategies for climate-related crises and to collect examples of effective practices and information sources for community resilience to climate change.

Specifically, the objectives were to:

- understand how the Scottish public perceives the potential impacts of climate change on their local communities,

- explore the awareness and views of the public on activities aimed at enhancing Scotland's resilience to climate change,

- identify the actions the public would like to see implemented to address climate change where current efforts are insufficient or absent,

- assess the readiness and response mechanisms of local communities in Scotland to climate-related crises,

- gather insights on good practices and sources of information regarding community resilience to climate change, and

- share the voices, stories, views, hopes and fears of the interviewees.

1.2   Report structure

The report contains three further sections:

- a Methodology section outlining the approach and methods used,

- a Findings section that presents the research findings,

- an Appendix that includes additional methodological information.

2 Methodology

This section outlines the approach and methods used to recruit interviewees, interview them and analyse data. Prior to work commencing a target of 16 in-depth interviews was set by the client SCCAN.

2.1 Recruitment

2.1.1 Advertisement

Promotion of the opportunity to be interviewed for this research was led by the client SCCAN. The following text was used:

"Are you interested to share your thoughts, fears and ideas on how climate change will affect you and your area and what should be done about it? We at the Scottish Communities Climate Action Network are planning our work on climate adaptation and your views are urgently needed. If you have an hour to spare please contact rebecca@sccan.scot Participants will be offered a £20 voucher to thank them for their time."

The offer of a voucher was made to remove financial barriers to participation for those on low incomes, improve interview recruitment and retention. Interviewees were members of the public speaking as themselves, in their free time, rather than as part of an employment role.

This advertisement was published in SCCAN's own newsletter and was supplied to the following key partners of SCCAN for distribution via their own communication channels:

- Scottish Government's Climate Hub

- Scottish Council for Voluntary Organisations

- CEMVO Scotland (support organisation for Scotland's ethnic minority voluntary sector and its communities)

- Scottish Government's Voluntary Sector Resilience Partnership

- Keep Scotland Beautiful

2.1.2 Responses received

24 members of the public responded to the advertisements by emailing SCCAN to register their interest. They were all thanked for their interest and asked to complete an

online form in order to provide their contact details and additional information to aid sampling.

The form asked for contact details, convenient times of the day for interview, the area in which they were based, and a self-rating of their existing knowledge and experience of climate change adaptation.

23 of the 24 initial respondents went on to complete the form, plus an additional contact of the client, giving a total of 24 potential interviewees to select from.

2.2   Sampling

The 24 potential interviewees were reviewed and 16 were selected for interview ensuring a spread of geographical location and existing knowledge and experience of climate change. Of those initially selected, 2 did not respond to any further communications, and 3 booked an interview appointment but did not attend. Therefore 5 further interviewees were later selected from the pool of potential interviewees, and in total 16 interviews were carried out.

2.3   Interview process

16 in-depth online interviews were carried out during April 2024, using the Discussion Guide shown in Appendix A. The interviews were carried out by three Partners of CAG Consultants. Interview length was typically 30-60 minutes per interview. Interviews were recorded for research and quality assurance purposes and auto-transcribed.

Post interview interviewees were sent a follow-up email including their voucher code plus information and links to resources and support relevant to their discussions. These included links to the Scottish Government Climate Action Hubs, SCCAN's website and the support section of the Climate Psychology Alliance website.

2.4   Analysis

Data from the interviews was analysed using CoLoop (a type of Computer Assisted Qualitative Data Analysis Software) and was coded and analysed ahead of report writing. Coding and analysis were conducted thematically, broadly in line with the research questions, with additional case-by-case analysis conducted to develop individual pen portraits of the participants.

2.5   Limitations

The study encountered several limitations identified during the initial commissioning phase and discussed with the client, Scottish Communities Climate Action Network.

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1. Sample size and generalisability: the study involved only 16 participants, resulting in a limited sample size. This limit constrains the generalisability of the findings to the wider Scottish population. Note, however, that it is quite common that qualitative studies of this nature will involve small sample sizes. This is because qualitative methodologies prioritise depth over breadth, focusing on gaining a rich, detailed understanding of complex phenomena through intensive analysis of particular cases, events, or perspectives.

2. Selection bias: the recruitment method, which involved outreach through SCCAN-affiliated organisations and forums had the potential to introduce selection bias. Individuals exposed to these communications may have stronger opinions or greater awareness of climate change than the average citizen, potentially resulting in an overrepresentation of specific viewpoints and the underrepresentation of others, particularly those from individuals less engaged or informed about climate change, or those sceptical about climate change.

However, in practice some interviewees had apparently little or no existing understanding or interest in climate change, which may provide useful insight into the views of a potentially large section of the population.

2.6   About qualitative research

Note that reporting of qualitative research involves a presentation of the different views and experiences of those interviewed. It does not aim to quantify the number of research participants who held particular views or had particular experiences, nor does it purport that the views of research participants are necessarily representative of those in the population. This is because "the purpose of qualitative research is not to measure prevalence, but to map range and diversity, and to explore and explain the links between different phenomena."[1]

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[1] Ritchie, J., Lewis, J., McNaughton Nicholls, C. and Ormstom, R., (2014), Qualitative Research Practice (2nd edition.). London: SAGE.

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3 Findings

This section provides an introduction to the interviewees who took part in the research, and then provides analysis of their responses, with quotations to illustrate points.

3.1 The interviewees

The interviewees spoken to came from a diverse range of locations and age groups. Their employment status, housing tenure and length of time resident in Scotland also varied widely.

Interviewees were not asked their age, however 2 volunteered that they were students and 1 volunteered that they were retired.

Interviewees were not asked about their nationality, but were asked about their connection to their local area. 9 volunteered that they had lived in the UK for more than 10 years, 5 for between 5 and 10 years, and 2 for less than 5 years.

6 interviewees described their local area as being urban in nature, 5 suburban or semi-urban and 5 rural or isolated.

9 interviewees volunteered information about their housing tenure, with 4 owning properties, 3 renting, 1 living with a relative and 1 living with friends.

Of those volunteering information about their employment status, work roles included: food retail, cleaning, care work, general office work, conservation charity, technician, maritime engineer and freelance dancer.

Pen portraits of each interviewee are included in Section 4.

3.1.1 Interviewee locations

Interviewees were asked about their current residential location. Interviewees were located across a large area of Scotland, however there was a lack of responses from anybody based on the west coast or islands. Approximate locations of interviewees are shown on the following map (note, some circles represent the location of 2 or more interviewees).

Figure 1, Interviewee locations
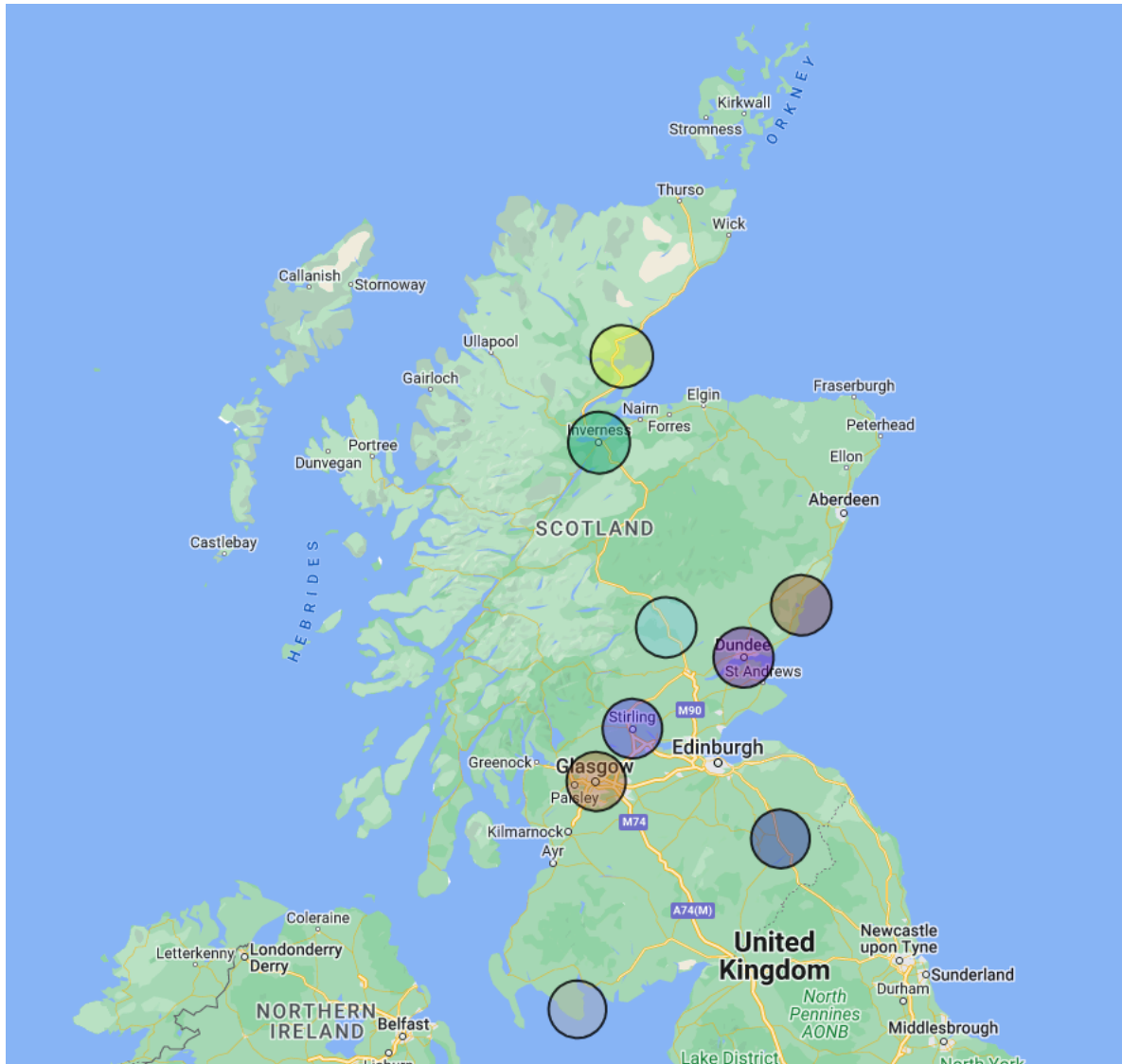
3.2   Local climate impacts

3.2.1   Observed changes in the local environment, weather patterns and seasons

While most participants observed changes in the local environment, weather patterns, or seasons over the years, there were variations in the extent and type of changes noticed, and not all participants reported major changes or had been in their area long enough to notice significant shifts.

The variation in responses suggested that while there was a general awareness among participants of changing environmental conditions, individual experiences and observations differed based on factors such as duration of residence in their area and personal engagement with local environmental issues.

Where participants *had* observed changes, however, their observations broadly fell into four categories.

- **Increased rainfall**: almost all participants noted an increase in the number of days with rainfall and the intensity of rainfall events. One participant related the rainfall now seen in Scotland to that they had encountered previously in a tropical climate.

  The rainfall patterns are different. ... It's more like the rain we used to experience in the Tropics ... The intensity of the rainfall is significant. (Participant 16)

- **Increased heat:** some participants noted increased levels of heat during the summer months and increased incidences of heatwaves in recent years.

  The excess heat ... like you go into a room and everything seems hot, like you have the day is hot and the night also is hot, like accumulated heat over the days, you know ... into the night. (Participant 3)

- **Erratic weather patterns**: the unpredictability of weather patterns was a common theme among respondents. One respondent, for example, pointed out that weather had become "*a lot more erratic*," with significant wind increases and rapid shifts from dry to drowned-out conditions. Another mentioned experiencing unexpected mild winters and relentless rain during typically dry periods.

- **Changes in seasons.** Shifts in seasonal patterns were frequently mentioned. One respondent, for example, observed that autumn seems to extend further into what used to be winter months, leading to unseasonably mild conditions followed by sudden cold snaps or heavy rainfall. Others had

encountered early blooming daffodils and apple harvests, and alterations to bees' activity.

We really started noticing it when we were keeping bees, usually you'd be opening hives up in April [but] the winter is dragging out. … The autumn seems to be starting earlier and has definitely got wetter. … The winter storms are hanging around for longer. (Participant 12)

3.2.2   Local climate change impacts

Beyond changes in the local environment, weather patterns and seasons, participants were asked whether they or people they know had observed resulting climate impacts on their local area.

Many of the participants shared experiences or observations of climate impacts either personally or locally, and were able to highlight a range of specific examples. These included:

- **Flooding of property and land:** flooding from rainfall was noted by many participants. Whilst no participants' residential properties had been directly flooded many were aware of flooding in their locality affecting properties, land and infrastructure.

I was performing in a theatre in the East End in September last year and they were experiencing flooding in the building. (Participant 13)

Some participants, particularly those resident in coastal areas, had noted incidences of coastal flooding increasing.

Just this last week the tide has overtopped the sea walls [in a couple of local coastal villages]. (Participant 12)

- **Transport infrastructure**: participants had experienced infrastructure challenges from such as roads becoming "*impassable*" for cyclists both directly due to flooding and later due to increased potholing from rainfall. Participants also mentioned incidences of rail transport being suspended.

There's been a good chunk of weekends here where it has been so much flooding that if you needed to work in other parts of Scotland it is very difficult. (Participant 13)
We've got a railway line here that literally runs pretty much right along the coast from here all the way up to Thurso. And, you know, that that would cut off the north of Scotland, and that's. I don't think that's too distant because with the last lot of storms in October, part of the line was impassable. (Participant 10)

- **Agricultural impacts:** climate change impacts on agriculture were noted, including:

    o changes in rainfall patterns affecting agricultural practices and planting schedules

    o wet conditions preventing farmers from working the land efficiently

We've never had it as wet. This area I play golf with, all my pals are farmers and they're pulling the hair out of them and they can't get anything on the ground, all because of these rains (Participant 5)

I know locally, our neighbouring farmer, you know, he's having to keep his cattle in more this time of year because the fields are so wet. (Participant 11)

- **Food supply impacts:** these were mentioned by one participant who highlighted vulnerability of road and rail networks.

The availability of fresh fruit and vegetables can drop when the roads are blocked in England, that's quite clear. (Participant 13)

While many participants highlighted local climate impacts, a few expressed uncertainty or lack of direct experience with these impacts. One participant, for example, mentioned that they had not encountered any specific impacts of climate change in their local area, while another felt that they did not like thinking or talking about it because it had a negative impact on their state of mind.

I just feel I do not need to worry about all of this because getting myself worked up brings up sad memories … I just don't like thinking or talking about it most times (Participant 14)

This suggests a variation in the extent to which individuals perceive or encounter climate change impacts directly. Some participants are more aware or affected by specific changes in their environment, while others may not recognise these changes as directly related to climate change or may not have experienced significant impacts first-hand. This diversity highlights the complex nature of how climate change is experienced at the community level across Scotland.

3.2.3   Local climate-related challenges

Participants identified a range of climate-related challenges and risks facing their local areas, highlighting the diversity of concerns across different communities. These challenges included:

- **Wildfires and heath fires:** one respondent, for example, mentioned the contradiction of experiencing both wet weather and heath fires in her area, emphasising the unpredictability and severity of wildfires during dry periods. Another highlighted the potential for peatland fires.

  There'll be lack of water, there'll be drought, there'll be fires. Especially if there's peat on the hillside. And we do have peat in the upland areas. So that's all climate change as well. It's just that flooding is the current issue. (Participant 16)

- **Flooding:** several participants pointed out flooding as a significant challenge. For example, one participant noted Glasgow's struggle with inadequate drainage systems during heavy rainfall, leading to flooding that can disrupt services and pose risks to communities.

  I'd say the biggest problem is raining. Think when we try these levels of flood and what happens is we are not at the scale whereby the drainage distance have been adjusted accordingly. So I think occasionally during the year, these things are bound to happen and you find flooding (Participant 6)

- **Increasing warmth:** participants highlighted the risk posed by increasing temperatures, especially in densely populated areas where it affects vulnerable populations like older people and children.

- **Coastal erosion and sea level rise:** several participants also raised concerns about coastal erosion and sea level rise predictions, stressing their potential impact on infrastructure such as railways and golf courses along the coast.

- **Extreme weather events:** related to this, the increasing frequency of extreme weather events like longer-lasting winter storms were highlighted, which lead to coastal flooding impacting low-lying villages.

- **Agricultural challenges:** concerns were expressed about excessive flooding and extreme heat affecting agricultural activities.

- **Health risks from poor ventilation:** one respondent mentioned health risks associated with poor ventilation in crowded areas during hot weather, emphasising the need for good ventilation and green spaces.

- **Displacement due to overflowing rivers:** worries were voiced about overflowing rivers due to changing rainfall patterns potentially displacing people from their homes.

I fear that heavy rainfall would chase people out of their homes. (Participant 1)

- **Vulnerability of economically disadvantaged groups:** concerns were raised about how economically disadvantaged groups are particularly vulnerable to climate change impacts due to historical disparities in housing locations and broader socioeconomic struggles.

  I think the poorest people are always more at risk because. You know the people who have the money, historically, have built the houses in the best locations. ... [But] the people that [are] most at risk and they're the people who have least, they're very resilient. They have to be resilient. There's only so much resilience. You're not an excess sponge. (Participant 16)

These insights reflect a broad spectrum of perceived climate-related challenges across Scotland, from natural disasters like wildfires and floods to socio-economic vulnerabilities exacerbated by climate change impacts.

3.3 Effect of climate change on planning for the future

3.3.1 Effect on participants' own planning for the future

Climate change did not affect all participants' planning for the future uniformly. While many participants expressed concerns about climate change and its impacts on their future decisions, such as housing, relocation, and lifestyle choices, there were others who did not view climate change as a crisis necessitating immediate changes to their personal or professional plans. This suggests a diversity of perceptions and responses among the participants regarding the impact of climate change on their future planning.

Many participants reported that climate change had affected their planning for the future in various ways:

- **Personal preparedness and relocation decisions:** some participants said they were considering moving to areas less prone to flooding due to concerns about future climate impacts.

  Presently I'm trying to move to an area where we have got no sea, we've got no bother, where I can live without this fear of being woken up to a flooding event (Participant 2)

- **Housing and living conditions:** participants said they were making decisions based on climate considerations, such as avoiding living in floodplains and seeking more connected living situations to reduce reliance on cars. One respondent had taken proactive measures to future-proof her home against

climate impacts through sustainable building practices, but noted the expense of doing so may be out of reach of most householders.

We were lucky we were in a position where we could do that, with good pensions. (Participant 12)

- **Community and work engagement:** another respondent shared concerns about her daughter's future in the face of climate change, leading her to engage in environmental initiatives at work and with community groups advocating for faster government action on climate issues.

For people like my daughter, who's only three, she's going to have to. Have to deal with it. And, I don't know, it's just like silly stuff like, will she be able to. Will she be able to go on holiday in Europe in the summertime, you know, when she's a teenager, or will it be too hot? You know, that kind of stuff? And, you know, how will they deal with things like floods, and boiling hot summers and all that kind of stuff, that, that concerns me a lot. (Participant 8)

- **Lifestyle choices and mitigation efforts:** one respondent highlighted the importance of having multiple modes of transport and access to food sources amidst climate-related uncertainties.

- **Mental health and anxiety:** participants expressed anxiety over climate change and frustration with governmental inaction, influencing thoughts about the long-term viability of their local areas.

Sometimes I get scared what if the weather would flood. … I try to keep that out of my mind, it is something I don't want to think about. (Participant 2)

- **Gardening and food growing practices:** one respondent is adapting her gardening practices by selecting fruit and vegetable varieties suitable for changing climates, considering growing more produce indoors due to wet conditions.

These responses illustrate a range of strategies individuals are adopting or considering in response to perceived threats from climate change, from altering living arrangements and building practices to engaging in community activism and adjusting daily lifestyle choices for resilience against future climatic uncertainties.

For a small number of participants, climate change did not affect their future plans. These participants exhibited a spectrum of attitudes ranging from complete disregard to cautious awareness, with none allowing it to substantially influence their long-term planning. Views included:

- dismissing the impact of climate change on future plans outright without giving detailed reasoning,

- regarding climate change as a manageable issue that can be managed without dictating major life decisions, and

- avoiding thinking about climate change to prevent the emotional distress associated the negative memories and feelings prompted by hearing about climate-related disasters on social media.

I think relatively there are factors that consider one relocating and changing one's location and I think right now climate change is one part I can manage myself. (Participant 3)

3.3.2   Participant views on the future of their community

A number of participants reported that climate concerns had significantly influenced their views on the future of their communities, reflecting a range of emotions from anxiety to proactive engagement and optimism for resilience-building efforts.

- Anxiety over specific community risks: some participants shared anxieties over specific local climate impact risks such as coastal erosion threatening farmland and infrastructure, or wildfires affecting the local area due to its woodland surroundings, emphasising the need for recognition of these risks and planning for resilience.

  I think we're just left to our own devices really ... It really feels like you are dealing with it alone. (Participant 13)

  I know people who have decided not to have kids because they're worried about. Worried about the climate future, so. Which is. I don't know. It's not something I ever seriously considered, but, you know, it's definitely a worry. (Participant 8)
- Perceived lack of engagement: some participants noted a perceived lack of engagement with environmental issues within their communities. This perception was attributed to people feeling overwhelmed by the scale of the problem or prioritising immediate concerns such as work and family.

- Optimism based on mitigation measures: another view was more optimistic due to existing mitigation measures but acknowledged the need for preparedness against unexpected events.

We've got all sorts of future proofing projects going on there now. (Participant 12)

For now they're good but these things just have a way of happening. (Participant 2)

3.4   Community preparedness and response to climate-related crises

3.4.1   Participants' views on the ease with which communities come together in a crisis

There were varied perceptions about how easy it is for communities to come together in a time of crisis.

A large number of participants observed strong community unity and support, especially during significant events like the COVID pandemic, where local initiatives and social media platforms played a crucial role in rallying support. The role of local councils, community centres, and not-for-profit organisations were highlighted as important in facilitating or inspiring community unification during crises. Communities with more enduring, permanent populations and established networks were highlighted as supporting cohesiveness.

> *During COVID a local group was set up pretty quickly to make sure that people had what they needed. People do help each other out. There's a very well settled local community here that have lived here forever with the large extended family groups and everyone knows each other. (Participant 12)*

Many participants were able to offer examples of their communities coming together. These were often centred around the COVID pandemic, but there were others too. Individuals, businesses, community groups, charities, public agencies and governmental bodies were all highlighted in these examples.

> *One of the local business leaders set up a Facebook page, called it something like Clacks Together, and said, right, guys, we're all in this together. Give us a shout if you need a hand. (Participant 16)*

Other participants expressed uncertainty or scepticism about their community's readiness and effectiveness in coming together for crisis management, pointing out the lack of a cohesive network for crisis response similar to other countries. They highlighted challenges in community cohesion due to factors like selfish attitudes, transient populations, and the presence of second homes, which impact the consistency of community response.

> *It's quite a transient population in Montrose. There's a lot of old Montroseans there; they're pretty belligerent at the best of times. But there's a lot of people that work in*

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the oil business, work for GSK, and so they're travelling. The geography for them is not Montrose, they could be anywhere in the world. (Participant 5)

3.4.2 Participant views about who would respond in the event of a climate-related crisis or emergency

A number of participants felt they had a clear understanding of the agencies, organisations, and community groups that could offer assistance in the event of a climate-related emergency of crisis.

Those participants identified a range of agencies, organisations, and groups they believe would help if there was a climate-related crisis or emergency. The responses indicated a perception among participants that both formal institutions (like local councils and specialised agencies) and informal community networks play critical roles in responding to climate-related crises and emergencies in Scotland. Organisations and groups highlighted included:

- **Local authorities and councils:** many participants felt that local authorities or councils would be the first to respond in such situations, although there were also concerns about the effectiveness of council responses due to budget constraints and prioritisation issues.

  It would probably have to be the council ... but again, I always get the impression that council budgets are so cut at the moment that it's not, like, top of their list. (Participant 8)

- **Community groups and grassroots organisations:** several participants highlighted the importance of community groups and grassroots organisations in responding to climate crises. This included local resilience groups set up by communities with resources for crises (e.g. cooking facilities, blankets), as well as charity organisations and not-for-profit organizations focused on emergency support. Individual views about local preparedness levels appeared to influence expectations around the role of community groups and grassroots organisation as first responders. One respondent also felt that not-for-profit organisations and groups might be better placed because they would not be hindered by bureaucracy compared to government responses.

- **Specialised services:**

  o   in cases of wildfires or other fire-related emergencies, the fire service was seen as a key responder,

- one participant believed that in their area, due to the lack of other large organisations capable of responding, the military would be a primary responder,

- for specific types of emergencies like floods affecting infrastructure, utility companies were mentioned as potential responders, and

- for coastal emergencies, the coast guard was highlighted as an important agency.

- **Individuals within the community:** beyond formal organisations, individuals within communities were also seen as crucial responders. This included neighbours helping each other out directly or through informal networks.

However, not all participants felt that they or their community would know who would respond. For instance, one participant, due to her professional background, said she knew whom to contact but was uncertain if the general public shared this knowledge.

Well, I now know who to contact. How did you find out as a resident? I'm not sure I would know that. (Participant 16)

Indeed, other participants expressed uncertainty about who would be the first responders or admitted to a lack of knowledge on this matter.

I haven't got a clue, but I assume there's some sort of environment agency that would have some involvement. But I don't know, honestly. (Participant 10)

3.4.3 Role of community in a climate-related crisis

Generally, participants felt that the local community would play a significant role in responding to climate-related crises or emergencies. Views highlighted two main ways in which participants felt that local communities would play a role:

- **Community coordination and support:** some participants noted that local leaders often take initiative to coordinate support, such as setting up communication platforms (e.g., Facebook groups) to distribute aid and resources effectively within the community. One participant pointed out that local community groups are often proactive and may already have plans in place for responding to emergencies.

I think some of the local community groups that are currently quite clued up. I feel hopeful that they would have plans in place to sort of step in. (Participant 10)

- **Organising mutual aid:** one participant highlighted how communities can quickly organise mutual aid groups to ensure that all members have access to necessary resources, drawing parallels with her local community's response to other global events like the Indian Ocean tsunami.

  Must be about two or three years after we moved here, there was a tsunami in the Indian Ocean. They very quickly put together an event to raise money to send. Just the whole town just pulled together and raised 5000 pounds in one evening. (Participant 12)

3.4.4 Participants' views of local community preparedness

Participants shared varied views on their local communities' readiness to face such challenges, highlighting both strengths and areas needing improvement. while there were examples of strong community response mechanisms in place for dealing with specific crises (e.g., snowstorms or floods), participants also highlighted significant gaps in overall preparedness for broader climate-related emergencies.

Some participants felt their communities were somewhat prepared, highlighting a number of strengths:

- **Solidarity and mutual aid:** some participants highlighted instances where communities rallied together during crises, such as severe snowstorms, demonstrating solidarity and mutual aid. This indicates a level of preparedness rooted in community cohesion and willingness to support vulnerable residents.

- **Proactive measures:** one participant shared examples of proactive community support during crises, including flood resilience initiatives. Such efforts indicate pockets of high preparedness and collaborative response strategies within communities.

  They've got a flood resilience group that's very active. They know how to put up flood barriers to protect homes of the most vulnerable, or at least give them time to evacuate safely. They do drills and are covered under council insurance as long as certain criteria are met. (Participant 16)

- **Awareness and preparedness programmes:** some participants mentioned receiving disaster preparedness information through programmes and having access to neighbourhood emergency plans, indicating a level of awareness and preparedness within their communities.

However, there was also a sense of uncertainty about official preparations and a perceived gap in widespread engagement with resilience activities.

- **Lack of comprehensive local preparation:** despite individual efforts towards preparedness, several participants expressed uncertainty about the specific preparations undertaken by local authorities for climate emergencies.

  I'm not aware of any particular preparations that my local authority have done for a climate emergency. And I'm sure the local people here would engage with it if they had to, but I'm not aware of any specific steps that would have to be taken. (Participant 8)

- **Uncertainty about emergency response:** as highlighted in section 3.4.2, questions about who would be first to respond in a crisis revealed uncertainty about who would respond and how if their community faced a climate-related emergency.

Maybe it's community. Maybe it's faith buildings, you know, safe spaces that provide a community base. I wouldn't be rushing to the Council. I don't think. I don't think council offices are right. They are perceived as shutting everything and they're not very front facing. People don't necessarily have a good relationship with the Council. So I think local charity / community centres are probably the way forward and you need to have a few scattered across the neighbourhood. (Participant 16)

- **Limited engagement with climate issues:** a participant noted that while people might come together in a crisis, there is currently limited engagement with ongoing climate-related concerns due to perceptions of these issues as distant or abstract.

  I don't get much sense of people engaging with it at this stage because I think for a lot of people it seems like such a far off thing and it's so abstract in their life that they don't really feel they can do anything productive. (Participant 8)

- **Need for increased awareness:** several participants expressed concerns about the general lack of awareness regarding climate change impacts and preparedness strategies among their communities. There was a perceived need for more information dissemination and education on how individuals can contribute to resilience.

  I think we need to talk about adaptation rather than anything else. It's all gonna hit us. (Participant 16)

3.4.5 Extent to which participants felt informed about what to do or who to contact in case of a climate-related crisis

The participants' feelings of being informed about what to do or who to contact in case of a climate-related crisis varied significantly. Some participants expressed confidence and awareness of the necessary actions and contact, although not all of those who did could name specific agencies or avenues for accessing help.

> *I can say for all, for myself, I would say I am informed here, I can call for help, I can reach out to emergency line and all of that. (Participant 14)*

However, other participants indicated a lack of information or preparedness. Several participants admitted to not being well-informed about local agencies or authorities to contact during a climate-related crisis.

> *I don't know where I would go first or who I would phone first. (Participant 7)*

One participant contrasted her experience in Scotland to the much more proactive approach she witnessed when she lived in Australia.

> *I am unaware, and I say that because in Australia, they give you the things through the letterbox and they tell you to design your bushfire plan, you know, to put the radio on, you know, you're going to get updates, you know, you're going to get a text message if something's going to go down. I'm not aware of any of those things here. (Participant 13)*

Overall, while some individuals felt prepared and informed, there appeared to be a significant portion of the community that lacked clear information on how to respond effectively to climate-related emergencies. This suggests a need for enhanced communication and education efforts regarding emergency preparedness within these communities.

3.5 Enhancing local community climate resilience

3.5.1 Actions and measures to enhance local area climate resilience

Participants suggested various actions and measures to enhance local resilience to future climate events. The insights gathered reflect a combination of community-driven initiatives, infrastructural improvements, educational efforts, and enhanced communication strategies.

Key actions and measures suggested by participants included:

- **Local coordination:** one participant proposed the creation of community councils with a focus on coordinating resilience efforts locally, coupled with public engagement sessions to disseminate knowledge about climate challenges.

  Having a community council would be good as a first point of call … who could organise and liaise with the local fire station and the community groups that are around, rather than it being lots of little groups doing lots of things. (Participant 11)

- **Strategic support systems:** another advocated for a comprehensive set of local support services to help people adapt, to provide them with the tools to make themselves and their communities more resilient, for example by combining climate resilience education (e.g. through schools, adult services and the NHS), with support for practical measures (e.g. rolling our water storage devices) including water management, support networks, and educational programs at all levels to empower individuals against climate challenges.

  From a more positive point of view, if we could talk about having communities where we all adapt and that as a community, people get support rather than this just, well, 'that's your problem because your house got flooded.' (Participant 16)

- **Community involvement and grassroots initiatives:** more generally, participants stressed the importance of grassroots movements and active community involvement, and suggested that local residents should take ownership of initiatives aimed at enhancing climate resilience.

- **Infrastructure improvements:** a number of participants called for improved infrastructure, such as robust flood defences to address climate-related risks.

- **Education and awareness:** several participants highlighted the need for greater climate awareness education. One participant, for example, called for increased education on how to prepare for specific climate events such as floods and heatwaves. There were also suggestions for area-specific education initiatives (e.g. making people aware of the dangers of cliffs where coastal erosion is an issues), and for informing residents about their role in fostering a more climate-resilient community.

  I'd also say we can create awareness, make more people know, take it to workplaces, flyers at the city centres and all of that. Try and make people know, okay, this is how you can help. (Participant 14)

These suggestions reflect a broad range of approaches from infrastructure development to community-led initiatives aimed at enhancing resilience against future climate events in Scotland.

3.5.2   Barriers to enhancing local area climate resilience

Participants identified several key barriers to implementing actions and measures for enhancing local resilience to future climate events. These included:

- **Funding constraints:** the availability of funds needed to create awareness and implement resilience measures.

- **Lack of community engagement:** difficulties in engaging the communities about the risks associated with climate events.

- **Inadequate infrastructure:** physical infrastructure issues such as poor road conditions which hinder effective response and recovery during climate events and the need for better facilities like food hubs during emergencies.

- **Communication gaps:** a lack of robust communication systems was mentioned by several participants, such as concerns about reaching people if internet services fail, especially since few have landlines today.

  I also am aware that if the Internet goes down and so few people have landlines, how on earth do we get in touch with one another? (Participant 13)

- **Delayed governmental response:** experiences where local councils delayed action or provided insufficient support for community-led resilience initiatives, leading to frustration and despondency among volunteers.

- **Social inequities:** a concern that vulnerable populations often have the least capacity to adapt or respond effectively to climate impacts due to socio-economic constraints.

- **Awareness and education gaps:** a recurring theme across many responses was the need for more widespread awareness and education on how individuals and communities can prepare for and respond to climate events.

The barriers identified by participants encompassed a range of financial, social, infrastructural, and governmental challenges that hinder effective implementation of resilience measures.

3.5.3 Expectations of who should lead climate resilience activity

Participants suggested a range of actors should be expected to lead climate resilience activity. The responses again indicated a perception among participants that both formal institutions (like local councils and specialised agencies) and informal community leaders play critical roles.

The majority of participants felt that collaborative action involving various stakeholders (such as community groups, local councils, and higher governmental levels) would be necessary to engage the entire community in awareness campaigns and activity. This collaboration was thought by some to be key to understanding local issues and making effective plans. Potential leads identified were:

- **Community and individuals:** the role of community members and individuals in spearheading climate resilience efforts was emphasised by many participants. Local volunteers and community members, including those from local churches, are trusted to actively lead climate resilience efforts due to their local knowledge and trustworthiness. Grassroots level action was highlighted as the starting point for effective climate resilience initiatives, with a focus on building relationships between community groups and supporting organizations.

    I would trust someone from a local church, someone from across the street, someone down the street to come and speak to me. So I feel that would be much better. (Participant 3)

    I think all action has to start at grassroots level, then you have to build relationships between community groups. (Participant 12)

- **Local government:** the responsibility of local councils and elected representatives in leading climate resilience activities was highlighted. Participants expected local councils to be proactive in communicating climate risks and emergency plans, including distributing flyers and holding community meetings. Some participants were aware of specific local elected representatives, such as MSPs, who were actively engaged in climate issues, and were viewed as positive examples of leadership. There was also a call for consistent leadership despite potential changes in political figures.

- **Central government:** the Scottish Government's role in providing resources, direction, and overarching leadership for climate resilience was mentioned by relatively few participants, but those that did highlight it as having a leading role saw a need for resources and direction from the Scottish Government to ensure consistency and effective implementation across communities.

- **Others:** housing associations, charity groups and not-for-profit organizations were also mentioned as potential leaders of local climate resilience activity. These organizations were seen as prioritizing community support and capable of providing swift and effective local responses compared to government agencies.

3.5.4 Participants' views on role for themselves and the community

Some participants strongly advocated for a community-driven approach, emphasizing collaboration among community groups, stakeholders, and official bodies for effective climate resilience Examples given of known collective efforts to increase local resilience included provision of temporary shelters, sharing resources during crises, and leveraging collective influence to engage with authorities for action.

Suggestions for future community activity fell into two main themes:

- **Community education and awareness:** participants felt the community had a key role to play in raising awareness and educating others on climate change impacts and resilience measures. Suggestions given included churches and local leaders playing a pivotal role in educating the community through bulletins, displays, and activities such as distributing flyers and holding community meetings to inform and discuss emergency plans.

- **Infrastructure and environmental management:** improving local infrastructure and environmental practices were also seen as key community level strategies for climate resilience. Participants talked about local responsibilities to manage land and water resources, including unclogging drains, maintaining river banks, and planting trees to mitigate climate impacts.

Participants often had a less clear idea of specific roles or activities for themselves.

Some saw their role as raising awareness through joining community level awareness raising campaigns. The use of online platforms, including personal social media sharing to educate and raise awareness about climate change was emphasised.

Participants generally believed in taking proactive measures individually, such as participating in sustainability activities, local food growing, and reducing waste and were willing to join volunteer groups for environmental improvement activities, such as cleaning rivers and planting green areas

I would like to be part of the people who can bring about a change. (Participant 2)

Like an active member. I wouldn't want to say any of the you know leadership roles, but I would say an active member. (Participant 4)

Those participants who did have specific roles for themselves in mind gave examples such as delivering performing arts initiatives around climate anxiety to raise awareness and address climate-related issues, and growing more local food.

I certainly think there's a, there's a mandate to grow food in communities. A lot of land up here is designated rough grazing, so it's not suitable for crops. But I think on a small scale, you know, we could be fairly self-sufficient up here in a lot of things. You know, a lot of crop in communities. (Participant 10)

3.6   Good practice

3.6.1   Examples of climate resilience good practice that participants were aware of

Not all participants were able to provide examples of climate resilience good practice that they were aware of, and some conflated climate resilience with mitigation. Those who did highlight specific examples cited a diverse range of initiatives, from both Scotland and abroad.

Scottish examples included:

- Local food growing and horticulture projects.

- Kyle of Sutherland community trust as an example of good practice in building climate resilience,

- A writers group that protested outside the Scottish Parliament and engaged with MSPs to discuss the climate plan for Scotland, showing dedication and activism in climate action,

- The Sustainable Food Partnership in Dumfries and Galloway's efforts to support regenerative farming and gardening, highlighting the importance of focusing on soil for climate resilience.

- A community in Milngavie that faced flooding and took proactive steps to enhance resilience by installing flood mechanisms like floodgates and sandbags, and later collectively brainstormed ways to mitigate future flooding by planting trees upstream, showcasing a community-driven approach to resilience building

Some areas in the Hillfoots villages have had bad flooding in the past. As a result, each village has a flood resilience group. The active ones know how to put up flood barriers to

help protect homes of the most vulnerable or at least give them time to evacuate safely. They do drills and are covered under council insurance as long as certain agreed criteria are met. And they've got a place where they can go for safety too. (Participant 16)

In like Aberdeenshire they are upper catchments, they've been planting loads and loads of trees on like the River Dee and it's that whole it's that whole thing about slowing the flow. So it's just holding the water back so that it reduces the speed at which it reaches downstream. (Participant 7)

International examples given included:

- In one participant's work, they explored sustainable practices from the Netherlands, such as using canals for transportation, installing bird nesting boxes, and rooftop gardens, as inspiration for making Scottish buildings more efficient and sustainable.

- Another participant raised the issue of providing powers to individuals and governments to address climate emergencies effectively, drawing a parallel with actions taken in Canada to protect homeless individuals during extreme cold weather, emphasizing the importance of proactive measures to ensure community safety during climate crises.

- As noted previously in section 3.4.5 parallels were drawn by one participant with community preparedness initiatives in Australia.

In Australia they give you the things through the letter box and they tell you to make your bushfire plans and they tell you to put the radio on and you know you are going to get updates, and you know you are going to get a text message if something's going to go down. ... Before the summer you get information on what to do in a bushfire, and encouragement to make a plan. There are also apps you can get on your phone and text messages ... There were situations during Black Summer when power went down and people relied on [car] radio ... Detailed and local, that's really important in terms of information given out. (Participant 13)

3.7 Information sources on climate change

3.7.1 Sources of information

Participants cited a variety of sources to get their information about climate change. Key sources mentioned were:

- **Online platforms and websites:** many participants turn to the internet for information, with specific mentions of using general online searches, community groups on Facebook and Reddit, and organisation websites for detailed insights.

  I get a lot of information from Facebook, from Reddit and all of that. (Participant 2)

- **Local government and agency websites:** using the websites of council websites - including climate action hubs and networks - and agencies like SEPA.

- **Grassroots organisations and initiatives:** local climate action hubs and sustainable food partnership initiatives were highlighted as useful and locally-relevant sources of information.

- **Official reports and research publications:** some participants highlighted a preference for reading official reports from the government and research reports from universities, utilising online platforms to access these documents for factual information.

  Social media is awash with a lot of details or information and whatever, but I have always accepted, you know, that to get information you need to read official reports. (Participant 6)

- **Social media:** social media was mentioned as a source of information, although there was an emphasis on filtering through the content for accuracy.

  Social media is a double-edged sword, but I follow several environmental groups on Instagram and Twitter. They often share useful information and tips on how to be more eco-friendly (Participant 3)

- **Media and public figures:** public figures like David Attenborough and media outlets were regarded as playing a significant role in disseminating information about climate change to the general public.

These sources reflect a mix of digital and community-based channels through which participants gather information on climate change impacts and responses in Scotland.

3.7.2 Accessing climate change information

Participants shared varied perspectives on the accessibility of information about climate change, highlighting both challenges and effective strategies for obtaining relevant data. While some participants feel well-informed and aware of where to find reliable data, others point out gaps in accessibility and timeliness or express concerns about public engagement and awareness levels.

Experiences and insights included:

- the importance of discerning reliable information amidst a sea of available data,

- issues with the timeliness and reliability of information sources,

- a view that information can be fragmented and sometimes lacking in depth or detail,

  It is that one stop shop thing, though, isn't it? Because I think there's lots of different areas where I would know to get information on climate change... But yes, I do know where I would go to get information on climate change and the physical impacts. (Participant 7)

- a societal challenge regarding motivation to seek out climate change information, and

  While the internet provides access to information, the challenge lies in whether people locally are motivated to seek out information on climate change. (Participant 11)

- generational disparities in access to online information.

So I do think there's a generational thing, and I think that's getting more and more acute. And I think there's a generation of very vulnerable older people, of which my Mum is one, who's getting missed out because everyone goes, oh, yeah, just use a smartphone. (Participant 16)

4   Participant pen portraits

The interviewees spoken to came from a diverse range of locations and age groups. Their employment status, housing tenure and length of time resident in Scotland also varied widely. This section provides an overview of each.

4.1.1   Participant 1

Living in a village in the Borders for almost three years, Participant 1 describes her surroundings as primarily rural with proximity to farmland. She works at a local store and sometimes tend to flowers at a relative's place.

She expresses concern for specific groups within her community that might be particularly vulnerable to climate change impacts, such as farmers and those living near water bodies or ridges. She highlights the importance of community responsibility in addressing issues like drainage improvement to mitigate these impacts.

Communication within the community about climate change is a topic she touches upon, mentioning discussions with friends who have a keen interest in the subject. However, she also points out barriers to effective action against climate change, such as a lack of awareness among some people and challenges in mobilising community efforts.

She believes that everyone in the community should be concerned about climate change because its effects are widespread and can impact everyone. She advocates for spreading awareness about the effects of climate change and engaging in activities that reduce its impact on the community.

In terms of personal actions, Participant 1 expresses a desire to participate more actively in reducing waste and littering around her area.

4.1.2   Participant 2

Living in Dundee for five years after moving from Glasgow, Participant 2 describes her locality as "quite okay," experiencing typical weather variations that Scotland is known for—ranging from very cold to warm periods.

She expresses a general concern about climate impacts, particularly flooding due to proximity to water bodies, although she has not experienced such events first-hand. Her fear of potential flooding influences personal decisions, including considerations about moving to areas less prone to such risks and making housing choices with future climate impacts in mind.

When discussing community preparedness for climate-related emergencies, she feels that her local community is somewhat prepared but emphasises the need for improved

communication channels and timely updates on weather forecasts to enhance resilience. She believes that everyone should be involved in addressing climate change but sees the council as playing a leading role in driving resilience efforts within communities.

Her personal actions towards climate resilience include adhering to recommended measures and participating in community efforts. She also highlights the importance of renewable energy as a significant step towards mitigating climate change impacts globally and locally.

For information on climate change, she turns to online platforms like Facebook and Reddit, though she notes these sources may not always provide localised information relevant to Scotland specifically. Despite this reliance on digital platforms for information, she acknowledges gaps in her knowledge about specific actions or contacts for emergency situations related to climate change.

4.1.3 Participant 3

Participant 3 resides in a Highland village, which he describes as an eventful place where he has lived since childhood. He appreciates the environment, friendly people, trees, islands, castles, and the historical significance of the area. His connection to the village is deep-rooted and he expresses a strong attachment to the locality and its community.

He acknowledges the importance of climate change awareness and believes in community efforts to address it. He mentions that local events like jamborees are opportunities for people to come together and discuss various issues, including climate change. He highlights the existence of a resource centre and a disaster council in his area that can provide assistance during climate-related emergencies.

He also points out that there are volunteers within the Highland Council of his area who work to inform others about climate change. This indicates an awareness of local initiatives aimed at enhancing understanding and resilience against climate impacts.

When discussing community preparedness for future climate change problems, he expresses a cautious optimism. He feels somewhat prepared but recognises that one cannot be entirely ready for all aspects of climate change.

He believes that education and communication campaigns should not be solely led by organisations but rather involve dedicated individuals from within the community who volunteer their time. He trusts information coming from known local figures more than external government agencies.

4.1.4   Participant 4

Participant 4 lives in a town in Fife, which she describes as a suburban area, situated near a port and close to a river at the end of the town. She mentions that there are houses around her, indicating a residential setting.

She has observed changes in rainfall patterns, noting an increase during certain times of the year. She also mentions concerns about flooding in her area if it is not properly managed, suggesting that this could result in more areas being flooded.

She believes creating awareness through campaigns or other means to get more people involved is crucial for enhancing resilience to climate change, but identifies challenges such as encouraging active participation among community members

While she does not provide extensive details on her personal stance towards climate change, her emphasis on awareness and involvement suggests she recognises its significance and the need for community action. She expresses a willingness to contribute to community efforts without necessarily leading them.

4.1.5   Participant 5

Participant 5 resides on top of a cliff in Angus, which shields him from flooding issues. His background is in engineering, and he has lived near Montrose since 2013, engaging particularly with the local golf club and local coastal action groups due to his expertise. He has observed significant erosion and flooding in the area, attributing these issues to climate change impacts such as storms and sea level rise. He expresses concerns about the future of the golf course and local homes if coastal defences are not improved.

He highlights a lack of public engagement and awareness regarding climate change within his age group – he is of retirement age - noting scepticism among his peers while observing that younger people might take a more active interest due to their longer expected lifespans. He criticises the fragmented nature of climate change initiatives and stresses the need for better coordination among groups to address climate challenges effectively.

Regarding community preparedness for climate-related crises, he mentions that there's no specific plan in place for events like storm surges or heavy rainfall leading to flooding. He suggests that public education and awareness are crucial for enhancing community resilience, proposing measures such as distributing flyers and organising community meetings to emphasize risks and emergency response plans.

He also points out the role of media in educating the public about climate change impacts and motivating action. He believes that presenting information compellingly can lead to greater involvement from the public.

In case of a crisis affecting local homes and businesses in Montrose, he mentions that the military, fire brigade, coast guard, and possibly the police would be involved in responding due to their proximity and capabilities.

4.1.6   Participant 6
Participant 6 has lived in Glasgow for eight years. He describes Glasgow as a densely populated city but appreciates its organised manner despite the population challenges. He has observed variable weather patterns over his years in Glasgow, noting summers becoming hotter and winters colder. This variability also extends to erratic weather, indicating a shift from historical norms.

He specifically identifies rain and flooding as significant challenges for Glasgow, attributing infrastructure struggles to extreme rain events. He recounts personal experiences through his work as a technician repairing damage caused by such weather extremes, highlighting the impact on local infrastructure and community needs.

He expresses a sense of urgency regarding action against climate change, motivated by witnessing environmental destruction and disorder within Glasgow. He believes that climate change is a global issue requiring international cooperation but also emphasises local actions like improving infrastructure and disaster management systems.

His approach to resilience involves both individual preparedness - such as informing 'associates' in emergencies - and community-level strategies. Despite recognising the importance of collective action, he notes challenges in mobilising community response due to perceived selfishness among individuals. He advocates for choosing leaders who prioritise community progress and supporting organisations working towards public good.

When seeking information on climate change impacts, he prefers official reports from government or research institutions over social media to avoid misinformation. He feels uninformed about specific contacts for emergency situations beyond general knowledge of contacting police or charity groups.

4.1.7   Participant 7
Participant 7 resides in a small hamlet in Perthshire. This area is described as rural and scenic, a small community. Her connection to her local area stems from moving there due to her partner's relocation; she has lived there for seven years and appreciates the locality despite not originally having Perthshire on her radar.

Her views on climate change are informed by her professional role. She expresses concern over climate change impacts, particularly highlighting flooding as a significant challenge facing her area. She notes that flooding is likely to worsen due to inadequate management of upper catchments which fail to retain water effectively.

She believes that the Scottish Government should lead climate resilience activities, providing resources down through local councils to ensure uniformity and effectiveness across different regions. She emphasises the importance of community action in addressing climate issues but also points out the barriers people face due to assumptions about universal internet access, which can exclude those without connectivity or digital literacy.

She mentions examples of good practice in making communities more resilient to climate change, such as climate cafes that raise awareness and foster community engagement around local actions for adaptation. Additionally, she highlights successful local initiatives flood action groups as models for effective community-led environmental stewardship.

4.1.8   Participant 8

Participant 8 a resident of a suburb in East Dunbartonshire, several miles outside Glasgow city centre. She lives in a semi-detached house in a cul-de-sac and describes her local area as a classic suburb known for its tranquillity, greenery, and quality schools, which was the primary reason for her family's relocation. The area is close to the Campsie Hills, providing a countryside ambiance while being near Glasgow.

She expresses deep concerns about climate change, particularly regarding its impact on her daughter's future. She has been engaged with environmental issues from a young age, influenced by her mother's interest in the topic. She actively participates in raising awareness of environmental issues within her workplace through initiatives like arranging clothes swaps and attempting to implement carbon accounting.

She observes more extreme weather patterns over recent years, including lower winter temperatures and hotter summers that have led to increased flooding near rivers and agricultural land around her local area. She notes that houses in Scotland are not well-suited for very hot weather or equipped to deal with such climate extremes.

Regarding community action on climate change, she feels there is limited engagement with environmental issues among her neighbours due to perceived time constraints and uncertainty about how to address such a vast problem. However, she acknowledges pockets of community involvement focused on sustainability and preserving local nature reserves.

She believes that local councils and elected representatives should lead climate resilience activities but also emphasises the importance of community pressure on these officials for faster action against climate change. She admires grassroots efforts like protests at the Scottish Parliament for climate plans and initiatives by organisations like the Alex Honnold Foundation for their work on installing solar panels globally.

4.1.9   Participant 9

Participant 9 resides in Glasgow, Scotland. He has lived there virtually all his life and describes his local area as an urban environment that is somewhat crowded but also contains nature areas like parks with trees and flowers. He expresses a deep connection to nature, finding relaxation and a sense of freedom when around natural environments.

Regarding climate change, he has observed changes in weather patterns over the years, experiencing varying temperatures that sometimes require adjustments to daily routines. He highlights the risk of increasing warmth in the atmosphere, particularly its potential impact on vulnerable populations such as older adults and children. To combat these effects locally, he has taken personal actions such as planting trees and flowers around his home to enhance greenery and improve air quality.

He believes in the community's ability to come together during crises, including climate-related emergencies. He suggests that while 'appropriate authorities' are expected to respond to such situations, there is also a role for community members to play by following advice from knowledgeable individuals about climate change.

His views on making things better for himself and his community revolve around raising awareness about climate change and taking personal responsibility where possible.

4.1.10   Participant 10

Living in Sutherland, participant 10 describes her environment as one that has transitioned from being a traditional fishing village to facing modern challenges such as proposed development projects that threaten local natural reserves. Her background includes living on a farm before moving to Sutherland, where she has become actively involved in local sustainability efforts.

She notes erratic weather patterns, including increased windiness and storm seasons that were not as prevalent before. She mentions the challenges of farming under these conditions, with soil erosion due to poor quality from non-organic farming practices and flooding issues necessitating drainage solutions.

She expresses concern over the general lack of preparedness within her community for climate-related events. Despite this, she acknowledges active community groups like Transition Black Isle and Planet Sutherland focusing on climate crisis responses.

As an advocate for sustainable food production, she discusses initiatives to find locally adaptable wheat varieties for more nutritious bread, contrasting with supermarket offerings reliant on imported flour. Her views are shaped by witnessing first-hand the impacts of climate change on her surroundings, including coastal erosion risks exacerbated by storms and sea-level rise.

She voices anxiety over future prospects due to climate change and frustration with governmental inaction, and highlights the importance of local action in the face of insufficient government response.

4.1.11 Participant 11

Participant 11 lives in rural southwest Scotland, just outside of a town in Galloway, Dumfries and Galloway. She moved there about five years ago from northern England with her partner, seeking a better life with an old farmhouse, an old farm steading, and five acres of land to grow their own food and live rurally. She describes her local area as very windy, wet, and "very farmy," indicating its strong agricultural character.

She observes that while they are coastal and storms do occur along the coast leading to flooding in places, it's not as severe as flooding experienced elsewhere, such as the city where she used to live.

She believes that if there were a climate-related crisis or emergency, local people and community groups would be the first responders rather than large organisations or councils due to the area being very big, diverse, and somewhat forgotten. She mentions efforts during COVID-19 where community groups pulled together for mutual aid which she sees as indicative of how her community might respond to climate crises.

She expresses a belief that everyone can do better regarding climate action and emphasises the importance of local involvement in decision-making for it to be more efficient. Her personal engagement with climate action includes setting up local crop swap events and seed sharing initiatives. Despite recognising various environmental challenges like pollution and rubbish contributing to negative changes in climate conditions, she maintains an optimistic view on community resilience and adaptation strategies.

4.1.12 Participant 12

Participant 12 lives in Dumfries and Galloway. She retired 21 years ago and moved to a rural area where she and her partner transformed a derelict industrial property into an

eco-friendly home with an orchard and garden. This transformation was part of their broader commitment to environmental sustainability.

She describes her local area as rural, bordered by the Irish Sea to the south, with two bays on either side and the Galloway Hills to the north. The region is primarily agricultural, with most farmland used for pasture. However, there has been a recent increase in smallholdings focusing on vegetable production. Participant 12 herself has faced challenges due to climate impacts, such as being unable to garden due to excessively wet conditions.

She recounts a significant weather event in 2013 when southwest Scotland experienced severe blizzards that disrupted power for days and highlighted vulnerabilities in local infrastructure. This experience underscores her concern about climate change impacts and the need for community resilience.

She emphasises grassroots action for climate resilience, working alongside well-resourced organisations but insisting that initiatives start at the community level. She mentions collaboration with organisations like local sustainability initiatives, indicating a networked approach to addressing climate issues.

Her views on climate change are informed by noticeable changes in weather patterns over her two decades in the area, including shifts in seasons and increased frequency of extreme weather events. She advocates for sustainable food systems as a critical component of climate action, highlighting efforts to support local growers through food hubs that distribute locally produced food within communities.

4.1.13 Participant 13

Participant 13 is a freelance performance artist based in Glasgow, Scotland, where she has lived for 14 years. She describes her local area as experiencing significantly more rainfall than when she first moved there, noting particular issues with flooding that have impacted roads and cycling routes. She expresses concerns about climate change impacts on her community, including the increased frequency of flooding and its effects on local infrastructure such as theatres and community assets.

She believes that the Scottish Government should take the lead in driving climate resilience activities but also highlights the role of housing associations in supporting their communities, especially those on low incomes who are part of such schemes. She points out a lack of support for people living in housing associations despite their vulnerability to climate impacts due to financial constraints.

In terms of personal action towards climate resilience, she is actively involved in addressing climate anxiety through dance and music workshops. She lobbies arts

organisations to adopt greener practices and encourages shifts away from banks that do not support environmental sustainability. Her work takes her all over, including train travel into Europe, indicating a broad perspective on environmental issues beyond her immediate locality.

She compares her experiences in Scotland with those in Australia regarding awareness and preparedness for climate-related crises. She notes a lack of information dissemination in Scotland about what to do or who to contact during such crises, contrasting it with Australia's proactive approach through bushfire plans and regular updates provided to residents.

She expresses concern over the future challenges facing her local community in Glasgow, particularly around food costs, transportation, job security amidst erratic weather patterns leading to fuel poverty. She identifies specific areas within Glasgow that are more vulnerable to climate change impacts due to economic disparities and inadequate investment in infrastructure by local authorities.

4.1.14   Participant 14

Participant 14 resides in Stirling, close to the riverside. She has been living there for about four years, primarily due to her studies at the University of Stirling. She lives independently with her partner and works part-time at a supermarket alongside her studies.

Her views on climate change are shaped by personal observations and concerns rather than direct experiences of extreme weather events or climate crises in Stirling. She notes that while she hasn't witnessed any major climate-related challenges in her local area during her time there, she is concerned about potential flooding due to changing rainfall patterns which could lead to displacement. She also mentions that it seems to be getting colder, affecting her daily comfort and willingness to go out.

She believes that everyone should be involved in addressing climate change but feels that the government, councils, and climate activists should take the lead on resilience activities. She expresses a desire for more information on how communities can become more resilient and suggests infrastructural changes along riverbanks as a specific measure to enhance local resilience. Additionally, she sees a role for herself in creating awareness and joining volunteer groups focused on environmental clean-up.

Despite her concerns about climate change's impact on future plans and its emotional toll when considering global disasters highlighted through social media, she remains interested in contributing towards community resilience efforts. She values access to

online resources for information on climate change impacts and actions individuals can take.

4.1.15 Participant 15

Participant 15 has been living in Glasgow for seven years and describes his local area as sometimes having friendly weather, though it often experiences cold and rainy conditions.

Regarding climate change, he suggests that the local council should take the lead in driving activities to make the community more resilient. He does not consider himself well-informed about climate-related emergencies but believes he would search online for information if needed. Over his time in Glasgow, he has observed some changes in weather patterns, such as expected rainy periods turning unexpectedly hot with bright sun.

He mentions that people in his community could come together to address common problems during crises, like major power outages caused by storms. However, he does not believe climate change impacts his future plans or decisions regarding where to live, how to travel, or the type of work he pursues.

He expresses uncertainty about specific climate-related challenges in his area but shares an anecdote of a friend who had to move due to skin irritation caused by harsh weather conditions. He believes in restricting activities that contribute to climate change and being mindful of his environmental impact as personal actions towards addressing climate change.

He also highlights examples of good practices from other communities addressing climate change through collective action and suggests relocating heavy industries away from residential areas as a measure to enhance resilience against pollution and its impact on climate change. For information on climate emergencies and impacts, he would start with a general online search before consulting specific organisation websites.

4.1.16 Participant 16

Participant 16 resides in Clackmannanshire, Scotland's smallest county council area. She frequently travels across the central belt of Scotland due to her role. Her work takes her to various locations to discuss issues like coastal erosion and flooding in relation to biodiversity.

She describes Clackmannanshire as a diverse area with both affluent and deprived communities living side by side. This diversity extends to the physical landscape available within a short drive—ranging from coastal areas along the River Forth to steep

escarpments like the Ochils. Her daily experiences are influenced by this variety, as well as by the wide range of volunteers she interacts with through work, from wealthy retirees to individuals struggling financially.

She expresses concern about local flood risks exacerbated by changes such as increased surface runoff, sudden bursts of rainfall, and urban development practices like tree removal and tarmacking over soil. She highlights the importance of community-based responses to flooding, noting that some areas have established flood resilience teams supported by local councils but emphasises that these teams must act as first responders due to the rapid onset of such events.

She also points out disparities in community engagement with climate resilience efforts, observing that retired professionals often dominate these initiatives due to their available time and resources. She suggests that those most in need of support may not be able to participate or even be aware of these activities.

Regarding emergency response knowledge within her community, she believes there is a reliance on traditional methods like calling 999 or contacting the council, though she notes difficulties in reaching council services. She also mentions an awareness of flood alerts among those who seek out such information.

5 Appendix A: Interview discussion guide

The following guide was used by all CAG Partners to guide interviews with participants:

Warm-up

1. Can you begin by telling me a little bit about where you live and what your local area is like?

2. Can you share a little bit about your connection to your local area? How long have you lived or worked here?

-   *Aim here is to get an idea of the physical and community characteristics of their local area, but also draw out anything that they think stands out about where they live (positive/negative). Again, useful scene-setting.*

-   Establish physical nature of area (e.g. urban, rural)

-   Establish key features of the land (e.g. heavily built-up, types of buildings/infrastructure, farmland, wooded, near water, etc.)

3. Can you tell me a bit about what a typical day looks like for you, or what your main activities during the week are?

-   Probe to establish (only if possible):

    o   Employment situation. e.g. are they in work (and what do they do)

    o   Living situation, e.g. do they rent, own a home, etc.

Local climate impacts

4. Have you noticed any changes in the local environment, weather patterns, or seasons over the years you've been there? Please share specific examples.

5. Are there any climate change impacts that you or people you know have already encountered in this area? Please share specific examples.

-   If yes, please share specific examples.

-   How did it/they affect your daily life or work?

6. What do you think are the biggest climate-related challenges facing your area, and why?

7. Are there particular aspects of your local environment or community that you believe are at risk due to climate change?

8. How does climate change affect your planning for the future, if at all?

9. And how do your concerns affect your views on the future of your community?

Community and response to climate-related crises

10. Reflecting on past experiences, how easy is it for people in your community to come together in a crisis? Can you share any examples to highlight your answer?

11. If there was a climate-related crisis or emergency, who do you think would be the first to respond or offer help in this area?

-   Probe to establish which agencies/orgs, if any, would help; and what role would the local community itself play

12. To what extent do you feel informed about what to do or who to contact in case of a climate-related crisis?

13. How prepared your local community is for such events?

Enhancing local community climate resilience

14. What actions or measures do you think could be taken to make your local area more resilient to future climate events? Are there any barriers to implementing these?

15. In your view, who should take the lead in driving climate resilience activities in your community? Why?

16. What role do you see for yourself in these efforts? Are there specific actions you feel you could or should take?

17. Can you think of ways the community could or should collectively contribute to these resilience measures?

Good practice

18. Are you aware of any examples of good practice, either locally or elsewhere, in making communities more resilient to climate change? What makes these examples stand out to you?

19. What can we learn from these examples?

Information sources

20. Do you know where you can get information on climate change, its impacts on our communities, and what we can do to respond to that? (Probe for examples)

Wrap-up

21. Is there anything else you would like to add that I haven't had the opportunity to ask you about?

Glossary

Term	Explanation to be given
Climate	What the weather is like over a long time in your area. So not day to day changes (that's "weather") but on average over a longer timescale. Weather can change hour to hour, but climate changes slowly over time. e.g. "It's raining outside today" (weather) e.g. "I live in a place with a mild but wet winter" (climate)
Climate Impacts	Observable changes in climate and how they affect us, e.g. flooding, heat waves, storms
Resilience to Climate Change	How able we are to prepare for, respond to, and recover from the impacts of climate change
Climate Related Activity	Things people or organisations are doing to help themselves and others not be affected as badly by a changing climate

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