

**July 2023**

# **Public Dialogue on Climate Adaptation**

## **Final Report for Defra/Sciencewise**

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# Executive summary

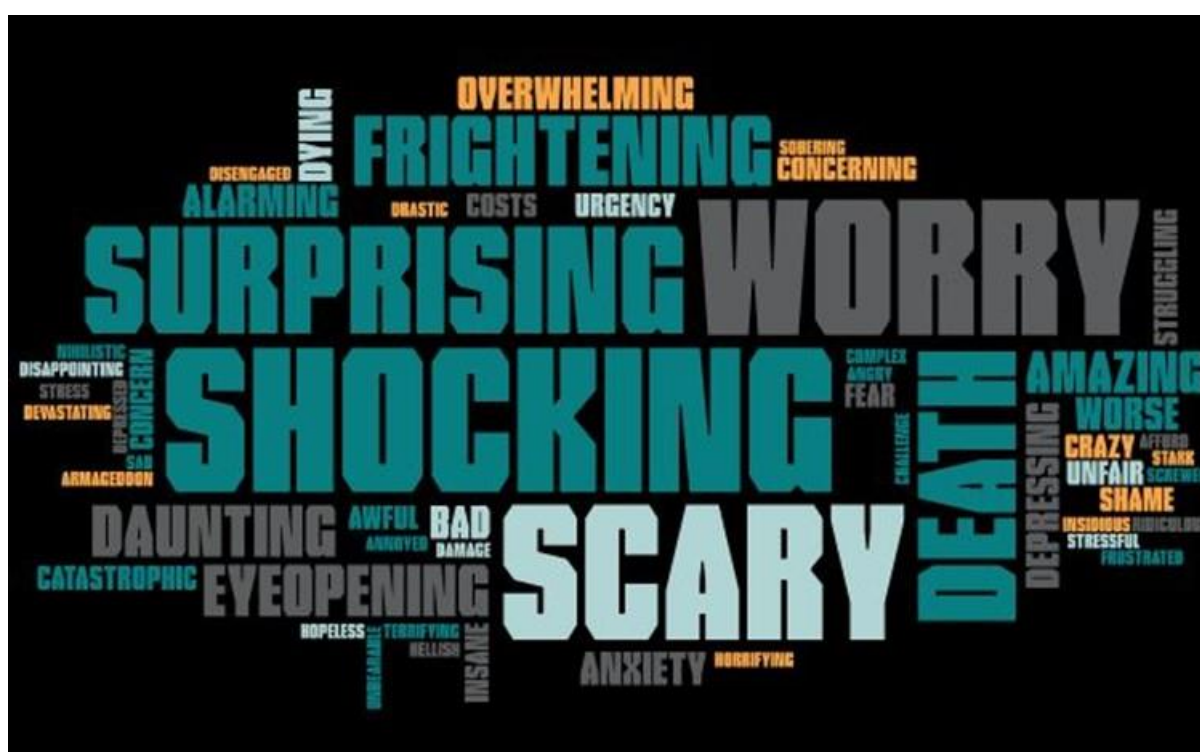
## Overview

England's climate is changing. Our future will be affected by unprecedented climate events with far reaching implications for our economy, society and environment.

In February 2022, the Department for Environment, Food and Rural Affairs (Defra) and UK Research and Innovation's Sciencewise<sup>1</sup> programme commissioned Ipsos, in partnership with the University of Leeds, to deliver a public dialogue on adaptation to climate change within England.

This pioneering deliberative dialogue is one of the first to consult the public on how we adapt to the effects of climate change. It has found that people are shocked by the range, immediacy and seriousness of climate change risks and feel that the time to act is now.

## Word cloud depicting how people spoke about the state of the climate crisis



Participants' initial awareness of climate change adaptation was low, although people agreed that England's weather had already changed in many ways during their lifetimes. Once the concept of adaptation was better understood, there was strong support for urgent action as England was seen as unprepared for a changing climate. Participants felt that government should have done more sooner, and the time to act is now. This message remained constant as the dialogue progressed.

Participants said that people should be able to understand the risks they face so they can consider how they may need to change their lives, providing they are given the right information and tools to do so. Adaptation needs to move up the agenda and should be addressed alongside the net zero commitment.

<sup>1</sup> <https://sciencewise.org.uk/>

Protecting people who are vulnerable and their homes was identified as the top priority for adaptation. Responsibility for action should be allocated fairly. Raising awareness and educating the public is key, both about current adaptation measures and future planning.

The key findings, implications and methodology are summarised below and fully explored in the rest of this report.

## Key findings

### The public's priorities for climate adaptation action

People agreed that the scale of action should be based on the local context. The three key drivers were cost, effectiveness of response, and timing. They preferred a mix of small (local/individual) and large (e.g. government) action, with multiple adaptations addressing risk in a holistic way. Most participants prioritised outcomes for individuals and ways of life rather than preferring one type of adaptation to another or prioritising one risk over another.

There was widespread support for social measures of awareness raising and property level adaptation followed by ecosystem-based approaches and then engineering, built environment, institutional and technological measures. Relocation was the least supported measure although people recognised this may be unavoidable in some situations. The main barriers to adaptation were identified as cost, government support, public opinion (influenced by the current lack of awareness and education) and housing tenure (i.e., tenants' reliance on landlords to take action).

Participants felt strongly that those most at risk (due to personal circumstances and exposure to climate hazards) should be most protected. The next priority was protecting basic human needs in terms of food supplies, health, transport and utilities infrastructure. Protecting the natural environment was not prioritised over these other needs by most participants, in the context of a dialogue targeted at impacts for people. Participants did support nature-based solutions.

There was almost unanimous support for both immediate action and planning now for the longer-term.

### Who should be responsible for climate adaptation action?

Participants were emphatic that national government had primary responsibility for adapting England to climate change. They suggested that adaptation needed cross-party agreement or to be led by an independent body, to ensure that party politics and election cycles do not constrain decision-making. Such action should cascade down to other actors.

There was a strong message that responsibility for action should be distributed fairly. Government should set standards and regulatory requirements for businesses in the same way that mitigation standards are implemented. People should be incentivised to act at the individual scale and adapt their own lifestyles, in the expectation that government is responsible for major challenges such as strategic flood defences and potential relocations.

The only difference in views between cohorts was that those in rural locations (Dartmoor and Exmoor, and Hull and East Riding) were slightly more in favour of community responsibility than their urban counterparts.

## What should a well-adapted England look like?

Participants' concluding vision for a well-adapted England was one of human safety and well-being where people have access to basic services and well-maintained infrastructure. They live in a prosperous economy that capitalises on green opportunities and provides green jobs, sustainable agriculture and increased urban green space. Economic impacts of adaptation have been distributed fairly with no exacerbation of existing inequalities. This England is adaptable and well-prepared; everyone is well-informed; net zero and adaptation measures are carried out in tandem and given equal importance.

In their 'letters from the future', written after discussing this best-case scenario and therefore reflecting hopes rather than fears, many participants showed an energy, emotion and positivity that contrasted sharply with their initial response to future climate scenarios.

## Views of the National Adaptation Programme

Participants viewed the NAP as a plan for the country, rather than the government, with action set by government that could then be cascaded down to local authorities and other agencies including action for communities and individuals. This would then set out accountability at all levels. Participants were keen to be involved in its development and felt a two-way dialogue type process should be adopted to ensure that government is aware of the needs and priorities of the public. Whilst the type of deliberative dialogue adopted here may not be appropriate for large-scale engagement, a climate assembly approach could be adopted.

The climate adaptation dialogue provided a genuine opportunity to gain deep insights from a range of people across different locations in England and many of those who attended reported that they really appreciated the chance to participate. The findings will be of crucial importance to Defra, other government departments and national agencies as well as local authorities and NGOs for the development of NAP3 and the ongoing planning and implementation of climate change adaptation at all levels.

## Communications and engagement

Improved, ongoing and widespread communication and engagement with the public on key climate risks and adaptation actions was a key theme. Participants recommended being honest about the risks and potential impacts while highlighting positive examples of adaptation. Government should avoid jargon and counter distrust of government by utilising experts. Participants strongly favoured a public-dialogue style process in the development and delivery of the NAP as a national plan for action for everyone.

Participants suggested a focus on mass media approaches such as TV and social media to ensure that messages reach as wide an audience as possible. Engaging children and young people through schools and including climate risks and adaptation on the national curriculum was also identified as a vital mechanism to inform the younger generation and their parents.

## Background and methodology

Public dialogue provides an in-depth exploration of a diverse group of citizens' views, concerns, hopes and fears on scientific or technical topics which are complex or controversial in nature. The process allows members of the public to interact with scientists, specialist stakeholders and policy makers and deliberate on social and ethical issues, informing future policy decisions by voicing their principles and priorities.

The aims of this dialogue were to explore the public's views on what a well-adapted England should look like, and how to get there. Findings from the dialogue have informed the third National Adaptation Programme (NAP3), which sets out actions that the UK government will take to prepare the country for climate change in 2023-28.

112 participants<sup>2</sup> from four geographically and demographically diverse locations (Greater Manchester, Inner London, Dartmoor and Exmoor, and Hull and East Riding) in England took part in a deliberative dialogue in March - April 2022. Participants discussed climate adaptation and climate risks with each other and with specialists in six online workshops in each location followed by a national summit with representatives from each location.

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<sup>2</sup> Over the course of the dialogue, some participants dropped out, meaning that 107 took part in the final place-based workshops before the national summit.



# 1 Introduction and methodology

## 1.1 Introduction to the commission

In February 2022, the Department for Environment, Food and Rural Affairs (Defra) and UK Research and Innovation's Sciencewise<sup>3</sup> programme commissioned Ipsos, working in partnership with the University of Leeds, to deliver a public dialogue concerning adaptation to climate change within England. The aims were to explore the public's views on what a well-adapted England should look like, and how to get there. Findings from the dialogue will inform the third National Adaptation Programme (NAP3), which will set out actions that the UK government will take to prepare the country for climate change from 2023 to 2028.

## 1.2 Introduction to climate change adaptation

With current national and international commitments and ambition on emissions, global temperatures could still rise by up to 4°C by the end of this century, or potentially even higher. Even if the international community meets the goals of the Paris Agreement<sup>4</sup>, further climate change will occur and will require adaptation. Climate change adaptation, taking action to prepare for the changing climate, will help the UK to reduce the negative consequences of climate change and take advantage of new opportunities. Building the UK's preparedness for and resilience to the impacts of climate change is a cost-effective and essential way to protect our people, economy, and environment.

'Climate change adaptation', refers to "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities"<sup>5</sup>. For example, to adapt to expectations of more frequent and more severe flooding, governments might build flood defences, communities might initiate flood action groups, and homeowners might install flood resistant doors. The public dialogue did not focus on climate change mitigation, which refers to actions taken to reduce the emissions of greenhouse gases, such as moving to renewable energy, or to increase carbon stores, such as planting more trees.

## 1.3 Research aims and objectives

The principal aim of the public dialogue was to inform the UK government's programme in relation to climate adaptation and climate change (NAP3). More specifically, the dialogue sought to achieve the following five objectives:

1. Understand participants' views on what an England well-adapted to climate risks should look like;
2. Understand how participants prioritise different climate risks and adaptation actions;
3. Understand participants' views on which actors are responsible for undertaking different adaptation actions;

<sup>3</sup> <https://sciencewise.org.uk/>

<sup>4</sup> <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

<sup>5</sup> IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)].

4. Further develop an understanding of public awareness and initial public responses to climate risks and climate adaptation measures; and
5. Gather evidence on how the view of participants who live in and experience different physical landscapes vary on climate risks and adaptation actions.

## 1.4 Study design

An Oversight Group (OG) provided guidance to the dialogue; the group was comprised of experts in environment, conservation, public health, climate change and climate change adaptation. The group's role was to help shape and steer the project and use their collective expertise to advise on the technical, ethical, and practical issues associated with climate adaptation. The list of OG members is provided in Annex B.

The dialogue was informed by a literature review – conducted by the University of Leeds – focusing on adaptation and public engagement and drawing on academic and grey literature from the last 10 years. The literature review found that there is significant public awareness and concern about climate change risks and impacts. From this, it was inferred that participants would likely be highly engaged in the topic area. The dialogue provides an opportunity to further explore the public's understanding and concerns. The full literature review is provided in Annex C.

### 1.4.1 Public dialogue method

Public dialogue provides an in-depth exploration of citizens' views, concerns, hopes and fears on scientific or technical topics which are complex or controversial in nature. By convening a diverse group of citizens, the process allows members of the public to interact with scientists, specialist stakeholders and policy makers and deliberate on issues relevant to everyone, informing future policy decisions by voicing their principles and priorities.

In total 112 participants<sup>6</sup> from four locations in England took part in a six-stage deliberative dialogue. Fieldwork took place across March and April 2022. Participants were recruited to four place-based cohorts (of 25-28 people), reflecting the need to understand differences in public views and concerns across different physical landscapes. The locations were also chosen to reflect a range of climate risks:

1. **Hull and East Riding, Yorkshire:** lowland, mix of urban and rural, coastal, key climate risks - flooding, coastal erosion and overheating.
2. **Inner London:** lowland, urban, coastal, key climate risks - overheating, water stress and flooding.
3. **Greater Manchester:** urban and rural, key climate risks - flooding and overheating.
4. **Dartmoor and Exmoor:** upland, rural, key climate risks - flooding, overheating and wildfire.

To achieve this sample design, a mixed method free find recruitment approach was taken, which combined a range of different recruitment strategies including stratified purposive and intensity sampling. Quotas for gender, age, ethnicity, geographical location, social grade and experience of extreme weather impacts to daily life were set. The mix of participants was designed to *reflect* the characteristics

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<sup>6</sup> Over the course of the dialogue, some participants dropped out, meaning that 107 took part in the final place-based workshops before the national summit.

of each local population. It was not intended to be *representative* from a statistical point of view – as would be the case with a quantitative survey.

Alongside six online workshops, an online community was run to provide space for dialogue participants from across the four locations to interact with one another and continue to reflect on and discuss the topics and their response to these. Towards the end of the dialogue (20 April 2022), six to eight participants from each of the four cohorts (28 in total) attended a half-day national summit. All participants were given a cash honorarium for attendance at the workshops and summit to ensure that a diversity of participants were able to participate regardless of financial circumstance.

Further detail on the methodology and sampling approaches is provided in Annex A.

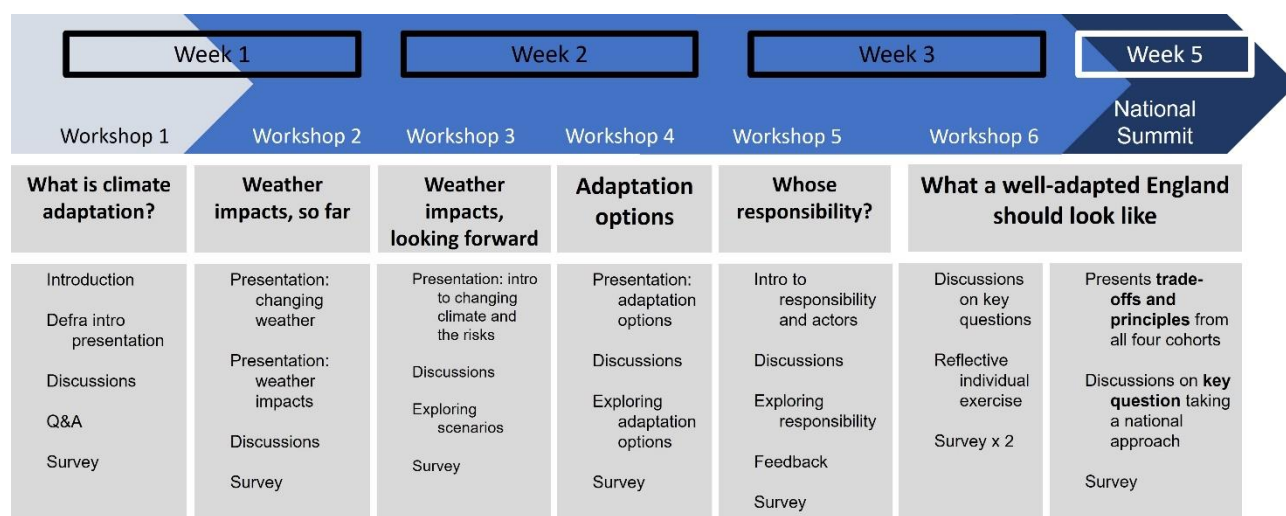
#### 1.4.2 Structure of the dialogue

Figure 1.1 below summarises the structure of the dialogue and the content of each workshop. The workshops were designed to capture participant opinion at multiple points, as they gradually became more informed about climate risks and options, related uncertainties, and trade-offs that must be addressed in decision-making. Participants received presentations from experts<sup>7</sup> - who were also available to answer questions to inform understanding - discussed the issues raised in small groups and explored scenarios. Following each workshop, a knowledge and attitudes survey was administered to track participant views across the dialogue. An ongoing analysis of the key insights from workshops after the first week (from Workshop 3 onwards), within each cohort, was played back at the start of the next session to allow participants to reflect on the range and diversity of views.

#### 1.4.3 Role of experts

Alongside members of the public, experts in climate adaptation and climate risks were invited to each event, while others fed in via recorded presentations. The experts involved in the dialogue are listed in Annex B. Their role was to help clarify any technical questions asked by dialogue participants and explain the existing evidence and future uncertainties for participants to bear in mind when thinking about adaptation measures and what a well-adapted England should look like. In addition, it was an opportunity for them to directly hear some of the issues raised by public participants.

**Figure 1.1: Climate adaptation dialogue structure and workshop content**



<sup>7</sup> These presentations were sometimes adapted to suit the landscape and climate risks within each of the four cohort locations. Full details on which experts participated in each workshop can be found in Annex B.

## 1.5 Interpretation of findings

By applying criteria used in the social science literature to determine the credibility of qualitative research findings (including accounting for bias, meticulous capture of the data via live transcription and systematic analysis, validation and data triangulation) we can be confident that the principles and views presented in this report are credible and valid.

For reporting on public dialogue findings, we use the conventions of qualitative social science reporting:

- We indicate via "a few" or "a limited number" to reflect views which were mentioned infrequently and "many" or "most" when views are more frequently expressed. We use "some" to reflect views which were mentioned some of the time, or occasionally. Any proportions used in our reporting should be considered indicative, rather than exact.
- However, we also indicate strength of feeling even when views are expressed by a minority, as this may also give useful insight into the range of feelings which exist within different groups of people.
- We are reporting perceptions rather than facts and have indicated where we are reporting perceptions of participants, and where we are offering analysis of the implications of these perceptions.
- Where views apply only to a subset of participants, e.g. participants in Greater Manchester, we highlight this

### 1.5.1 Acknowledgements

The authors would like to thank Defra and Sciencewise for their support and advice, and the members of the OG, which was supported by Defra, for their invaluable contributions throughout the study. We would also like to thank the experts and OG members who contributed to and reviewed materials, attended the dialogue events and were willing to discuss their hopes and priorities for climate adaptation. Finally, we would like to extend our thanks to the 112 public participants who gave up their time, committed to learning and discussed the issues put to them at length, taking on the views of others as well as their own. Without their engagement, the process would not have been possible.

## 2 Initial awareness and reflections

### Key findings:

- Participants felt that England's weather has already changed in lots of ways.
- Participants were shocked at the range, seriousness and immediacy of climate change risks.
- They were frustrated and upset that they were not already aware of the risks, and felt this information should be much more widely known.
- Awareness of adaptation was low but there was strong support for preparing England for more extreme weather and climate change.
- Participants thought England is not yet prepared for the risks of a changing climate and more action is needed.

### 2.1 Introduction

This section is based on the discussions in Workshops 1 and 2 and the first half of Workshop 3. During these sessions, the participants were introduced to changing weather in England, observed levels of current climate change, scenarios of potential future climate change, including the inevitability of at least some further climate change in the coming decades, the impacts brought by more extreme weather and a changing climate, and the role of Defra and England's adaptation governance framework.

In these early sessions the participants did not consider climate adaptation options, outcomes, or responsibilities in depth, as these conversations came in later workshops. However, there were experts available for question-and-answer sessions from Workshop 1 onwards and, at times, participants asked about these topics before they were addressed in the main workshop content.

These early workshops were intended to provide insight on the following areas of interest to Defra and Sciencewise: *'Understanding of public awareness and initial responses to climate risks'*; *'Understanding of how participants prioritise different climate risks'*; and *'Understanding how the views of participants who live in and experience different physical landscapes vary on climate risk'*

The focus of the workshops was climate change adaptation, but the project team recognised that participants were likely to be more familiar with mitigation than adaptation options, so the first workshop included time to provide a clear distinction between the two.

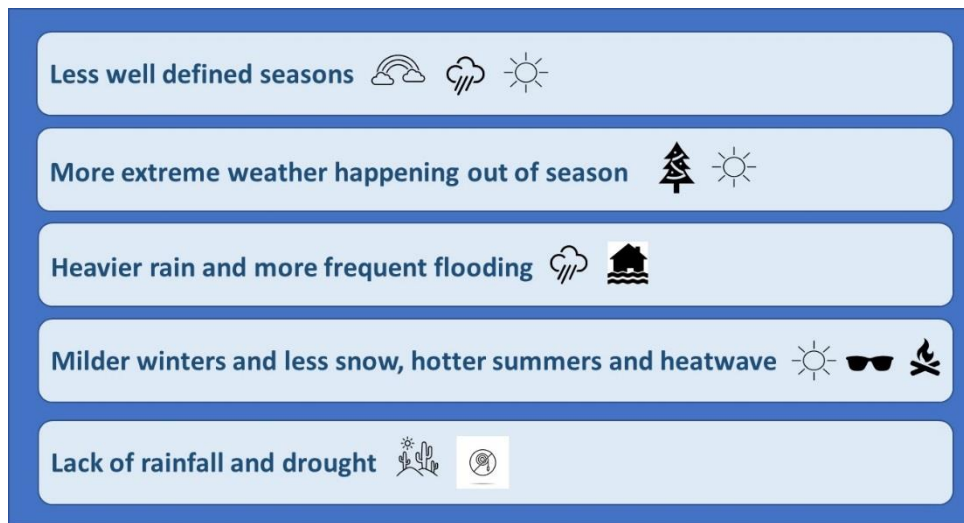
### 2.2 Perceptions and experiences of changing weather in England

The participants were first asked about their perceptions and experiences of changing weather in England early in the first workshop before they had received any information from the experts. While discussion of this topic continued throughout Workshop 1 and into later workshops, including after the participants had received information about current and future climate change, the below provides a view on the participants' pre-existing perceptions and experiences.

### 2.2.1 Perceptions and experience of changing weather

During the early conversations in the workshops, there was strong agreement between the participants that the weather in England is changing; the main points made by participants are summarised below.

**Figure 2.1: Perceptions of changing weather in England**



Although there were occasions when participants mentioned some future opportunities changing weather could bring, such as increased tourism or growing new crops, the participants' own experiences of changing weather so far were overwhelmingly negative, as per the examples detailed below.

Overall, participants strongly agreed that weather in England has become more extreme, as in the first quote below, and more unpredictable, as in the second.

**"The wind is more like gales. The sun is hotter than ever before. Everything's on steroids."** Hull and East Riding, Workshop 1.

**"We always had autumn, spring and winter. Now it's very mixed up. We had snow one April, didn't we? It's crazy how things have changed."** Inner London, Workshop 1.

Linked to the idea that weather patterns have become less certain, and seasons have become less defined, participants described how they found it increasingly difficult to plan around the weather.

**"You can't plan anything, you get days off and you want to get out but you can't plan anything because you don't know if the weather will let you do it."** Greater Manchester, Workshop 1.

Additionally, nostalgia was particularly expressed in relation to past colder winters and more snow. Several participants talked of cold-weather traditions, such as sledging, which were no longer possible for them or their children.

**"We'd be sledging every day after school, but that's just not a thing anymore. I took my daughter out and tried to go sledging but the weather just wasn't good for it."** Hull and East Riding, Workshop 1.

Several of the participants had experienced flooding in their homes or local areas, and several had experienced storm damage to their homes. Two participants had grown up in Hebden Bridge and Colchester, respectively. The former had experienced several instances of flooding during their



childhood, while the latter had been told at school that the town would be lost to sea level rise in the future. Both of these experiences of threats to their local area had caused worry and anxiety.

**“I learnt at school, good few years ago, that in 2050 my hometown would be underwater. Yes, that was really scary, because I was like, what happens to the tens of thousands of people that live there? Where do they go?”** Inner London, Workshop 3.

All groups talked about disruption to transport networks from extreme weather events, including roads, tubes, trains, and, to a lesser extent, planes. This was viewed as a large inconvenience with serious knock-on effects, such as people being unable to get to school or work. Additional to the weather impacts, disruption to travel was often seen as reflecting poor management and something that did not happen or happened much less in other countries.

**“We get an inch or two of rain and everything stops. All the motorways are shut down. There are loads of accidents. With the high winds, the Humber Bridge closes, no-one can go over it. Everything comes to a standstill. We’re not very prepared for anything really, not even prepared for a couple of inches of snow.”** Hull and East Riding, Workshop 1.

Participants also had experience of weather disrupting schools, with one Manchester primary school closed due to flooding over the course of the workshops.

Participants did not often talk about extreme weather as a threat to their own wellbeing. However, when these were discussed, the threat of extreme weather to personal safety and wellbeing was an emotive topic. There was an example given when elderly parents had nearly been evacuated due to approaching wildfires and another instance in which a participant’s mother, who requires oxygen, had to be moved to hospital when there was a power cut resulting from a storm. For those participants who were more informed about climate change at the beginning of the sessions, there was also some discussion of impacts to their mental wellbeing such as increased anxiety (this became a broader topic involving more participants as they learned more about possible future climate change scenarios).

Fewer participants had experienced changing weather as it affected the garden and wildlife, but this was discussed as a personal impact by some. For example:

**“I’m a very keen gardener... and I’ve really noticed some changes. Things didn’t die off from last year that should have done, things coming out earlier than they should.”** Dartmoor and Exmoor, Workshop 1.

## 2.3 Initial awareness of climate change adaptation and current progress

### 2.3.1 Understanding of adaptation

At the beginning of the workshops, participants were generally not familiar with ‘adaptation’ as a means of managing climate related impacts; nor were they familiar with national government’s adaptation strategies and ambitions. As anticipated, participants had a good awareness of mitigation initiatives, including switching to renewable forms of electricity, electric cars, and non-fossil fuel-based domestic heating.

As the participants learned more about adaptation, some welcomed this focus as felt it was a “realistic” response to the situation.

**"It seems like we're going to a place where no matter what we do, we've got to prepare. It's concerning but it's weirdly comforting that we're accepting that and thinking how to deal with it, rather than preventing it. This is the reality now."** Greater Manchester, Workshop 1.

In contrast, other participants noted a preference for focusing on mitigation rather than adaptation as they considered it was more important to prevent climate change impacts rather than focus on addressing them.

**"How can we prevent these things from happening in the first place or reduce them? That's the biggest eye opener for me, realising that's the most important bit."** Greater Manchester, Workshop 1.

For some participants, even as their knowledge and understanding of adaptation options increased throughout the workshops, there continued to be a resistance to splitting out the conversation into adaptation and the more familiar mitigation. These participants preferred instead to talk about the holistic challenge of managing climate change.

### 2.3.2 Perceptions of England's preparedness for extreme weather and changing climate

At several points during the opening few workshops, participants discussed their views on how far England is currently prepared for extreme weather and the changing climate. The participants overwhelmingly thought that England is not yet well prepared to manage even the more familiar extreme weather events, such as flooding and heatwaves. Participants were concerned that England does not currently manage extreme weather events well, referring to disruptive instances of flooding, storms, snow, and heatwaves. Disruption was broadly discussed in relation to transport networks, but other infrastructure systems and services were also referenced.

**"We've had flooding and other things that we're not prepared for, extreme weather like hot and cold. Our systems shut down. Our transport systems don't work. People are fainting. Our roads and motorways get completely blocked."** Inner London, Workshop 1.

Recognising that climate change will bring about a range of and, at times, co-occurring risks, participants thought this would be hard to prepare for – but that this should be an urgent priority for the government and the country.

Participants felt similarly about England's current levels of preparedness for climate change more broadly. There was also low awareness of climate change adaptation actions that have been taken or are currently taking place. In Workshop 1, an expert introduced the 2008 Climate Change Act; and participants questioned why, in their view, nothing had been done since then. Participants across cohorts shared a strong sense that more should be done to prepare for climate change.

**"They've clearly been failing badly if they were the first to get on track and they're behind. Stop talking and start doing. They're clearly spending too much time thinking and talking and trying to plan. They know what the problems are. Do it."** Hull and East Riding, Workshop 1<sup>8</sup>.

To the extent that England is already prepared for instances of extreme weather, this was not perceived as sufficient preparation for climate change. One participant expressed concern that England's defences are not sufficient for the dynamic challenges of climate change. For others, there were persistent concerns surrounding construction, particularly of homes, on flood plains.

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<sup>8</sup> 'They' in the quote refers to Defra



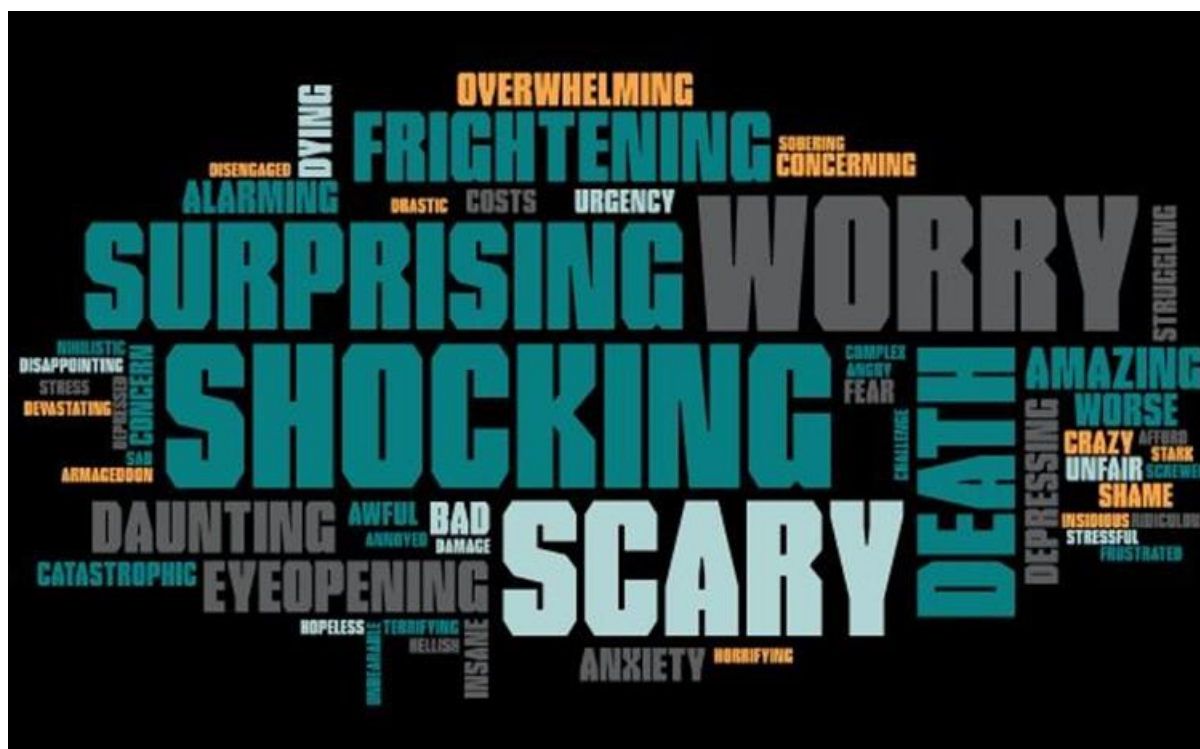
**“There’s a lot of house building going on and it scares me. They’re building where years ago it used to be underwater.” Dartmoor and Exmoor, Workshop 1.**

## 2.4 Response to information about future climate change and its impacts

During the workshops, the participants watched short videos produced by the guest experts, who were then available in the break-out rooms for follow-up questions. In Workshop 2, the videos were about how weather in England has already changed and the subsequent impacts. In Workshop 3, the first expert video introduced expected future climate change, including scenarios from 1.5°C to 4°C of warming, and the impacts this range of scenarios could cause. The participants then watched a video about how future climate change might impact their local area.

The participants had a strongly negative emotional reaction to the expert information they received about possible future climate change scenarios. Across the cohorts this information was variously described as: **“anxiety making”, “hellish”, “crazy”, “frightening”, “terrifying”, “daunting”, “depressing” and “Armageddon”** Various cohorts, Workshop 3. The word cloud below indicates the prevalence of specific terms expressing concern following the presentation across the four cohorts.

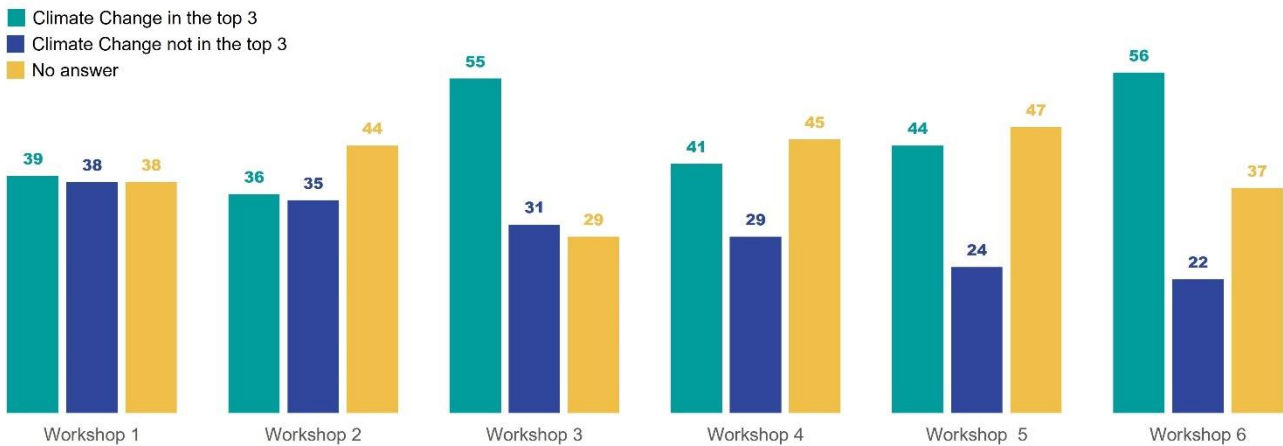
**Figure 2.2: Word cloud highlighting expressions of concern (size of words relates to the number of times they were stated)**



The number of participants who considered climate change to be one of the three most important issues facing the UK, when answering the short survey that was issued after each workshop, increased in Workshop 3 and Workshop 6 (see Figure 2.3).

**Figure 2.3: Cumulative responses from across all cohorts throughout all workshops, showing the number of participants who selected climate change as one of the top 3 issues facing the UK today and in the future.<sup>9</sup>**

Which of these, if any, would you say are the three most important issues facing the UK today/in the future?



It is clear that a considerable number of participants were shocked by the information they had been given. This seemed to be, in part, because while participants had known about climate change and already learnt some information in the previous workshops, they were shocked by the severity of future risks and how seemingly small increases in temperature could have such far-reaching implications:

**“It’s worse than you think. This is far worse than what they tell us”** Greater Manchester, Workshop 3.

As suggested by the above quote, participants often expressed frustration and anger that they had not already known about potential climate risks and their impacts, and that the information was not more widely available:

**“we’re not as knowledgeable as we should be on this situation and the government are withholding knowledge... no one’s really telling us what to do and how to prevent it, and that’s where the confusion lies.”** Inner London, Workshop 3.

Similarly, participants expressed anger, feeling that even those who were already aware of future climate change, such as councillors, town planners and regional leaders, were not combatting the risk accordingly:

**“That session made me quite angry. I think how can you listen to that kind of data and still be pressing on with ridiculous schemes to build more houses you can’t afford in places we shouldn’t build where we’ve already got endless concreted parts of the cities that should be reassigned?”** Greater Manchester, Workshop 3.

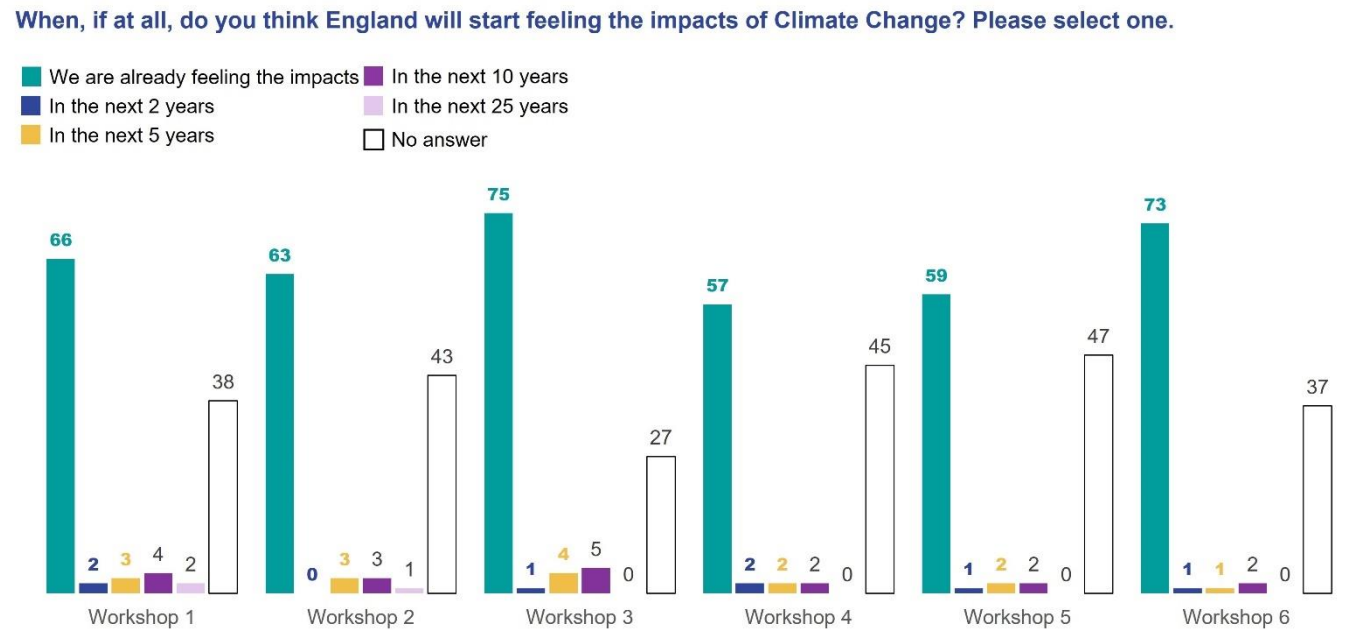
As well as feeling that they were not aware of how serious the risks are, participants also did not realise how close these risks were in terms of time and location.

<sup>9</sup> Following all workshops, participants were asked, “Which of these, if any, would you say the three most important issues facing the UK today/in the future? Please select three.” This chart shows the number of participants from all cohorts who selected climate change as one of their top three issues facing England today or in the future. The numbers who did not respond are also shown. It should be noted that there was a large amount of non-response, in particular from Cohorts 3 and 4 (Dartmoor and Exmoor; Hull and East Riding).

**“You think it’s further away and you don’t imagine it to be on your doorstep” Greater Manchester, Workshop 3.**

The perception that climate change risks were temporally closer than had previously been assumed also came through in the survey data (see Figure 2.4). The graph shows an increase in the number of participants who thought England is already feeling the impacts of climate change in the results taken after Workshop 3 (although this number remained high throughout).

**Figure 2.4: Chart showing participants’ opinions on when, if at all, England will start feeling the impacts of climate change.<sup>10</sup>**



Unsurprisingly, one way in which participants responded to this information was to talk about ways to stop or reduce future climate change, and there was broad support for mitigation action from the government as well as individuals, communities and businesses. However, some of the participants were struck by the inevitability of at least some further warming due to historical and current emissions of greenhouse gas emissions, regardless of mitigation actions taken:

**“So, it’s sort of disappointing to think that the changes and the increases seem to happen so quickly but trying to change that doesn’t seem to be quite so immediate” Dartmoor and Exmoor, Workshop 3.**

Additionally, some groups considered the difficulty of understanding how seemingly small temperature increases can lead to such a range and scale of impacts:

<sup>10</sup> Following all workshops, participants were asked, “When, if at all, do you think England will start feeling the impacts of climate change? Please select one.” This chart shows the accumulative answers from all cohorts across the six workshops. The numbers who did not respond are also shown to contextualise some of the changes in data. It should be noted that for both there was a large amount of non-response, in particular from Cohorts 3 and 4 (Dartmoor and Exmoor; Hull and East Riding).

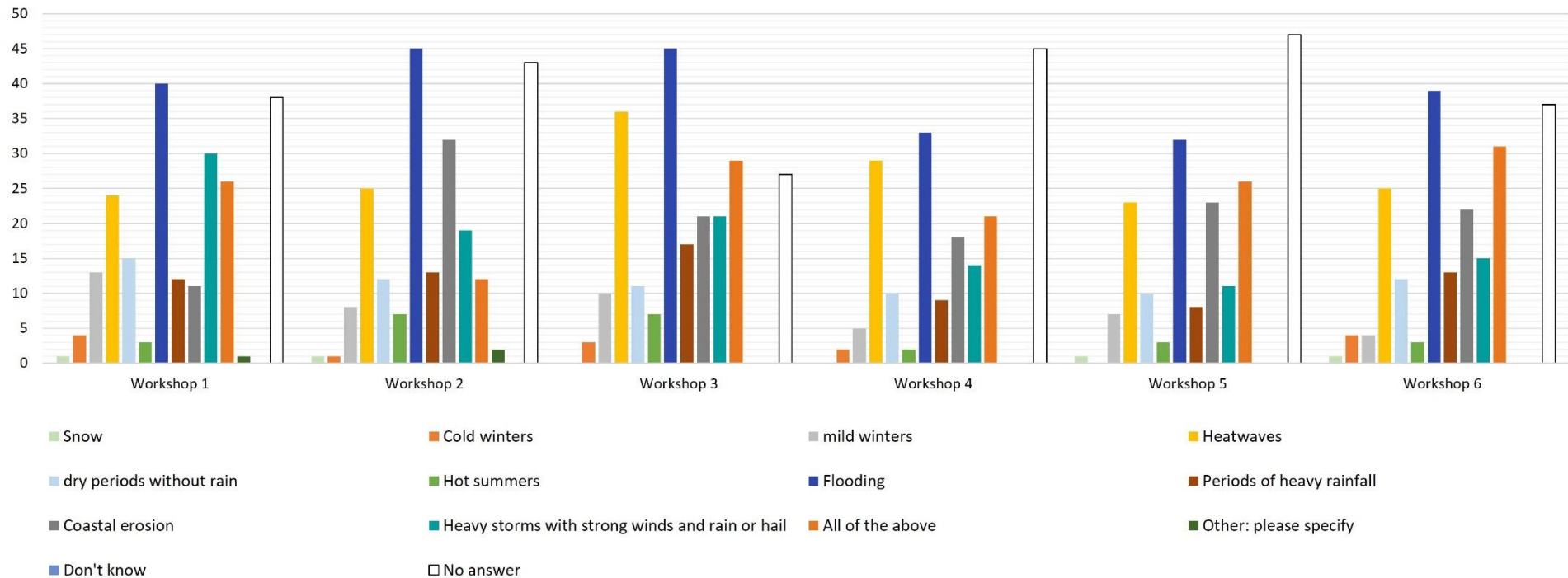
**“I found it interesting that when I hear the numbers 1 degree, 2 degrees, it doesn’t sound like a lot until you see those numbers and you realise what one small number can do. I think if a report like that was on the news with 1 degree, 2 degrees, I wouldn’t be alarmed, but when you see the impacts, that’s a big story.” Dartmoor and Exmoor, Workshop 3.**

## **2.5 Initial awareness and attitudes to specific climate risks**

In the accompanying survey, participants were asked *‘What, if any, do you think are the main weather and climate hazards for England?’* The graphic overleaf shows that participants consistently thought of flooding and heatwaves as the main hazards, followed by heavy storms and coastal erosion. There was also a percentage of participants selecting ‘all of the above’ on all occasions.

**Figure 2.5: What participants from all cohorts said were the main weather and climate hazards for England, asked across all six Workshops<sup>11</sup>**

**What, if any, do you think are the main weather and climate hazards for England? Please select 3.**



<sup>11</sup> After all six workshops, participants were asked, "What, if any, do you think are the main weather and climate hazards for England. Please select 3." This figure shows the accumulative answers across all the cohorts, throughout the workshops. As with other survey questions, there were a large number of participants who did not answer, included here to contextualise other answers.

## 2.5.2 Response to each of the risks

As detailed in Figure 2.5, participants were particularly struck by the range of risks, how serious each could be, and how immediate some of the risks are.

### Responses to specific risks


- 

**Heavy rain and flooding** – a familiar risk to all cohorts, although generally seen as a localised threat to those living near rivers or on the coast. Several groups noted that they had not previously been aware of the widespread risk from surface water flooding<sup>12</sup>. Participants saw flooding as a concern for those in higher risk areas, particularly those on lower incomes who may be less able to afford insurance, recovery or relocation. They were also concerned about those who rent their homes, as this group will be reliant on landlords to take action to floodproof their homes. Participants were frustrated that the number of people at risk of flooding was increasing due to construction taking place in higher risk areas and on green spaces (thus reducing porous surfaces) plus the general scale of new development adding pressure to drainage and sewage systems.
- 

**Hotter weather and heatwaves** – again a familiar risk to all cohorts but participants were shocked by the statistics forecasting increases in heat-related deaths under future warming scenarios. There was concern about the health-related impacts of hotter weather including skin cancer, particularly for older and younger people and those who are more vulnerable including homeless people. Participants considered that England was not as well prepared for hotter weather as other countries. This included homes and other built infrastructure which was perceived as designed to insulate against colder weather and tended to overheat in the summer. Again, there was concern for those in rented housing who may be less able to adapt their homes. There was some discussion that hotter weather might increase tourism although it was not always clear whether this was considered a positive or not.
- 

**Sea level rise** - also a familiar risk, but participants were surprised by the scale of increase that could be experienced under different warming scenarios. The expert video had shown that sea level rise might reach one metre by the end of the century and participants thought this would have considerable negative effect on England. The Dartmoor and Exmoor cohort, and to a lesser extent Hull and East Riding, talked about this risk more than the other cohorts, as they were more familiar with the localised risks from this hazard. For the Dartmoor and Exmoor participants, conversations particularly focused on Dawlish Warren and the surrounding area. This was a well-known landmark and prompted participants to say either that they were aware of the risks from sea level rise and flooding in this area, or that they were shocked to learn about them. In other cohorts, there was not a comparable point of focus for this risk.

<sup>12</sup> Surface water flooding occurs when rainwater does not drain away through normal drainage systems or soak into the ground, flowing over the ground instead. <https://www.gov.uk/government/publications/flood-risk-maps-for-surface-water-how-to-use-the-map#:~:text=Surface%20water%20flooding%20happens%20when,of%20lead%20local%20flood%20authorities.>

- 
**Wildfire** - this was not a completely unknown risk, with the Manchester cohort discussing the recent fires on Saddleworth Moor. However, generally there was surprise across all cohorts that wildfire could present a serious risk to England in the future.

## 2.6 Summary

This chapter has reviewed the participants' initial awareness of and reflections on changing weather, current and future climate change, the impacts this might bring, and the extent to which England is prepared to manage this. Key findings include the shock and upset felt by participants after learning about future climate change scenarios and the potential severity of the impacts. There was concern about all potential climate risks, with notably little variation in perceptions of climate change risks between the four cohorts, with some nuanced exceptions, for example, the Dartmoor and Exmoor cohort discussed sea level rise more than some of the other cohorts. Whilst adaptation options are not a focus of this chapter, it was clear from Workshop 1 onwards that participants were strongly supportive of taking action to best prepare England for changing weather and a changing climate, and felt that more needs to be done than has been to date.

Adaptation action is explored further in Chapter 3.



## 3 Adaptation action

### Key findings:

- Participants felt the response to climate change should be immediate, and that government, in particular, should have done more sooner.
- Participants had mixed feelings regarding the scale of the response (with cost, effectiveness and timing being three key drivers) with many feeling a mix of small and large-scale action would be best.
- Participants generally preferred multiple adaptation measures to address risk in a holistic way.
- There was widespread support for social measures of awareness raising and property level adaptation followed by ecosystem-based approaches and then engineering, built environment, institutional and technological measures. Relocation was the least supported measure whilst recognising this may be unavoidable in some situations.
- The main barriers to adaptation were identified as cost, government support, public opinion (influenced by the current lack of awareness and education) and housing tenure.
- The key factors that participants considered (and thought should be considered) in prioritising adaptation measures were the level of risk and uncertainty surrounding this, the outcomes that will be achieved particularly for vulnerable people, cost and effectiveness.

### 3.1 Introduction

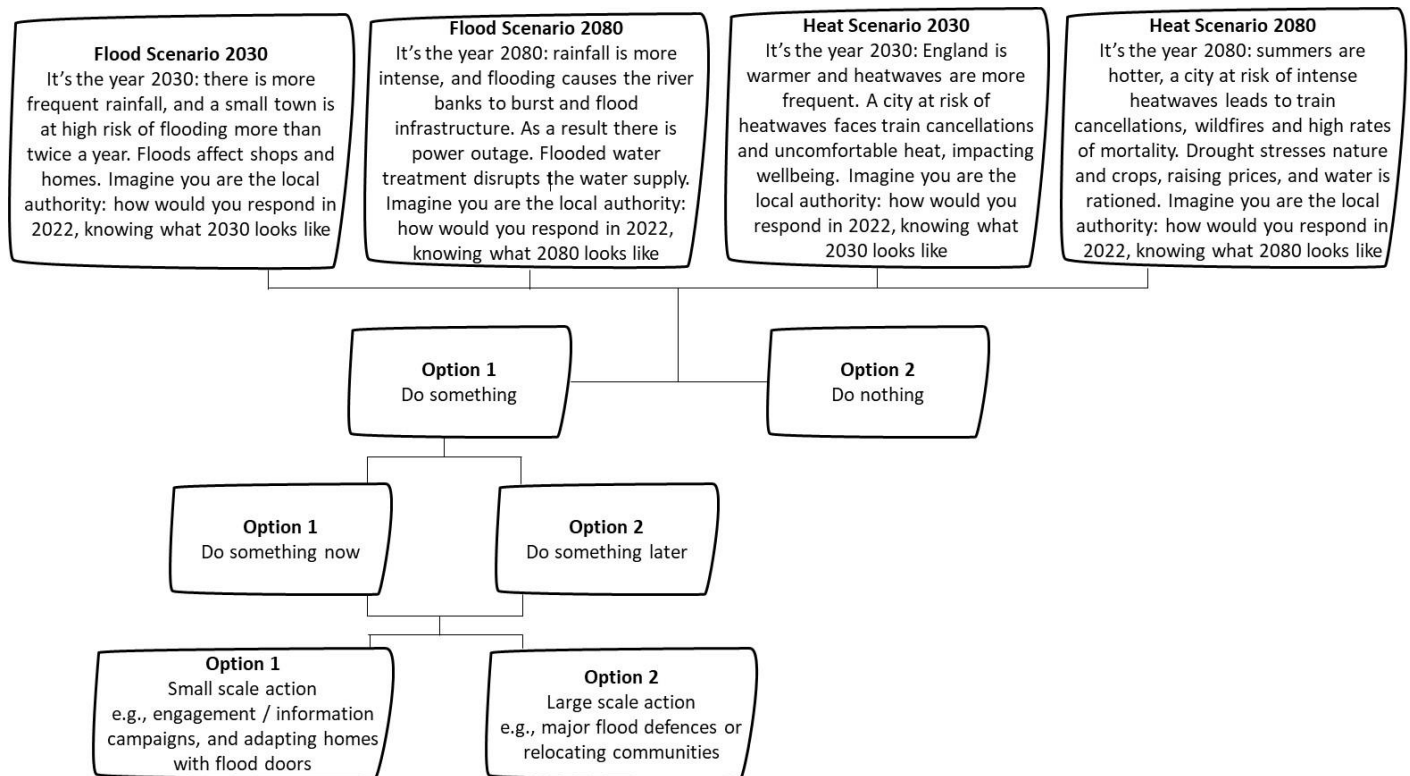
This section covers participants' views on potential climate adaptation action that can be implemented to help build England's resilience to climate change. The section draws on elements from Workshops 3 (Weather impacts, looking forward), 4 (Adaption options), 5 (Whose responsibility?) and 6 (What a well-adapted England should look like).

Whilst the workshops used the term 'climate adaptation options', throughout this chapter we refer to adaptation approaches with regards to when and how adaptation should be implemented, whilst adaptation measures focusses more on specific actions that can be taken.

### 3.2 Climate adaptation approaches

Workshop 3 featured a 'choices and consequences' game in which participants were presented with a 2030 and a 2080 scenario based on either flooding or heatwaves. Participants were asked to make a series of choices: whether or not to act, whether to act now or later, and whether action taken should be large or small-scale. Participants were then presented with the results describing the situation in 2030 and 2080 based on the series of choices they had made and asked to reflect on the game and their choices.



**Figure 3.1: Choices and consequences**

This chapter includes responses to the above scenarios but also brings in findings from earlier workshops.

### 3.2.2 The need to act, and to act urgently

All cohorts identified an urgent need for action, with some frustration that action had not begun much sooner, applying across both the 2030 and 2080 scenarios.

**“The figures we’ve got in terms of how the climate is changing and how it’s impacting our wellbeing, our health, our mortality, the food we eat. I think that’s enough to suggest we should start now. I presume we’ve started so we should continue and maybe increase our efforts.”** Inner London, Workshop 3.

The urgent need to act was stated from the outset (Workshop 1), with participants agreeing that addressing the impacts of extreme weather as a result of the changing climate should be a political and national priority with more government commitment to make sure England is better prepared. It should be noted that participants were largely unaware of current and previous work by government, national agencies and local authorities to address climate risks particularly in relation to flood and coastal erosion risk management.

**“I think we should be investing a lot more in ways of preventing floods and things like that. It sounds really obvious but clearly we don’t have the infrastructure in place otherwise we wouldn’t see the kind of floods we’ve been experiencing.”** Greater Manchester Workshop 1.

Participants believed that England *should* be adapting urgently to climate change and expressed concern that England *is not* currently preparing for more extreme weather and a changing climate. Some participants argued that there has been too much talking and not enough action, with a few querying the commitment and budget that had been put towards increasing preparedness. One exception was in

relation to flooding, for which participants were aware of some actions being taken, such as flood defences. However, participants still felt this was not yet sufficient to adequately protect those at risk. There was frustration that there did not appear to be sufficient learning from previous flood events and that the same areas are still at risk from future repeat events.

**"We're saying we're doing something, but actually when it comes down to it, we're not. Every time it rains in our village, we have a power cut because the infrastructure has had it, and they don't want to spend any money on it."** Hull and East Riding, Workshop 1.

There was also a sense that, where action was or is being taken, it was seen as *reactive* to weather events after they have occurred, resulting in responses that were perceived by participants as being 'too little, too late'. Instead, participants believed action should be *proactive*.

**"We're great in an emergency. Reacting to situations and getting all hands to the pump and people mucking in and working late to try and get things back online. Where I was coming from is if we designed things better going forward, those situations might happen less frequently."** Greater Manchester, Workshop 1.

Participants emphasising the need for immediate, proactive action put forward numerous reasons for this: a common and strongly held view was that the climate would only deteriorate, making it harder to deal with in future leading to damage to important services and infrastructure. Participants also noted that acting now could be more cost-effective in the longer term.

**"If you don't tackle it sooner rather than later, you're just making the fixing worse down the line."** Greater Manchester, Workshop 3.

A few said it would be **"illogical"** and **"nonsensical"** (Dartmoor and Exmoor, Workshop 3) not to act now, with some suggesting that doing so is vital to leave a positive legacy for future generations. Others thought that acting now could not do any harm, meaning there was no reason not to take precautions.

**"If we make adaptations, we're not making the scenario worse."** Inner London, Workshop 3

The short timelines in the 2030 scenarios (see **Figure 3.1**) were also an important driver in the decision for immediate action for a few participants, compounded by fact that the implementation of adaptation actions can be a lengthy process.

**"If it's going to take 15 years to do it, something needs to be in place. They need to offer some kind of protection to homes."** Greater Manchester, Workshop 3.

Often, participants extended this sense of urgency to the 2080 scenarios, citing the severity of the situation, and suggested that acting now would limit more serious impacts by 2080.

**"Act now if possible; more chance of stopping it before it happens."** Greater Manchester, Workshop 3.

In the 2080 scenarios, participants also highlighted that climate adaptation options often take time. Specifically, when discussing the flooding in 2080 scenario, some participants noted that if people would be required to relocate, this would be a difficult process requiring immediate preparation.

**“Relocating communities is a massive effort.”** Greater Manchester, Workshop 3.

Additionally, the fact that the groundwork to ensure the success of actions, such as obtaining funds, public support, and appropriate take time, also caused concern.

**“Defences are going to need funding, you’re going to need massive support from communities.”** Greater Manchester, Workshop 3

However, for some participants, in the context of the 2080 scenarios, rushing climate adaptation could potentially lead to missing breakthroughs or improvements in technology and knowledge that could be easier to implement. In this vein, participants flagged that the need for careful planning and obtaining public support needed to be adopted alongside immediate action. Regarding the 2080 scenarios, it was suggested that action taken now may not be as useful or relevant by 2080 and that in the case of this scenario there was more time to plan, act, and assess the success of action currently being taken.

**“If it's a longer period of time then there's more to take into consideration,”** Inner London, Workshop 3.

Despite expressing the need for immediate action, some participants also believed that action would need to be continuous and ongoing; adaptation can never be considered as ‘done’.

**“Plans can be continuous no matter who runs the council. Otherwise, you’ll be constantly plugging holes,”** Dartmoor and Exmoor, Workshop 3.

The timing of adaptation was also discussed in Workshop 6 with the same urgency being stressed by all cohorts, providing a clear perspective that England should have already acted (summarised in the box below).

#### Workshop 6: Views on when adaptation should be implemented

- **Greater Manchester** – we should not wait because of uncertainty as we have already waited for too long and it takes time to get things done.
- **Inner London** – we must not wait until it is too late, and we are overwhelmed. We have taken a small-scale approach for too long and big changes are needed.
- **Dartmoor and Exmoor** – we should act now to avoid things becoming worse, both financially and socially.
- **Hull and East Riding** – climate change is happening, and we should already have acted. Acting now has the potential to alleviate problems later and it takes time to plan and implement actions.

### 3.2.3 Scale of response

As shown in **Figure 3.1**, small-scale measures were identified as actions that individuals or communities could take, such as property adaptation, wearing appropriate clothing, and taking siestas. Large-scale measures encompassed adaptation actions such as large flood or coastal defences, and relocation. Participants had extensive debates over the need for small or large-scale action, with three specific issues highlighted: effectiveness, cost, and timing.

## Effectiveness

For many participants, multiple small-scale actions conducted at the community scale – such as communication with the public, education, and property adaptation – were seen as potentially being more effective than a single large-scale adaptation. Generally, small-scale actions were also considered to be effective where they encouraged or allowed individuals to adapt their own behaviours – for example, changing working patterns to allow afternoon siestas in hot weather.

For the scenario exercise, small-scale action was often favoured by participants as actions they could personally take. In the overheating scenario, participants considered that many of the actions that could be adopted would be small-scale (for example, shutters installed on windows). Participants considered that larger scale actions, such as strategic flood risk management schemes, should be implemented by government.

However, many also expressed concerns around small-scale action, feeling that not taking larger-scale action now might be regrettable in the future. Many participants expressed concerned that small-scale actions offer inadequate, limited protection against the impacts of climate change– a mere **“plaster”** (Dartmoor and Exmoor, Workshop 3) on the issue. There was also some support for large-scale action based on personal experiences of the failures of a small-scale action. Conversely, some participants felt that big changes, while effective, had the potential to put people off, due to the disruption these may lead to, leading to a general loss of public support for adaptation.

**“The changes we make are going to be so small-scale, so it’s more about making people understand the large-scale changes that are happening.”** Greater Manchester, Workshop 6.

Many participants also expressed support for large-scale action and considered small-and large-scale actions could be taken together; they are not mutually exclusive.

## Cost

Although participants emphasised the need for both small- and large-scale action, the cost of action was a prominent concern. While some participants felt that cost constraints meant small-scale action would be preferable, many were concerned that vulnerable and low-income individuals may not be available to afford even these small-scale options. Alternatively, those in support of large-scale action felt it would be better and more cost effective to invest significantly immediately, rather than spending on multiple small adaptations.

**“You’ll be constantly plugging holes, which will be more costly anyway.”** Dartmoor and Exmoor and Dartmoor, Workshop 3.

When discussing funding, some participants noted a need to start ring-fencing funds for the coming decades – by taxing those on higher incomes more and involving NGOs in adaptation responses. Some others also suggested government subsidies to facilitate individual adaptation actions.

## Timing

Timeframes were a big consideration when deciding on small- or large-scale action, more-so than when deciding on whether to act now or later. The short-timelines were a key driver of small-scale action in the 2030 scenarios, with participants feeling that larger-scale responses are time consuming and would not

likely be ready by 2030. In the 2080 scenarios, participants felt there would be more time to plan for large-scale action, including finding the money and getting expert opinions.

### **"There's a little more room for error, and to make changes." Inner London, Workshop 3**

Others felt that large-scale action was a more adequate response considering the size, severity and urgency of the problem. The length of time it would take to implement large-scale actions also contributed to preferences towards implementing these as soon as possible.

In response to these issues, participants can generally be categorised into the following groups in terms of their views on the blend of small- and large-scale action:

- Those who supported small- and large-scale action depending on the context with the decision being influenced by factors like the immediacy, scale and frequency of the risk, the rate of change in these factors and the size of the area affected.
- Those who felt that a mix of both small- and large-scale action would be needed, with some feeling that adaptation should begin small, so that preparation for larger action can occur, and then shift towards a bigger response.
- Those who felt small- and large-scale action should run alongside each other, citing, for example, the fact that large-scale adaptations were more impactful but harder to implement.
- Those who felt that larger actions would need to be supported by smaller-scale actions, such as communication to get the public on board, to be successful. Particularly in the context of the 2080 scenarios participants felt the increase in time to act meant implementing both types of adaptations would be more feasible. The need for a middle ground was also expressed less commonly, with a feeling that adaptation options like planting trees and retrofitting, were neither small nor large-scale actions and could happen straight away.

#### **3.2.4 Reflections on the outcomes from the choices and consequences exercise**

Having identified whether they would act now or later and implement large- or small-scale action, in the context of the different scenarios, participants were presented with the outcome of their choices<sup>13</sup>. Following this, there were no changes in views around acting now or later. However, reflecting on 2030, some participants who had opted for small-scale-action felt that this response was inadequate and shifted their preference towards a combination of both small- and large-scale action. When reflecting on the 2080 result, participants were still unsure about the best course of action to take. It was felt that the small-scale action result was **"disappointing"** (Greater Manchester, Workshop 3), but the large-scale one was overambitious. In response to this, some participants expressed a desire for a flexible plan, with various options and contingencies, which could be adapted based on how the future unfolds. This fits closely with the adaptive approach to planning and implementing climate adaptation, which is promoted in government policy such as the National Flood and Coastal Erosion Risk Management Strategy<sup>14</sup>.

### **"If this happens, we do x y z." Dartmoor and Exmoor, Workshop 3.**

<sup>13</sup> Not all groups had time to reflect on this at the end of Workshop 3 – the findings in this section present the reactions of those who did.

<sup>14</sup> <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>



### 3.3 Consideration of adaptation measures

The focus was narrowed in Workshop 4, as participants were introduced to six specific categories of adaptation measures: engineered and built environment, eco-system based, services, technological, social, and institutional measures (see **Figure 3.2**). Participants discussed their preferences regarding these measures in general and were then asked to consider their preferences through four scenarios centred around flooding, overheating, drought and wildfire, and coastal change and erosion (**Figure 3.3**).

**Figure 3.2: Adaptation measures presented to participants in Workshop 4**

- 
**Engineered and built environment** (including building standards, back up systems, and flood defences).
- 
**Technological** (including food preservation, insulation, new crop varieties)
- 
**Eco-system based** (including wetland conservation, natural flood management, increasing biodiversity)
- 
**Social** (including emergency plans, relocating local population, community resilience, public engagement)
- 
**Services** (including financial safety nets, essential public health services, infrastructure planning)
- 
**Institutional** (avoid development in high-risk areas, urban greening and new developments)

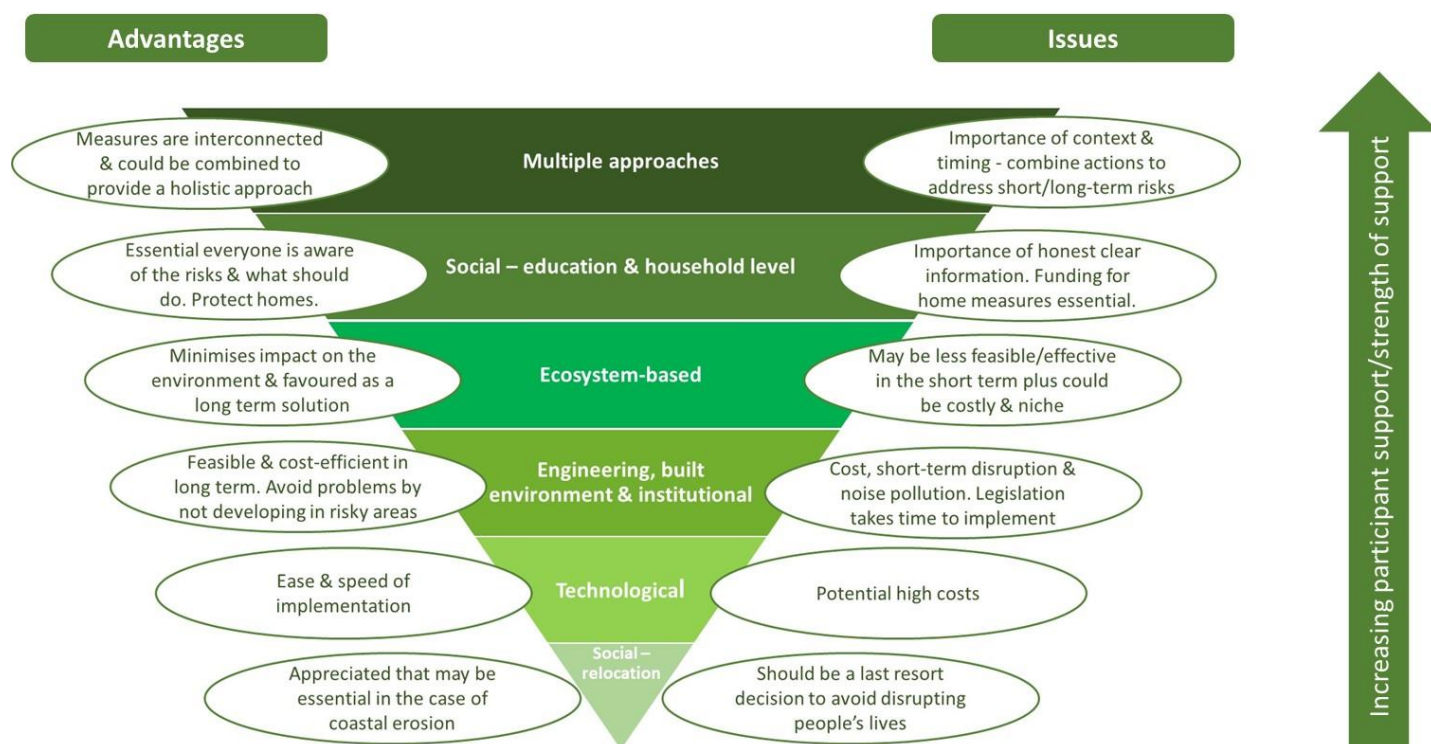
**Figure 3.3: Scenarios considered in Workshop 4**

- 
**Scenario 1: Flooding**  
 A large town near you is at increased risk of flooding on a regular basis. This leaves the area and its community vulnerable to property damage and people having to leave their homes, along with infrastructure and service disruption.
- 
**Scenario 2: Overheating**  
 A city near you is at increased risk of overheating on a regular basis. This leaves the area and its community vulnerable to significant public health impacts
- 
**Scenario 3: Wildfire and Drought**  
 A rural area near you is at increased risk of wildfire and drought. This leaves the area and its community vulnerable to public water shortages, decreased agricultural yields and increased food prices, and damaged wildlife, habitats and ecosystems.
- 
**Scenario 4: Erosion and coastal change**  
 A town near you is at increased risk of erosion and coastal change. This leaves the area and its community vulnerable to loss of property and land, and infrastructure collapse.

The focus of Workshop 5 was on where and with whom the responsibility for adaptation lies, however it also revisited the topic of adaptation option preferences in the four different scenarios from Workshop 4, so some responses from this workshop are brought into this section.

### 3.3.2 Types of adaptation measures

**Figure 3.4: Support for adaptation measures**



The graphic above depicts the participants' support for adaptation measures with a summary of the main advantages and key issues identified. Further detail is provided below regarding participants' views on each of the measures.

### 3.3.3 Multiple measures

Participants generally favoured a holistic approach to adaptation accounting for the fact that climate challenges tend to be both interlinked and multi-faceted. Across the scenario discussions, most participants felt a broad approach incorporating several different adaptation measures could be the way forward, feeling that the options were interconnected and could be applied together to create desired outcomes. Most participants did not identify clear preferences for specific types of measures and touched upon most adaptation measures when discussing each scenario.

**“I don't think they have to be stand-alone. Some scenarios where the engineered and ecosystem can be one in the same solution.”** Hull and East Riding, Workshop 4

Many participants felt the measures addressed different needs. For example, it was suggested that some may be more suitable in the long-term, such as ecosystem-based options, whilst others may be more suitable in the short-term. There was strong agreement that since all adaptation measures were seen as being interlinked, improving one would have a positive knock-on effect on the rest.

**“You’re looking at ecosystems and institutional as longer-term stuff to bring up the resilience of the town itself.”** Greater Manchester, Workshop 4

Some focused on the impact of adaptation measures, too, preferring solutions which addressed a range of problems. For example, some participants noted that the option to reintroduce beavers both helped to restore the ecosystem and prevent flooding.

**“I found the beaver thing quite interesting. That you get beavers to build dams.”** Hull and East Riding, Workshop 4.

Throughout the workshops, participants often brought mitigation options into discussions. At times, this may have been due to continued confusion between the two approaches, but there was also a conviction that England needs to do both – continue trying to combat climate change through measures to reduce emissions, whilst preparing for the changing climate through adaptation.

**“It goes back to the mitigation, but it's all sort of interconnected somehow.”** Exmoor and Dartmoor, Workshop 4.

Within the preference for a holistic approach, there were some measures that participants were more in favour of than others as detailed below.

### 3.3.4 Social - education and household level

Social measures referred to a broad range of adaptation measures, including emergency plans, essential public health services, communities, relocation, and public engagement. Of these, all participants in the dialogue across all cohorts identified education and awareness as the highest priority measure; it was suggested that public sector bodies supported by experts should provide the education and awareness-raising. This was a key finding, expressed strongly throughout all workshops and was seen as an immediate priority. This is discussed in more detail in **Chapter 6**.

Most participants also supported other social adaptation measures such as emergency plans and community resilience either as standalone options or alongside other adaptation options. Community grants and financial incentives for individuals and businesses were also suggested as early priorities by participants in Hull and East Riding (Workshop 6).

Participants further noted that sustainable behaviours, learnt through social adaptation, could be passed down through generations. Additionally, since both the implementation and effectiveness of social adaptation do not depend on area specific factors, these may be easily introduced to many regions and may have wider benefits such as enhanced community cohesion.

**“The social could have broader benefits than just obviously the climate element of it.”** Hull and East Riding, Workshop 4.

A less typical view was that social adaptation is not a reliable long-term solution; a few participants pointed out that many people would not want to change their way of life and that a stressful situation like climate change can overwhelm the population and lead to inaction. In response to this concern, almost all participants agreed that motivating the population to change their lifestyle should be done by presenting the positive outcomes of doing so to people, rather than the consequences of not taking action.

- “I think the change in society would take generations to do.” Greater Manchester, Workshop 4



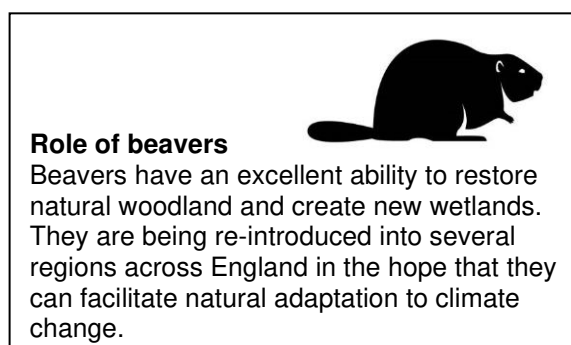
Where engineering options were a preference, some felt they should follow-on from prerequisite social options focusing on acquiring public understanding and support. There was also some preference to see public engagement and individual-level behaviour change at the forefront of adaptations, with participants highlighting the need to get people on board and feeling that understanding from communities and individuals is key to the success of other options.

Regarding the wildfire and droughts scenario, participants strongly believed that in addition to any adaptation, mass messages and warnings should be sent out to the community when a threatening phenomenon is approaching as occurs with imminent floods.

**“Locals living near the river have been provided with alarms that warn them of threats.” Dartmoor and Exmoor, Workshop 6**

### 3.3.5 Ecosystem-based measures

In Workshops 3 and 4, many participants favoured ecosystem-based adaptation, as they considered it to be the least environmentally disruptive option with positive impacts for nature, green spaces and wildlife preservation. The expert presentation in Workshop 4 highlighted the potential role of beavers in adaptation, for example. Support for ecosystem-based adaptation increased as the dialogue progressed, with natural solutions being favoured, wherever possible and in particular in the longer-term, by participants across the cohorts in later workshops including Workshop 6 and the National Summit.



**“Well, the ecosystem-based ones would have a really good effect on the environment.” Dartmoor and Exmoor, Workshop 4.**

However, some considered that using available natural resources, such as beavers, may be a niche and more costly option. A slight concern was expressed about the effectiveness of the beavers following the presentation. Some participants also suggested a need to focus on farming-related adaptations, highlighting that altering existing farming methods can help address climate-related risks such as soil erosion, flooding and decreasing yields.

**“Maybe we need to plant new crops [that] will change the way that farming is done.” Dartmoor and Exmoor, Workshop 4.**

Generally, participants felt that ecosystem-based approaches would be most preferable in an ideal world and in the long-term, particularly to manage flood risk, but there were some concerns regarding their immediate effectiveness and/or feasibility in practice.

### 3.3.6 Engineering and built environment measures

These measures related to both engineering solutions, to protect against flooding and coastal erosion, and adaptations to the built environment to make it more resilience to climate risks. Participants generally supported engineering adaptation options to manage flooding and coastal erosion.

**“From my point of view, be engineered because you’ve got the flood defences to protect the town, and then you’ve got the building standards.”** Dartmoor and Exmoor, Workshop 4.

This was particularly popular in the short-term, especially in the case of coastal erosion where participants emphasised the need for immediate protection. In Workshop 6, there was general agreement that immediate needs and short-term actions should be addressed straight away, including actions such as constructing flood defences where needed and individuals taking action, for example through planting trees in their gardens.

**“Bolstering the coastal line. That kind of work could be done slightly sooner.”** Dartmoor and Exmoor, Workshop 6.

Participants ranked built environment adaptations amongst the most feasible options, as it could be implemented at a pace that allows people to adjust their lifestyles. Ensuring that new build properties are resilient to climate impacts was recognised as crucial to help minimise: property loss, negative mental health knock-on effects, the cost of re-building and the need for relocation. Retrofitting existing stock by building in adaptation measures was also recognised as a vital step. Participants stressed that investing in the built environment now would be less costly in the long run, as opposed to re-building after each disaster.

**“For me, it would be engineering and the built environment.”** Inner London, Workshop 4.

However, the negatives of these measures were also highlighted – for example, the significant disruption this could cause to people, as shown in the quote below, noise pollution, and the potential cost implications in paying for adaptation measures (discussed in more detail in **Chapter 4**).

**“The engineered and built environment section could disturb people's lives quite a lot if there's a lot of building and construction.”** Hull and East Riding, Workshop 4

Overall, regardless of cost and potential disruption, participants were keen to see more adaptation take place, and saw engineering-based adaptations as important shorter-term options.

Longer term measures were also identified including strategic flood defences protecting large populations, desalinising water, and moving power stations to safer areas.

### 3.3.7 Institutional

Institutional measures include avoiding development in high-risk areas and urban greening in new developments. Across the workshops and cohorts, there was limited discussion of institutional approaches, although some participants cited institutional measures alongside built environment and engineering approaches such as using planning policies to prevent new developments being built on flood plains.

It also appeared that some participants construed institutional adaptation as relating to legislation and there was some concern that introducing new legislation may take time, which could lead to delays in taking action. Conversely, some participants in the Greater Manchester cohort (Workshop 6) also identified the need for national government to take urgent action to create adaptation legislation, deciding on national priorities and coordinate effort with local authorities. Securing funds for adaptation was also promoted as a required immediate action by participants from the Greater Manchester cohort at Workshop 6.

**“There are some very good institutional changes that you’d need to make there in addition to urban changes and greening.” Dartmoor and Exmoor, Workshop 4.**

An important institutional element identified by some participants in Workshops 1 and 4 related to the importance of learning from the experience of other countries with more extreme climates; for others, this meant implementing changes and learning from mistakes. Participants recognised that many of the challenges England will face, such as hotter summers, are already being well managed elsewhere and provide good opportunities for learning.

**“Researching how other countries deal with extreme weather.” Dartmoor and Exmoor, Workshop 4.**

A few participants also expressed some interest in water management strategies, the creation of a specialist coordinating body to prepare for and respond to climate emergencies, and greater input from and regulation of businesses.

**“Do they still build reservoirs? We have all this flood water we need to get rid of. Could we direct excess water to where we build reservoirs for times when things are dry?” Greater Manchester, Workshop 3.**

Participants in both the Greater Manchester and Inner London cohorts stressed the need to understand the implications of extreme events and plan for them, whilst some participants from Dartmoor and Exmoor suggested a need to conduct a risk assessment to understand the key challenges for the future<sup>15</sup>.

In Workshop 6, participants supported the need for a national plan and suggested that this should be a plan for the country, rather than a plan for government. It was considered that this plan could be cascaded down to local areas for delivery by local authorities, businesses, communities and individuals. Participants were generally not aware of the NAP but felt that that a national plan was needed which had implications for, and was relevant to, everyone.

More extreme measures were also suggested by two participants from Hull and East Riding (Workshop 6). These participants noted the currently growing population is likely contributing to climate change and making adaptation more challenging and suggested considering population control measures. It should be emphasised that these measures were suggested by a very small number of participants and were broadly considered in abstract rather than in seriousness.

### 3.3.8 Services

These measures included financial safety nets, public health services, and infrastructure planning. Support for service focused adaptation measures was less explicit than for the above actions, although there was some discussion around the importance of infrastructure planning and increasing the resilience of infrastructure (homes, hospitals, and transport). There was concern about the emergency services, who were identified as already being under a lot of strain and likely to be challenged by increasing demand. This was characterised as a potential barrier to their continued operation and ability to protect the public.

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<sup>15</sup> Interesting that this was highlighted as a requirement despite early sessions promoting the findings from the 2021 UK Climate Change Risk Assessment

**“Emergency services are obviously very important, making sure they’re available for everybody.”** Greater Manchester, Workshop 4.

### 3.3.9 Technological

Technological options were also highlighted as effective in adapting to overheating, wildfire, and drought, including air conditioning, rainwater harvesting and desalinating sea water. In particular, participants discussed the ease and speed of implementing technological options over other adaptations, such as planting trees. Additionally, some participants noted that technological improvements – such as improved energy efficiency – could result in cost savings for poorer individuals.

**“I like technological because especially now with concern around food and food prices and obviously heating - food cost affects the most disadvantaged.”** Greater Manchester, Workshop 4.

Air conditioning was the most popular technological option for dealing with overheating. However, there was some concern amongst participants that air conditioning would be counterproductive as it could contribute to increased carbon emissions. More generally, some participants were also concerned about the potential high costs of technological options. In contrast to concerns that air conditioning may do more harm than good, some participants expressed a preference for ecosystem-based options like tree-planting based on the premise that these options do contribute the least harm.

### 3.3.10 Social - relocation

Relocation was a controversial measure for many participants. Although acknowledging that in extreme cases of flooding or coastal erosion, where there is immediate threat and relocation may be the only viable option, relocation was commonly seen as a last resort due to the serious negative impacts for those affected in terms of losing their homes and the resulting mental health and financial implications.

**“Relocation splits up not just families, but communities, and friends. It’s a really extreme option.”** Dartmoor and Exmoor, Workshop 3.

**“Relocating is a last resort. It would be so devastating, that’s an impact in itself.”** Dartmoor and Exmoor, Workshop 3.

To reduce the need for relocation in the future, some participants identified the need to take preventative measures such as ensuring that planning policy avoids development in areas at risk of flooding and coastal erosion.

## 3.4 Barriers to adaptation

Participants generally had a positive attitude towards the feasibility of introducing multiple adaptation actions, citing the progress that had been made in certain sectors and countries as reassurance that it can be done.

**“I think a lot of [adaptation options] were feasible.”** Greater Manchester, Workshop 4.  
**“It’s all possible.”** Inner London, Workshop 4.

**“I was thinking it wouldn’t be too hard to change because other countries have done it already.”** Greater Manchester, Workshop 4.

However, there were also some concerns about the feasibility of some adaptations, such as relocation, and for each adaptation measure, participants consistently highlighted similar factors impacting their feasibility: cost, government support, public opinion (influenced by the current lack of awareness and education) and housing tenure.

The most likely cost impacts were identified as financial implications on small businesses and vulnerable individuals through utility bills and taxes. Challenges were identified in terms of funds available to tackle large-scale adaptation options, and the affordability for individuals wanting to adapt their properties. Participants felt that the most feasible way to address this barrier would be through government-funded financial support. However, around this, participants recognised the fact that paying extra tax to enable adaption options may be unpopular.

**“Everyone’s in a state where they can’t afford to spend on adaptations.”** Greater Manchester, Workshop 4.

There were some concerns on the feasibility of implementing adaptations generally, and maintaining long-term plans, which were primarily attributed to government-related issues. There was a strong view that government support is required for effective adaptation, particularly to support those on low incomes. Some participants also highlighted that government should provide support to farmers because there is a direct effect on the consumer, cost and food security-wise. Despite emphasising the national government’s role, almost all participants in the dialogue considered that national government had not invested enough money into climate change adaptation to date. There was a strong sense of frustration and mistrust with national governments, and a sense that changing policies in line with election cycles will mean it is not feasible to maintain long-term adaptation plans.

**“Do politicians get flooded? Does it happen to them? I guess it doesn’t. They don’t know what people are going through.”** Greater Manchester, Workshop 4.

**“I don’t have a lot of confidence with the current state of our politics in the UK that we will build the resilience we need.”** Dartmoor and Exmoor, Workshop 4.

**“We have a government that thinks short-term, the next political and budgetary cycle.”** Dartmoor and Exmoor, Workshop 4.

Public opinion was identified as a key barrier to adaptation. Participants generally felt that adaptation measures which were unlikely to be well received by the public, such as relocation and genetically modifying food, would be less feasible. In line with this, participants felt that awareness and education measures targeting public opinion would be an effective way to increase the feasibility of adaptation measures. Incentives were also a popular method to target public opinion and increase the feasibility of adaptation measures.

**“New crop varieties, that’s going to take a lot of time and there might be uproar about that depending on what they mean by crop varieties etc. What do they mean by preservation? Are they talking about modifying the food so it will stay fresh longer? Nobody is too agreeable with GMO food where it’s been modified, so that doesn’t really work.”** Inner London, Workshop 4.

**[In relation to relocation] “...maybe with people having more awareness and education, that can be a bit more feasible.”** Greater Manchester, Workshop 4

Another barrier to adaptation identified by participants was the question as to how small-scale, personal adaptations would work within the rental sector. Participants discussed how individuals who rent their home may be unable to make adaptations themselves without permission from landlords, or may be subjected to potentially unfair increases in rent to pay for adaptation measures. There was a feeling that climate risks would contribute further to existing problems renters face, such as the cost of living and limited property choices. There was also concern that renters may be reluctant or even unable to move onto the property ladder, due to potentially inadequate building regulations and concern that properties are not future proofed. This view was felt particularly strongly by those who had been personally affected by frequent flooding.

**“Is there going to be standards that landlord has to maintain to protect their property but also protect their tenants living there? If my rent went up even a little bit, I wouldn’t be able to live there anymore. I don’t know what I would do in that situation.”** Greater Manchester, Workshop 5.

### 3.4.1 Factors influencing decision-making

For some participants, making decisions about different measures was easy, describing the decision to act **“a no-brainer”**. For most others, questions that were also raised when playing the choices and consequences game remained pertinent when considering adaptation measures; these are outlined below.

- The inherent uncertainty of future climate scenarios proved to be divisive. For some this uncertainty made it harder to make decisions, with the numerous confounding factors making decision-making harder. Participants were concerned by the high level of risk, highlighting the potentially dire consequences of making errors (in particular being unable to protect the vulnerable) in the limited time available to make adaptations. As part of this, some participants also highlighted the fluctuations between current and future levels of risk as crucial in deciding where and when adaptation is required and the types of measures to be deployed.

**“If the risk were higher, you’d need more drive to implement these ideas. If the risk were lower, you could focus on slower, broader measures.”** Dartmoor and Exmoor, Workshop 4.

- As noted above, participants were also concerned that England had limited time for errors to be made, meaning there was pressure that the choices made were the right ones and were effective in addressing the priorities participants had highlighted, in particular protecting the vulnerable (see **Chapter 5** for further discussion of priorities).



- Participants considered how England needed to prepare for a range of sometimes contradictory set of events, such as increased flooding and increased drought, and how difficult it might be to adapt to both.

**“it’s also hard for the experts to make predictions or methods to adapt to this because they can predict flooding and everyone can adapt to flooding, but then we get a heatwave or something else... You can insulate homes for the cold but then they’re too hot for the summer. It’s very difficult.”** Inner London, Workshop 3.

- Current and potential future risks were also considered crucial in deciding where and when adaptation may be required, and the types of measures.

**“Well, going up 2 degrees and 4 degrees would be a huge difference. Going up to nearly a metre at 4 degrees [of sea level rise] is a massive difference from 30cm at 2 degrees. The water resilience measures they’re putting in place might cope with 30cm but it definitely won’t with a metre. We need to look at the worst-case scenario and see how we deal with it.”** Hull and East Riding, Workshop 3.

- Specifically relating to the scenarios, several found the lack of context in some of the scenarios made the exercises more difficult.

However, it is important to note that most participants felt that the barriers noted above, particularly relating to uncertainty, should not delay action and that it was important to act anyway – for some, this was due to the immediacy and urgency of the risk posed by climate change. In addition, it was highlighted that future risks need to be understood and long-term plans made rather than not acting because we are not fully certain about future impacts.

**“I’d rather be protected, even if I’m not 100% it’s going to happen. In 60 years’ time when we find out we didn’t need as much, but it’s there. I would still think it was the right thing to do.”** Greater Manchester, Workshop 3.

### 3.5 Final thoughts

In summary, the need for immediate action was largely undisputed although some concerns were voiced regarding what action should be taken due to the uncertainty surrounding the severity and timing of future climate change impacts. There was also a consensus that action should be ongoing and that acting now did not reduce the need for action in the longer-term. Participants prioritised social actions, particularly increasing awareness and engagement for the general public, which should happen immediately. In relation to different types of adaptation, participants supported ecosystem-based measures, followed by engineering, built environment, institutional and technological measures. Relocation was the least favoured option, but it was recognised that this may be unavoidable in some situations. Generally, participants were positive about the feasibility of adaptation options, but identified some key challenges such as costs and government and public support.

The next chapter will explore who is responsible for adapting to changing weather in England.

## 4 Responsibilities

### Key findings:

- Participants primarily placed responsibility on national government for setting standards, introducing regulation, and supporting people who are vulnerable.
- Big businesses were seen as needing to take more responsibility, but participants felt this may require enforcement from national government.
- Rural cohorts (Dartmoor and Exmoor, and Hull and East Riding) placed a stronger emphasis on the role played by communities than their urban counterparts.
- Individual responsibility was also recognised with a need for shared responsibility with individuals incentivised to implement small-scale actions after big changes are made by government.
- Participants were worried about the number of actors involved in responding to incidents, wary that this complexity may lead to delayed or less effective response measures. There were also concerns that current policy was reactive rather than proactive.
- Fairness was a key theme. Participants were anxious the most vulnerable should be protected, and that those who were responsible (primarily national government) should take those responsibilities seriously.
- Participants also emphasised the importance of local influence, with local government seen as responsible for applying the roadmap established by national government.

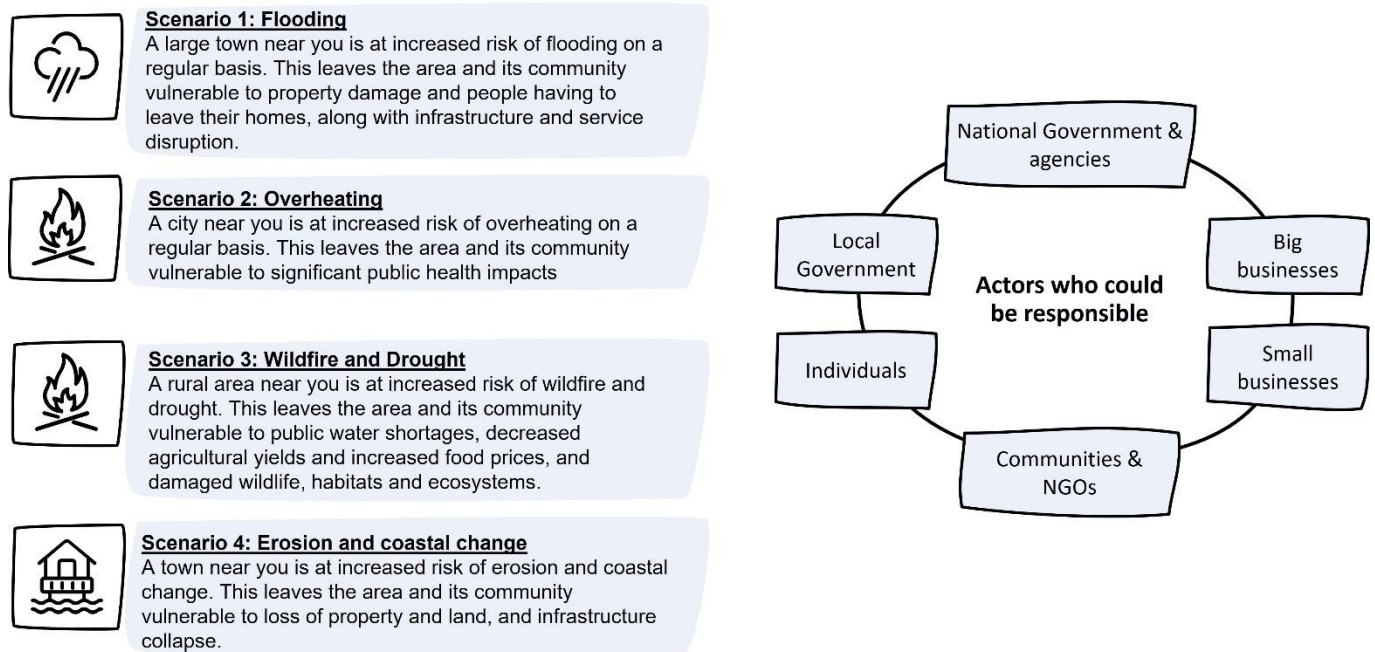
### 4.1 Introduction

This section covers topics discussed in Workshop 5, which asked participants to discuss who they thought should be, or is, responsible for the different adaptation actions discussed in Chapter 3. The chapter also brings in some findings from the earlier workshops and Workshop 6.

Workshop 5 asked participants which of the six actors shown in **Figure 4.1** should be responsible for different adaptation actions related to the scenarios identified (see Annex D for more details on scenarios).



**Figure 4.1: Overview of the scenarios and the actors who could be responsible for adaptation measures presented to participants in Workshop 5**

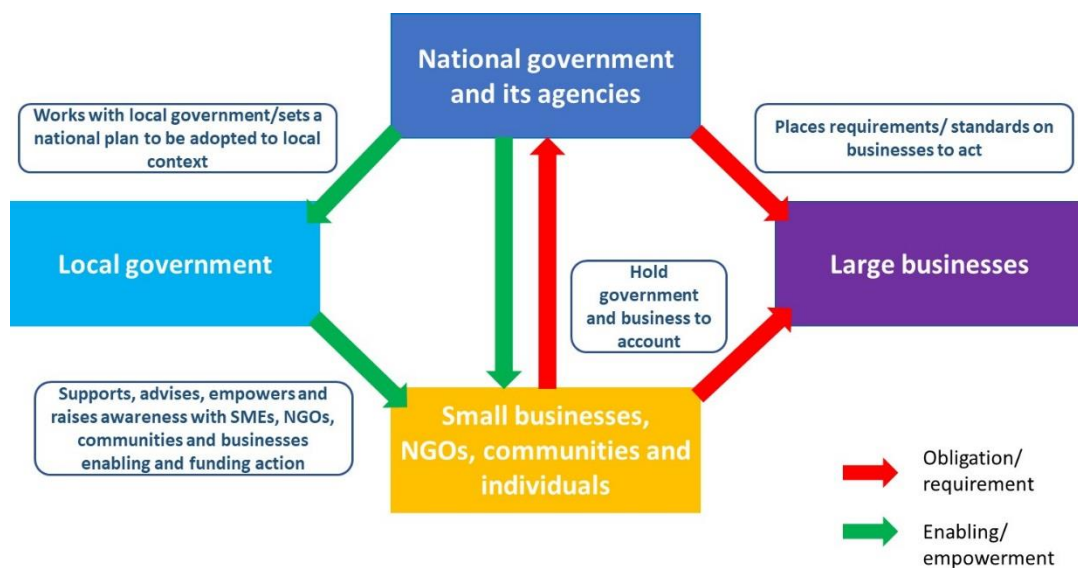


## 4.2 Who was seen as responsible, and the role they should play

Participants' views on where they considered responsibility should lie reinforced the views provided in earlier workshops where participants had identified national government as primarily responsible for making sure England is well prepared, particularly by providing leadership, commitment and funding. Individuals, communities and local government and business were also identified as having supporting roles to play.

The following graphic summarises participants' views on what they considered the different roles and responsibilities of different actors should be.

**Figure 4.2: Participants' perceptions of adaptation roles and responsibilities**



## 4.2.2 National and local government

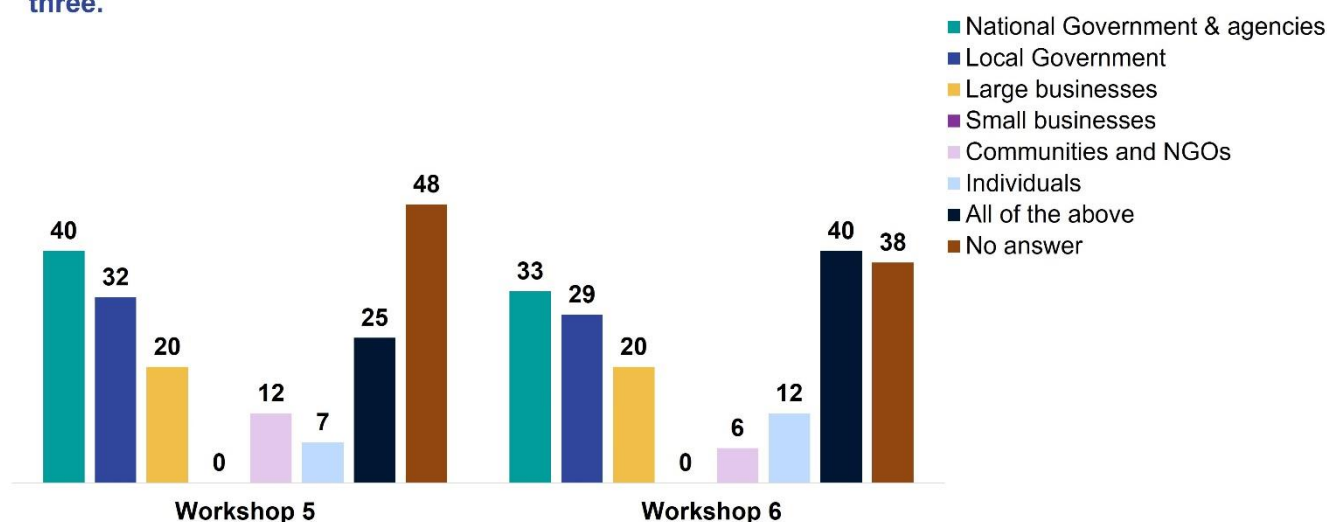
Overwhelmingly, participants believed national government should take primary responsibility for climate adaptation. Participants saw national government's role as being very broad: establishing roadmaps, setting standards, and providing funding. Fairness and protecting vulnerable people featured strongly as principles that the government should follow in delivering its role.

**“It’s a bit of a jigsaw puzzle, but you need the national government to put the framework in place.”** Greater Manchester, Workshop 5.

Amongst some participants, the view was that everyone had a role in combatting climate change. This view was also reflected in survey answers. Across the four cohorts, after Workshop 5, the answer indicating a shared responsibility was a consistently popular choice; support only grew following Workshop 6<sup>16</sup>.

**Figure 4.3: Participants’ views on who should be most responsible for adaptation to changing weather in England, all cohorts.**

**Who should be most responsible for adaptation to changing weather in England? Please select three.**



However, it is interesting to note that as participants progressed through workshops, the focus on the national government as being primarily responsible reduced slightly, while those stating, “all of the above” increased, as did those saying “individuals”. This may have been reflected in participants being encouraged to consider in Workshop 6 and the National Summit a future vision, which participants more frequently saw as being relevant to and involving input from all groups listed.

Indeed, in Workshop 6, participants emphasised the need for information and measures to be cascaded to regional agencies, and then to communities, businesses, and individuals. Collaboration between organisations at all levels was also identified as important. However, when discussing the idea of shared responsibility in the workshops, participants often noted that different actors had varying levels of

<sup>16</sup> The option for “shared responsibility” in the survey is encompassed in the response “All of the above” to the questions, “Who should be most responsible for adaptation to changing weather in England? Please select three.” This question was only asked to participants following Workshops 5 and 6. Across all the cohorts, 25 participants selected “All of the above” at Workshop 5, and 40 selected this at Workshop 6. It should be noted that for both there was a large amount of non-response, in particular from Cohorts 3 and 4.

responsibility. Importantly, participants consistently identified national government as the actor with primary responsibility.

**“They [the different actors] all play a part, just in different things. It would be nice to see guidance from the government and see movement.”** Inner London, Workshop 5.

Broadly, national government’s role was seen as setting a roadmap, establishing standards and regulations for individuals and businesses to follow, and managing the large-scale infrastructure projects such as sea walls and flood barriers. Participants’ views on national government’s role and responsibility were typically defined by a need for fairness and protecting those who are most vulnerable (Trade-Offs and Priorities are discussed in-depth in Chapter 5).

Participants identified the responsibilities of other actors in relation to their relationship to the responsibilities of national government and its agencies.

**“The government has the overall responsibility, to support the individuals, companies, and charities to implement it. Everyone is involved in some fashion, but it’s driven by the government.”** Dartmoor and Exmoor, Workshop 5.

This was certainly the case in the envisioned responsibility and role of local government. Although a few participants did seem to conflate local and national government, broadly defining their responsibilities as the same, most differentiated their role: national government provided the roadmap, set the standards, and allocated funding, which local government then applied to their local contexts. The importance of local input was emphasised by most groups, with participants underlining the need for lived experience to at least inform, if not define, responses to risks imposed by climate change.

**“So, the national agencies, they actually set the framework up for it to work from, and local government will feed into it, and they put their case forward of what fund they need because of the risks in their area.”** Dartmoor and Exmoor, Workshop 5.

However, participants were often cynical about the extent to which national government was *already* playing this role, and whether it could be trusted to do as it *should* in future. For some, change was required institutionally. Some participants suggested in Workshop 6 the need for a government department and a Minister specifically focusing on climate adaptation and climate change.

**“You need somebody with the title “Minister for Climate Change” in big, bold letters.”** Dartmoor and Exmoor, Workshop 6.

Conversations surrounding national government’s responsibility sometimes became political, with disbelief in political willingness to make the necessary changes in their priorities and pushing action to adapt to climate change, specifically pertaining to the current government. For a few others, there was a sense that party politics and the inherent uncertainty that comes with a democratic system do not help address such long-term, existential threats as climate change. Indeed, a few participants in workshops 5 and 6 said that the best solution would be to establish an apolitical, independent and, perhaps, international body that could take on the responsibility of addressing climate adaptation, clearly highlighting their lack of belief in the ability of a government working within party politics and election cycles to combat the issue.

**“No political agendas [...]. Someone truly independent and doing it for the people.”**

Greater Manchester, Workshop 5.

In Workshop 6, there was a suggestion by some participants in Greater Manchester that there should be a taskforce dedicated to promoting and facilitating adaptation by local authorities and small businesses, providing a trusted source to disseminate consistent messages (for more details on participants' views on communications, see Chapter 6).

Most participants identified that the role of local government was to apply government guidelines and frameworks in the local context.

This followed a presentation regarding the various actors involved in reacting to climate influenced incidents, using the example of the Gloucestershire Floods in 2007<sup>17</sup>. The most commonly voiced concern after this presentation was the complexity involved in responding to incidents and adapting local communities – in particular, the complex relationship between national and local government agencies. Amongst participants, there was a sense that this network may lead to complications, including delays or disjointedness in organising responses to extreme weather events, or the different organisations shifting accountability away from themselves.

**“How on earth does anything get done with all of those people trying to do different things?”** Dartmoor and Exmoor, Workshop 5.

There were also worries around what participants saw as a lack of urgency in adapting to climate risks. In questions put to experts, most groups queried what had been done since the 2007 floods. Participants often argued that climate adaptation measures from the national and local governments should be *proactive* rather than *reactive* and appeared frustrated when considering the events of 2007 and what they saw as lacklustre action since then. This opinion tended to be unchanged following experts' answers on what the response had been and its costs and is consistent with frustrations expressed in earlier workshops (see Chapter 3).

**“It's worrying that this was all funded after the event. It's being reactive. I thought it was a scary thing [...]. We are meant to stop it before it happens.”** Greater Manchester, Workshop 5.

In terms of *who* participants thought *should* be responsible, participants often spontaneously indicated that responsibility lay predominantly with the national government. Some participants expressed frustration at what they saw as the failure of national government to learn from previous mistakes (most prominently referring to the 2007 Gloucestershire flooding), and at the delay in addressing the challenges posed by climate change. This perspective was expressed with particular strength by one group in Inner London, alongside desires for responses to be entirely apolitical, and feelings of powerlessness as citizens.

<sup>17</sup> The floods in Gloucestershire in July 2007 were part of a series of floods throughout England, caused by unusually heavy rainfall throughout June and July. In one day (20<sup>th</sup> July 2007), Gloucester received the 1.5 times the amount of rainfall that was usual for the entire month of July. An inquiry was launched following the floods, to assess the contributory causes of the summer flooding, risks to infrastructure, and assess lessons to be learned.

<http://glostext.gloucestershire.gov.uk/Data/County%20Council/20071121/Agenda/Scrutiny%20Inquiry%20into%20the%20Summer%20Emergency%202007.pdf>

**“They put the fire out but it’s still simmering. Like a volcano, it’s still going on underneath, and one day it’s going to go and we’ll all get buried beneath it.”** Dartmoor and Exmoor, Workshop 5.

In contrast, a few participants argued for individual accountability, in particular at the community level, highlighting that education and communication could motivate individuals to take action and, perhaps, change their behaviours. Community responsibility was marginally more commonly expressed by rural cohorts than by those in urban contexts.

The need for more urgent action was often paired with a strong desire for there to be more awareness of the issue. As noted in Chapter 3, most participants felt ill-informed about climate adaptation prior to these sessions and cited the process as **“opening their eyes”**. Calls for more education and communication surrounding climate change and its risks may have been a reflection of their own response to this newfound knowledge.

#### 4.2.3 Big businesses

The responsibility of big businesses tended to be prefaced with a sense that their current contribution is insufficient when compared with their disproportionate contribution to climate change, both historically and presently. While big businesses’ role was vague in relation to adaptation, participants generally thought they should be paying more tax as well as making other positive contributions – for example taking responsibility for adapting the services or infrastructure they currently provide and profit from (rail companies adapting railway tracks, for instance).

**“They’re expecting a lot of the public. How much pollution is coming out of my house compared to Warburton’s factory down the road? They should expect a lot more of the businesses.”** Greater Manchester, Workshop 4.

**“Big companies should be taxed and it should go towards this pool to, for example, make air pollution better [...], because they’re the ones who polluted our air in the first place.”** Greater Manchester, Workshop 5.

As a result, participants typically favoured a “stick” approach from national government to big businesses; this was sometimes also applied to wealthier or more influential individuals. Participants envisaged the government doing so in two ways: by setting standards and enforcing them, or through taxation, either by establishing a green or carbon tax based on prominence of current or historic emissions, or by enforcing current taxation rules to get large businesses to pay what participants saw as their fair share.

**“I also think businesses that have a negative impact on the climate should be taxed more, both to incentivise them to be more green, but also, it’s a way of making money off them as well.”** Greater Manchester, Workshop 5.

This view extended to Workshop 6, where participants in the more rural cohorts (Hull and East Riding, and Dartmoor and Exmoor) identified this need for businesses to be more accountable through government legislation or penalties. In Workshop 5, some groups in the Dartmoor and Exmoor, and Hull and East Riding cohorts, had more detailed responsibilities on which should be businesses’ responsibility when considering Scenario 3 – wildfire and drought.



### The role of businesses in Scenario 3: Wildfire and Drought.

In the Dartmoor and Exmoor cohort, one of the breakout groups highlighted businesses' responsibility when it came to **specific adaptation options that were within their remit**. For example, adaptation options for Scenario 3 included implementing efficient irrigation and water systems, as well as the establishing of connected desalination plants. Participants in this cohort suggested that local water boards and water companies should have responsibility for establishing these adaptation options.

In the Hull and East Riding cohort, discussion around responsibility in this scenario more broadly applied to **big businesses' responsibility to innovate their own products**, for example to make energy efficiency improvements to make adaptation options more affordable for individual consumers. This was envisaged as being separate from national government intervention and was seen as an important imperative for businesses to take on themselves.

#### 4.2.4 Small businesses, local communities, and non-governmental organisations (NGOs): the importance of the local

The responsibility of small businesses, communities, and NGOs was not discussed in a detailed way, although they were often included in discussions about the importance of the local context. Small businesses were sometimes incorporated into discussions around protecting vulnerable people. The role of local organisations and communities were sometimes seen as providing education or activism.

Small businesses and local communities were sometimes included in discussions around protecting vulnerable individuals. For example, when looking at the personas in the flooding scenario, some participants expressed an emotive concern for the small-business owner, believing they should be protected; for others, there was a similar sense of personal responsibility as with individuals.

**“It’s people who are working class, individuals and small businesses, who will feel it most.”** Dartmoor and Exmoor, Workshop 5.

A broad theme unifying discussions around these actors was the importance of local. As previously noted, participants felt that local government should practically apply the funding and strategies mapped out by national government, because they understand the local context.

Several groups felt strongly that individuals and communities with lived experience of the local challenges should help shape the direction of government policy – and, indeed, that it was national government’s responsibility to facilitate this.

**“It starts with the individuals. Listening to their views and then bringing those views forward. Then local government, then national.”** Greater Manchester, Workshop 5.



## The importance of the local in Scenario 4: Erosion and Coastal Change for Dartmoor and Exmoor

For one group in Dartmoor and Exmoor, this scenario was closer to home. The group grounded an otherwise difficult to imagine situation into a more concrete and emotional reality through applying it to the context of pubs and villages near to them who faced the prospect of devastating coastal change.

The group used these local examples, and their ability to understand the geographic context of, for example, a local pub, to recognise the difficulties associated with holding one single actor accountable. Participants noted that, while they would expect the government to take some responsibility for relocating, if it came to that, and for other adaptation options, there was a strong element of individual responsibility needed, too. This encompassed both citizens and small business owners, and included using foresight, recognising the risks, and supporting other members of their local community.

Some participants also highlighted that local communities could and should be a source of support. One group in Hull and East Riding appeared quite cynical about the potential role of local communities, with one participant even stating local communities were either dead or dying. However, for others, recent experiences with the pandemic had given them some hope for the resilience of communities, recalling how communities and individuals came together to support those most vulnerable. In general, the rural cohorts in Dartmoor and Exmoor, and Hull and East Riding placed a stronger emphasis on the role played by communities.

**“How we responded to the pandemic has been a lesson and I guess we can take some of those lessons into managing climate change.” Dartmoor and Exmoor, Workshop 5.**

Other participants emphasised a different role for local communities: one of education, communication, and activism. These participants felt that local communities, NGOs, and individuals could play a vital role, both in communicating to the public about the risks and what actions they may take, but also as activists, lobbying and holding those who participants saw as failing in or falling short of their responsibility to account. This will be discussed further in Chapter 6.

### 4.2.5 Roles and responsibilities of individuals

Participants' vision for the roles and responsibilities of individuals was more mixed. While most agreed that individuals had some level of responsibility, there was also a strong sense that the issue was both too large and often too expensive for individuals to be obligated to tackle alone. There was also a general resignation to the fact that individuals would be ultimately paying for adaptation measures, primarily through taxation.

Participants' views regarding the role of individuals were less clear-cut than that of national government and big businesses – although it was, again, often defined in relation to that of the national government. There was a strong sense that the issue of climate adaptation was both too large and often too expensive for individuals to be obligated to tackle it alone.

**“This can’t happen on an individual level. It’s an added stress.”** Greater Manchester, Workshop 5.

In this vein, participants envisioned a “carrot over stick” approach (the opposite to the approach used for big businesses). Participants emphasised the imperative of national government to protect vulnerable people, suggesting that this may involve providing subsidies or grants to allow more vulnerable people or those in lower incomes to install adaptations they otherwise would be unable to afford.

In one group, participants envisioned the “carrot” approach going further, for example, through national government investing in green jobs to help facilitate a larger skills base for businesses to draw from to deliver different adaptation options. This tended to be emphasised more strongly for technological adaptation options, for example building and maintaining desalination plants.

**“Nature can adapt, but we can too. There’s some great technology and research out there, and we need to show we can do that.”** Inner London, Workshop 5.

Some participants envisaged a greater responsibility for individuals to act than others. For some in Workshops 5 and 6, as previously noted, the role of individuals was to take on smaller-scale adaptations, such as retrofitting their homes, while it was the responsibility of national governments to take on the large-scale, strategic adaptations like flood defences. A few participants argued that individuals had responsibility to protect their own properties and families, and to exercise foresight. For example, when discussing purchasing houses on flood plains, some participants argued that individuals needed to take responsibility for their decision to do so. There was also a sense, for some participants, of a need for shared responsibility, with individuals being able to implement small-scale actions after big changes were made by the government.

**“Over time, once they’ve [national and local government] implemented these large changes, maybe the small-scale actions would take over which maybe falls more on the individual [...]. It’s our responsibility to learn to live the correct way.”** Greater Manchester, Workshop 5.

**“Everyone has to help; the only way to do it is for everyone to help in one way or another”.** Greater Manchester, Workshop 4.

These participants sometimes struggled to differentiate between mitigation-based individual behaviour changes that they were more familiar with (such as installing solar panels) and individual adaptation actions like installing shutters on windows. In the same vein, some participants highlighted that people would need to adapt to government standards and regulations through changing their diets and waste behaviours, as well as through investing in property-based adaptation options.

**“The infrastructure things will always be done by government, but again, with trying to get to negative carbon, I think a lot of it will be how individuals adapt.”** Inner London, Workshop 5.

However, even participants who strongly emphasised the need for individuals to take greater responsibility for their own adaptation actions tended to recognise that those on the lowest incomes would be unable to afford most adaptation options, and that in this scenario it was almost a given that national or local government should provide assistance.

## Scenarios 1 (Flooding) and 2 (Overheating): Property-based adaptations

The different scenarios saw participants highlighting slightly different roles and responsibilities of individuals, although they continued to follow the same general lines. In scenarios where property-based adaptations were more feasible – in particular, those pertaining to flooding and overheating – participants tended to emphasise different responsibilities based on tenancy. In general, they agreed that the party which owned the property needing adaptations should provide, except where homeowners were unable to afford more expensive options.

These conversations often featured concerns that landlords would unfairly raise rents in areas at greater risk of flooding or would not ensure safe living standards for tenants in properties at risk of overheating. These views were expressed both in Workshop 5 and Workshop 6, the latter being separate from the above scenarios, and was expressed in Workshop 6 with particular strength in Inner London cohorts. In both situations, there was a desire for government intervention to ensure fairness.

Some suggested that government should take strong action, for example, making adaptations such as shutters mandatory in all properties, however there was some concern around forcing individuals into adaptation. Different views on this issue are illustrated below:

**“People are like sheep, and if you don't have headers saying we're doing this and this is what you should do, it'll go by the wayside.”** Inner London, Workshop 5.

**“I think if you try and force something onto people they can step back and do the opposite.”** Greater Manchester, Workshop 4.

The role that participants broadly agreed individuals would play was more passive – paying taxes. During Workshop 5, after participants had discussed who would be responsible, most were asked *who would likely pay* for adaptations, *who should pay*, and *who would pay* for inaction. Participants generally felt that the cost of both action *and* inaction would fall to individuals, small businesses, and local communities, disproportionately and unfairly impacting those who are poorest and most vulnerable.

**“It's always the people with the least money who get affected disproportionately because they don't have the resources to manoeuvre themselves out of the situation.”** Hull and East Riding, Workshop 5.

For others, fairness also played a role when thinking about *who will*, and *who should*, pay for adaptations to climate change, particularly when discussing larger-scale options, such as sea walls or flood barriers. As noted above, participants seemed to be resigned to fact that the average person would likely pay, either through increased taxes, increased cost of goods and services (for example, insurance premiums increasing), or both. There was a sense among some that this was something individuals *should do*; for others, this seemed unfair.

**“It's always going to be us. We're paying our taxes to the government.”** Greater Manchester, Workshop 5.

Notably, despite the overwhelming emphasis put on national government's responsibility, participants tended to be unhappy at the prospect of increased taxes. For some, this was because they felt they

could not afford any further tax increases. One participant who felt this way expressed feeling guilty because they saw it as their responsibility to take actions and facilitate greater government action to do so, but they simply could not afford this. Another group, when discussing the current cost of living crisis, noted sadly that while decisions around climate change should not come down to costs, for many they would by necessity – they were evidently quite impacted by images and stories that were in the news. It is important to note that the dialogue was conducted as the cost of living crisis started to emerge; it is possible that if the dialogue were to be repeated now (just two months later), these concerns would be much higher. This group recognised that, for many people, adaptation measures were and would continue to be prohibitively expensive or would be an expense that could be spent on something else that was more immediately urgent.

**“Unfortunately, it’s not a priority for some people. As important as climate change is, putting food on the table is going to be at the forefront.”** Hull and East Riding, Workshop 5.

For other participants, reticence to accept increased taxes was more based on principle. There was a sense of frustration at the notion, particularly given that most felt they did not know where their taxes were spent. Others, while reluctant for taxes to increase, said this may be acceptable if there was more transparency around how taxpayers’ money was used or if the increase was for an explicit purpose over a limited period. A few were happy for taxes to increase without these pre-requisites, but aside from these few, there was overall a sense of pessimism that individuals would have to pay for adaptations. This was tied to frustration that others were shirking their responsibilities – and were being allowed to do so by the government – again pointing to big businesses and wealthy individuals.

**“The wider population is definitely paying for the greed of the one percent because they are the ones impacting the planet the most.”** Greater Manchester, Workshop 5.

### 4.3 Final thoughts

In summary, participants placed an overwhelming emphasis on the responsibility for national government in adapting England to climate change and shared a fairly unified view of what role this would entail. Indeed, there were remarkably few notable differences in views between cohorts and the scenarios that were being discussed. The roles and responsibilities envisioned for most, if not all, other actors highlighted by the dialogue were in the context of this clear, overarching role for national government, and were often preoccupied with a firm desire for fairness, protecting individuals, and others (such as big businesses) to pay their dues. The only noted difference in views between cohorts was that those in rural locations (Dartmoor and Exmoor, and Hull and East Riding) were more in favour of community responsibility than their urban counterparts.

The next chapter examines priorities, trade-offs and future vision for a well-adapted England.

## 5 Priorities, trade-offs and future vision

### Key findings:

- Participants were more concerned about the outcomes from adaptation action (in terms of who and what should be supported) rather than prioritising types of risk or action. Across all cohorts, most participants favoured adaptation that supported people who are vulnerable due to their personal circumstances and where they live.
- The next priority was protecting basic human needs in terms of food supplies, health, transport and utilities infrastructure.
- Most participants supported adapting their own lifestyles so that our responses are most cost-effective with small-scale actions affecting homes being accepted as the responsibility of individuals whilst major challenges such as potential relocation being down to the government.
- The vision for a well-adapted England incorporates human safety and well-being with access to basic services and well-maintained infrastructure, a prosperous economy that capitalises upon green opportunities and provides green jobs, sustainable agriculture and increased urban greenspace and a fair distribution of economic impacts with no exacerbation of existing inequalities. England is ready and flexible to change; everyone is educated and prepared to manage climate challenges and net zero and adaptation measures work together.

### 5.1 Introduction

This section covers the key questions that Defra/Sciencewise wanted to address through the dialogue in terms of '*What should the priorities be when it comes to adaptation?*' bringing in any potential trade-offs that may need to be considered in terms of competing priorities and '*What does a well-adapted England look like?*' It is primarily based on outcomes from Workshop 6 – 'What a well-adapted England should look like' and the National Summit, but also reflects on findings from earlier sessions that asked the same questions.

### 5.2 Principles and trade-offs

The data obtained from Workshops 1- 6 was used to identify a number of principles (key priorities) and trade-offs regarding climate adaptation to be discussed at the National Summit. These principles emerged in discussions about how England should adapt to climate change and are intended to reflect the views of participants across the workshops. The priorities and trade-offs are set out below.

Principles	Trade-offs
<p>Community Principles:</p> <ul style="list-style-type: none"> <li>• Prioritise those who are at the highest risk of economic or health impacts</li> </ul> <p>Location Principles:</p>	<ul style="list-style-type: none"> <li>• Focus on maintaining everyone's lives and livelihoods vs. prioritise actions and resources</li> <li>• Take a proportionate approach e.g. cost-benefit analysis or prioritising e.g. those most</li> </ul>

Principles	Trade-offs
<ul style="list-style-type: none"> <li>• Prioritise those living in areas that are most at risk of extreme weather impacts i.e. incidents on the most regular basis or causing the most significant damage</li> <li>• Prioritise the areas with highest populations</li> </ul> <p>Risk and uncertainty principles:</p> <ul style="list-style-type: none"> <li>• Prioritise addressing risks we are certain of</li> <li>• Prioritise the areas that offer the highest cost-benefit for investment</li> </ul> <p>Lifestyle principles:</p> <ul style="list-style-type: none"> <li>• Prioritise preserving what we can in our current lifestyles</li> <li>• Prioritise adapting our lifestyles so that our responses are most cost-effective</li> </ul>	<p>at risk/highest population vs. do as much as possible to reduce as many risks as possible</p> <ul style="list-style-type: none"> <li>• Preserve as much as we can in our current lifestyles vs. adapt our lifestyles to be most cost effective</li> <li>• Prepare for most likely outcomes vs. prepare for the worst</li> </ul>

At the National Summit, the principles and trade-offs were presented and then three experts provided observations on these. The observations highlighted that prioritisation inevitably results in trade-offs whether this is different groups of people, climate risks or geographic areas. As a result, there is a need to plan for a range of outcomes and consider how these could affect different groups/risks/areas. In considering risks that are certain (we understand how likely they are and what the impacts are likely to be), we need to be careful about prioritising these over uncertain risks as this may not be the right approach in the long-term.

Another observation was that different climate hazards impact in different ways locally, for example inland flooding can often be more easily managed coastal flooding. In addition, there is a need to consider the immediate localised effects of climate hazards occurring, but also the wider cumulative impacts across the country such as impacts on food production and security. Ultimately, there is a need to employ a mix of adaptation actions to address multiple impacts and ideally these actions should facilitate multiple benefits.

The health impacts of climate change were identified as a priority along with the impacts for more vulnerable communities and the need for changes to building regulations to ensure new buildings are resilient to climate change as well as retrofitting existing properties.

Participants then discussed the principles in relation to the scenarios previously discussed and replicated in **Figure 5.1**.



**Figure 5.1: Scenarios considered during the workshops**



**Scenario 1: Flooding**

A large town near you is at increased risk of flooding on a regular basis. This leaves the area and its community vulnerable to property damage and people having to leave their homes, along with infrastructure and service disruption.



**Scenario 2: Overheating**

A city near you is at increased risk of overheating on a regular basis. This leaves the area and its community vulnerable to significant public health impacts



**Scenario 3: Wildfire and Drought**

A rural area near you is at increased risk of wildfire and drought. This leaves the area and its community vulnerable to public water shortages, decreased agricultural yields and increased food prices, and damaged wildlife, habitats and ecosystems.



**Scenario 4: Erosion and coastal change**

A town near you is at increased risk of erosion and coastal change. This leaves the area and its community vulnerable to loss of property and land, and infrastructure collapse.

### 5.2.2 Principles (key priorities)

Overall, the focus on those most at risk (through personal circumstances and exposure to climate hazards) remained a priority throughout the dialogue which was reiterated and reinforced at Workshop 6 and the National Summit. When it came to adaptation measures, there was less of a consensus although the principle which garnered most interest and was discussed in depth related to *prioritising adapting our lifestyles so that our responses are most cost-effective*. Again, as detailed earlier, the focus was on individuals taking small steps and government/other agencies taking the main strategic decisions such as the need for relocation where communities become unsustainable due to the threats from climate change.

#### *Community priorities*

From the first workshop in the dialogue, participants across all cohorts were more concerned about getting the right outcomes rather than focusing on specific risks. For example, in Workshop 3, protecting the most vulnerable people was considered a priority.

**“The vulnerable are going to be most impacted; struggling with flooding and the heat.” Greater Manchester, Workshop 3.**

All groups agreed with prioritising those at the *highest risk of economic and health impacts* (a consistent theme throughout the dialogue), particularly emphasising the need to protect vulnerable, poorer or older people, but there were different views between groups about whether *those most at risk* (who are not vulnerable through personal circumstances) should be prioritised. Some agreed because even if this is a small population, they should not have to relocate as government has a duty to care for everyone and everyone should have the right to stay in their home. In addition, some highlighted that the costs resulting from repeated events (for example repeated replacement of possessions damaged by flooding and challenges obtaining insurance) will be considerable and therefore people in these areas should be prioritised for support.

**“That’s people’s homes, it doesn’t matter if it’s five or one, you can’t keep ripping people out of their homes. So, if it is a small number then yes you still need to protect them without kicking them out of their own homes.”** National Summit.

There was some difference in relation to who/what should be prioritised for support in relation to the individual scenarios. For all scenarios, participants considered that those most at risk, due to personal circumstances (health/age/low income) and exposure to climate risks, should be prioritised for support and protection.

**“The biggest priority is the vulnerable in society, those unable to help themselves.”**  
Hull and East Riding, Workshop 6.

It is interesting to note that despite the information provided throughout the dialogue, participants’ views on who should be prioritised for support remained constant throughout the dialogue. When participants were first asked about who should be prioritised (Workshop 1), the most common response was those who are most vulnerable, including older people, young people and children, those on lower incomes, those with illnesses or disabilities, and homeless people, followed by infrastructure and services, including transport networks as well as health and education services and farming and food and water availability. The focus on fairness and supporting people who are vulnerable remained a priority from start to finish, with participants often recognising that those least responsible for climate change were likely to be those most affected by it.

**“The vulnerable and the elderly. My parents and my wife’s parents are still alive but they are getting older and they are relying on more things for help, and so you like to think they will be helped first because helping ourselves is easier for us than them.”**  
Workshop 6, Greater Manchester.

### *Location-based priorities*

Priorities relating to location elicited a more mixed reaction, with different opinions over whether to prioritise areas most at risk of extreme weather impacts, or those with the highest populations, although most participants appeared to settle on the former following discussions. In Workshop 3, participants expressed concern that wealthier parts of the country or those where there were political interests would get more support to adapt to climate risks than other areas, again highlighting a desire for fairness from participants in the dialogue. Outside of London, a few participants seemed worried the focus of climate adaptation action would be on the capital.

In discussions regarding the urgency of action, participants again struggled to decide where to prioritise. Some felt the need to act was particularly urgent in areas that were at greatest risk, areas that contained valuable infrastructure such as schools and hospitals, or urban areas due to the high population density and the potential for greater run-off of rainwater due to less porous surfaces. Other participants felt that everyone needed urgent protection, regardless of the area and the amount of people that would be affected.

**“Do the areas where it will make the biggest difference first.”** Greater Manchester, Workshop 3.

Coastal areas were specifically highlighted as a priority for protection to avoid people potentially losing their homes recognising the stress this could induce.

**“Hadn’t considered it much before the workshop but one of the videos showed people are taking their own lives due to stress associated with flooding.”** Hull and East Riding, Workshop 6.

The scenarios also showed a situational nuance to these priorities in Workshop 6 and the Summit. For example, in relation to overheating, participants emphasised fairness but also identified the need to protect those that work outside and also prioritise large cities like London where there are concentrations of population and temperatures are likely to be higher due to the urban heat island effect. In contrast, when considering the coastal erosion scenario, participants leaned more towards prioritising areas at highest risk, highlighting the importance of considering mental health impacts due to the stress that can be created by the threat of relocation.

**“Prioritise places with the highest populations, I think that’s pretty silly. London is quite flat so you wouldn’t get as much flooding as those who live in hilly areas. You’re punishing people who don’t live in big built up cities. I don’t think it’s fair for people who live in the countryside where you’re more likely to get flooded.”** National Summit.

One break-out group was concerned about the trade-off between areas with the highest populations or areas at high risk and considered that whatever approach was adopted, there will always be people who feel that they have been treated unfairly. A different group expressed concern that prioritising areas with higher populations could be perceived as punishing people who live in rural areas or smaller towns and villages.

**“I think fairness as a concept is a difficult way to frame it. You can’t say we should help areas with the largest population, like if you live in London and if you don’t, we can’t help you. I am not sure I like the idea of fairness because obviously as an individual in any of these situations you feel your needs are important and they are. I don’t think you can say one person’s life is more important than another, so it is challenging. You can have the view of helping the most people and the most impact, that is different to fairness.”** National Summit.

### *Lifestyle priorities*

Whether we should prioritise *preserving what we can in our current lifestyles* brought out two different but not necessarily mutually exclusive views. One participant highlighted that relocation should be avoided at all costs as this could be very challenging for many people. The participant herself felt that she would be terrified if she was asked to do so. Another participant considered that the need to change our lifestyles is inevitable and that we need to adapt and do so already, for example when hosepipe bans are enforced. Their view was that we should prioritise *adapting our lifestyles so that our responses can be as cost-efficient as possible*, but individuals need advice on how to do this from government and other national agencies. It was suggested that day-to-day lifestyles can be changed with small actions, but much larger changes, such as relocation, need to be strategic decisions made by national and local government that are developed in collaboration with communities.

**“You can’t preserve the current lifestyle - it’s our lifestyle that caused the problem in the first place, if we carry on the way we are we make the whole situation worse.”** National Summit.

Following the focus on people, the next priority was protecting basic human needs in terms of food supplies, health, transport and utilities infrastructure.

Prioritising vulnerable people, those at greatest risk and basic infrastructure were supported by all cohorts. In Workshop 6, participants from Dartmoor/Exmoor and Hull and East Riding also identified farms, ecosystems and wildlife. East Riding and Hull was the only cohort that suggested businesses should be prioritised. Interestingly one participant candidly identified their priorities as their self, their family, their job and their way of living. And another, highlighted the issues that should not be prioritised such as heritage.

**"We've got a lot of money to spend, and it's got to be spent on things that can be used for climate change. We can't waste it on monuments and things like that."** Hull and East Riding, Workshop 6.

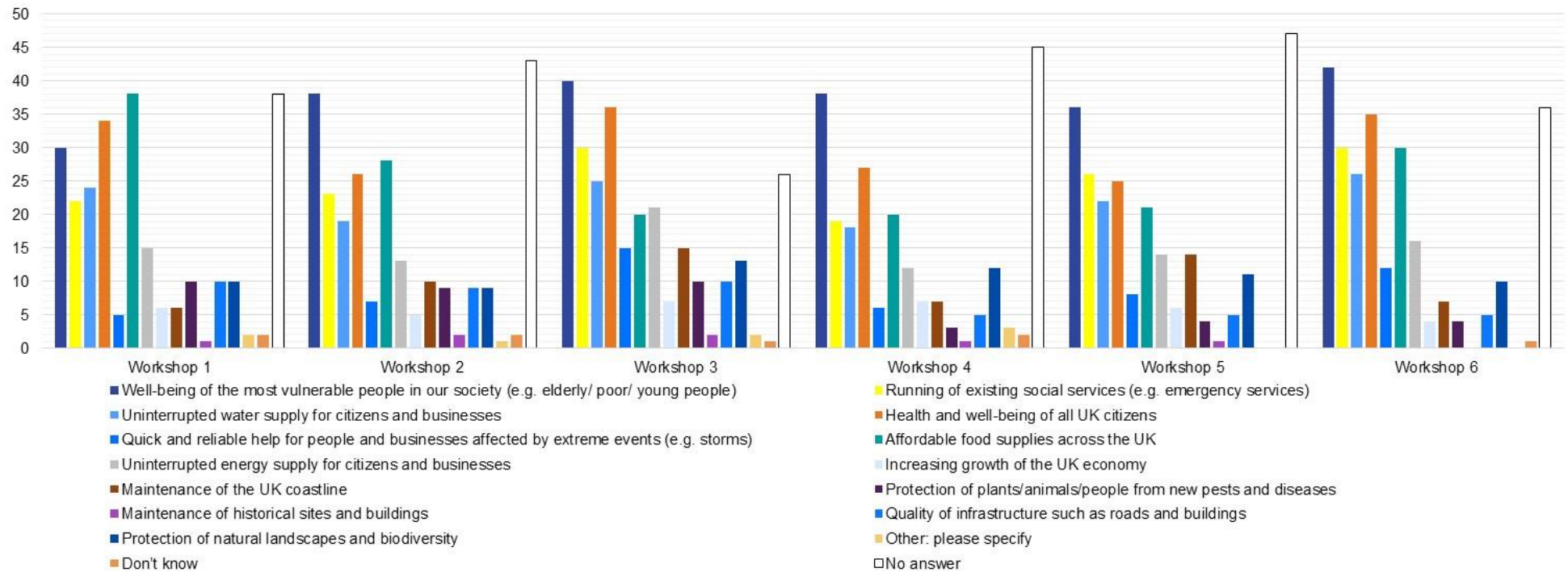
In the survey following each workshop, participants were asked, *'As the UK prepares for climate change, which three areas of daily life, if any, should be most protected'*. Participants were requested to select three responses. Shown in **Figure 5.2** (overleaf), participants' responses reveal the priority placed on protecting vulnerable people, health and wellbeing of all citizens, affordable food supplies, emergency services and infrastructure.

Those that considered the wildfire and drought scenario, identified protecting ecosystems, wildlife and businesses as important to support natural adaptation and to also sustain the economy. However, there was also a *focus on certain risks and preserving what we can in current lifestyles*. It was suggested that areas at risk of wildfire should be a priority for adaptation due to the devastation it causes.

When discussing the coastal erosion scenario, *adapting current lifestyles and adopting a cost-benefit analysis approach* was seen as most appropriate, whereas maintaining current lifestyles was not viewed as realistic.

**"Where you've got ten houses on the edge of a cliff, you can spend as much money protecting those 10 houses as you could dealing with surface water that will affect 1000 houses. Clearly, while it may not be great for the health and wellbeing for those 10 people to say they have to move, that may be the economic consequence of that. It simply isn't the best use of money to protect as many people's lives as possible".** National Summit.

**Figure 5.2: Areas of daily life that should be most protected as the UK prepares for climate change**





Most discussion in all groups centred on *prioritising adapting our lifestyles so that our responses are most cost-effective*. The following issues were discussed:

- Adapting homes and installing insulation and other sustainable heating/cooling measures should be prioritised to make homes warmer in the winter and keep them cool in the summer. In the short-term, government subsidies should be made available to retrofit the existing housing stock, but in the long-term homes should be built that are resilient to extreme weather through requirements in building regulations. There was a general concern that homes being built now are not resilient to the changing climate and changing building regulations should be prioritised by government. It was recognised that there is a need for a substantial increase in the housing stock in England but this should not be an excuse to build unsustainable homes. This reflects the priority placed on built environment adaptation discussed in Chapter 3.

**“And when you’re building houses, more needs to be done. There need to be more rules and regulations for new builds, not just going and taking trees down. You have to build around it.” National Summit.**

- Expert comments resonated with some participants who noted the small actions that can be taken. This included checking on elderly neighbours when it is very hot or cold, asking NHS community responders to shop and look after people, making health professionals more aware of the effect of extreme temperatures and encouraging them to ask vulnerable people about the temperature of their home so they can be provided with advice and support on adaptation actions. This includes simple steps like keeping windows closed in the winter to keep out cold air and in the summer to keep out warm air.
- Some participants were concerned about the adaptation costs that individuals could incur and highlighted the need for landlords to implement adaptations in offices and homes to reduce the financial burden on tenants as well as considering subsidies for adaptation for those on low incomes that own their own homes. This reflects the barriers to adaptation detailed in Chapter 3.

**“If you are going to rent somewhere, an old building, it should be down to landlords and homeowners to get something enforced.” National Summit.**

- Across the groups there was also support for creating a better balance between houses/development and nature/greenspace recognising the important role that greenspaces and trees can play in cooling areas as well as absorbing water. Some participants agreed that whilst it takes time for trees to mature, in the long run planting more trees will be more cost-efficient and sustainable than installing air conditioning.

**“Cheaper to plant a tree than have air conditioning ...” National Summit.**

- One group was concerned that the list of principles was too focused on the general public making adaptations to their homes and lifestyles whereas the really significant adaptations need to be made by government and large businesses and that both should lead by example and invest more resources in adaptation. One participant summarised the group’s thoughts:



**“It strikes me there are two (priorities), one saying the government can lead on, which is to prioritise those most at risk of extreme weather, but we as the public with the right education can actually adapt our own lifestyles depending on the risks in our own areas.” National Summit.**

- Challenges identified across the groups included the complexity created by the number of responsible bodies involved, the need for much greater education and awareness to bring everyone to the same level of understanding and the need for resources where there are many conflicting priorities. Some suggested that as climate change has been largely caused by big companies, there should be a focus on them investing in adaptation rather than taxing individuals. However, others noted the need for us all to change our lifestyles noting that those on low incomes may need financial support to do so.

**“The thing I noticed is most of these choices are about the general public making adaptations to their homes and lifestyles, we should be talking a lot bigger.” National Summit.**

- One participant highlighted the importance of learning from other countries on how to manage very high and very low temperatures as well as coastal erosion and its impacts.
- When considering the overheating scenario, participants supported the principle to adapt lifestyles and adopt a CBA approach to identify cost-effective solutions. Specific adaptation actions that were suggested included creating more greenspaces and planting trees to provide cooling and avoiding tall buildings in cities, particularly avoiding heights that the fire service cannot reach.

**“If we had more trees and natural shading, we wouldn’t need air conditioning as much.” National Summit.**

- Those who considered the coastal erosion scenario highlighted the cost-effectiveness of taking a long-term view and planning now for known risks that are likely to get worse. There was a strong view that engineering solutions should be considered first with relocation being very much last resort. Participants were also frustrated that properties had been built in areas at risk of coastal erosion in the first place and could not understand why this had been allowed by previous governments that were aware of the risk of developing in these areas.

**“We can make sure we aren’t building houses in areas that will have issues like this which might lead to people needing to be moved. But those who are already in an area, we have a responsibility to protect them as opposed to upheaving people’s lives.” National Summit.**

### *Risk priorities*

As noted in previous chapters, perceptions of risk and uncertainty were disruptive in participant’s decision-making – although there was almost unanimous agreement that action must be taken urgently, participants were sometimes unsure about what the best course was. There was relatively little discussion of the risk and uncertainty principles – whether to address risks we are certain of, or to prioritise the areas offering the highest cost-benefit for assessment – but themes of fairness and protecting those who are most vulnerable remained prevalent through the dialogue (in fact increased, as shown by Figure 5-2). Only one group considered that we should prioritise only the risks we are certain

of, with others mentioning concerns around these not necessarily being the main risks long-term, echoing expert observations.

### 5.2.3 Comparison of responses against earlier discussion on principles

There were some clear differences in the way that participants considered principles and trade-offs when discussing specific scenarios compared with the earlier discussion that was more generic and hypothetical. There was more of a focus on who should be protected rather than what the actual actions should be (reflecting the clear focus on outcomes earlier in the dialogue), and in the scenarios, there was a definite increase in supporting those at highest risk probably because there was a particular risk on which discussion was focused. The principle of fairness was very much promoted with a strong view that those who can afford to, should pay and that cost-benefit analysis approaches should be used due to the limited resources available that can only support a limited number of people. Two of the scenarios (overheating and coastal erosion) also raised queries on the justification for previous development decisions that meant specific areas/buildings were now at risk or likely to be at risk in the future, specifically building tall buildings in cities and building in areas at risk of coastal erosion. Finally, despite this being the last session of the dialogue, for a few participants, there was still some confusion on the difference between adaptation and mitigation, or maybe frustration that the focus was on adaptation.





**“These principles do not address climate change and help stop it happening which is what we should be focusing on. National Summit.**

### 5.2.4 Comparison of responses between scenarios and personas

The main differences regarding the prioritisation of principles for different scenarios included the need to protect large populations and areas at economic risk from overheating due not to the fact that cities are most vulnerable as a result of the urban heat island effect. The drought and wildfire scenario led to more discussion about the need to protect ecosystems and wildlife, probably due to the more rural context of the scenario and recognition of how wildfire can be spread in less populated areas, at least in previous examples in the UK such as moorland fires.

The introduction of personas (see **Figure 5.3** below) also resulted in some varied perspectives from participants.

**Figure 5.3: Personas for each scenario.**

 <b>Scenario1: Flooding</b>	<b>Frontline health worker</b> –Linda concerned for the community’s and the staff’s wellbeing due to increased flooding. She covers more shifts and misses her family	<b>Small business owner</b> – Babita struggles to balance her income between growing her business (small café) and helping her mother, who is at a nursing home.
 <b>Scenario2: Overheating</b>	<b>Frontline health worker</b> –Sandeep sees an increasing number of patients arriving with health issues from the heat. His wellbeing is impacted due to overtime and the heat	<b>Low income household</b> – Jenny and Spencer have a young son who struggles to concentrate on schoolwork due to the heat – they cannot afford an air-condition
 <b>Scenario3: Drought &amp; Wildfire</b>	<b>Farmer</b> – Geoff worries about his livelihood and his children, and cannot afford to pay more for insurance, despite knowing that other farmers have experienced yield loss.	<b>Park Ranger</b> – Paula works at a local nature reserve and is planning to move the fish to other places, in order to save them from drought knock-on effects, but worries that such areas will experience similar problems.
 <b>Scenario4: Coastal erosion</b>	<b>Community</b> – Alison is planning to buy a the flat she has been in for the last 25 years. She is also part of a great community. But, coastline erosion poses a threat to the property.	<b>Rail Operator</b> – Cho is part of a company that wrestles with the decision on whether to invest Monday to protect the trainline or find another route – meaning locals need other transportation to reach the trainline.

## Personal impacts of adaptation

Generally, the introduction of personas to make participants reflect on the personal impacts of adaptation measures for a range of different individuals did not affect participants' preferences for specific measures; in general the exercise led to views being reiterated or strengthened. However, in some cases, views changed:

**In the flood scenario**, when the small business owner and senior nurse personas were introduced, it reiterated the need for immediate, quick action when dealing with flooding. Participants also recognised the numerous impacts of flooding, especially on mental health and felt that better mental health support and better education for people who flood regularly was paramount.

The **overheating scenario** did not cause any shift in participants' perspectives i.e., protecting vulnerable people and maintaining emergency services remained at the top of the priorities list. But when presented this scenario from a nurse's perspective, participants strongly believed that national government should provide support.

The **coastal erosion** scenario was the only scenario that prompted a shift in participants' priorities, from protecting vulnerable people, to protecting and adapting existing infrastructure, and ensuring that there will be no further developments along the coastline.

### 5.2.5 Trade-offs

The trade-offs were presented at the National Summit and discussed in break-out groups, with the specific intention of encouraging participants to make difficult decisions, and to recognise where their priorities (some of which were expressed in earlier workshops, such as protecting vulnerable people) may or will result in other aspects not being prioritised. Discussion mainly centred around taking a cost-benefit approach, prioritising those most at risk or reducing as many risks as possible; and prioritising likely risks or preparing for the worst. Some participants also considered these two groupings as being very similar/the same. There was a definite preference for adapting current lifestyles to preserving existing lifestyles assuming this related to small-scale changes rather than major change such as relocation. Discussion by trade-off is summarised below:

**Lives and livelihoods versus actions and resources:** A few participants highlighted the need to preserve lives and livelihoods ensuring that people are kept in their homes and jobs. However, the view promoted in earlier discussions at Workshop 6 was sustained – that priority should be given to supporting vulnerable people, particularly those on lower incomes and that affluent communities should not be prioritised and funded by government.

**Take a proportionate approach via cost-benefit analysis or similar, or prioritise those most at risk or reduce as many risks as possible:** The majority view across all break-out groups was that a proportionate approach supported by cost-benefit analysis should be adopted, with one participant suggesting that such analysis should consider wider costs than just financial, such as health costs. It was suggested by some participants that the focus should not always be on the need for additional investment as there could be the potential to redirect existing resources, such as the army, to implement adaptation requirements.

**Preserve as much as we can in our current lifestyles versus adapting our lifestyles to be most cost effective:** There was a recognition across all groups of the need to adapt but the examples given by one group all related to mitigation suggesting that despite this being the final session, the adaptation

message was still harder to promote/accept than mitigation. It was also suggested that a lot of people may not accept change and the need for adaptation, again highlighting the importance of education and awareness-raising highlighted in Chapter 5. A suggestion from one participant was that individuals should adapt as much as they can afford to and without changing their lifestyles significantly.

**Prepare for most likely outcomes vs. prepare for the worst:** One participant identified that the existence of trade-offs creates a huge responsibility because we do not have the resources to help everyone and therefore there is a need to choose between likelihood and severity but that vulnerable people need supporting whatever the likelihood or severity. There was a majority view from one group that it is best to prepare for the worst but that this was not financially viable. Instead, it was suggested that we should prepare for the most likely scenario but that those at highest risk should prepare for the worst. Others recognised the dilemma between preparing for the worst as it is better to have adaptations in place than build our resilience to extreme events as these may not be required, and wasting money invested in measures that are never used. It was suggested by some that the proportionate/cost-benefit analysis approach and preparing for the worst are interlinked. Related to this was the identified need to have adaptation actions in place that we can use across multiple areas in the UK and also focus on local contexts in terms of preparing for the risks likely to be faced in local areas.

## 5.3 A well-adapted England

### 5.3.1 Participants views

Participants' responses to the question 'What does a well-adapted England look like?' can be split into two categories – outcomes and the actions needed to get there.

The key outcomes of a well-adapted England focused on human safety and well-being with access to basic services and well-maintained infrastructure, a prosperous economy that capitalises upon green opportunities and provides green jobs, sustainable agriculture and increased urban greenspace and a fair distribution of economic impacts with no exacerbation of existing inequalities. It is an England that is ready and flexible to change.

**“In a well-adapted England, you wouldn't be seeing as many deaths from overheating. There has been an increase in deaths because of heat, you'd want to see that going down or levelling off. You don't want to keep seeing an increase in deaths due to heat or extreme weather.”** National Summit.

**“I wouldn't like to see people admitted to hospital with things like heat stroke and people being admitted due to being cold and being on the poverty line.”** National Summit.

The most popular responses that relate to the action required to reach 'well-adapted' status included that everyone is educated and prepared to manage climate challenges, and net zero and adaptation measures work together cohesively.

**“People need to change but probably don't want to change unless they get educated. We've had six sessions worth of education so are probably more willing to change than others. We need to get other people more educated on this.”** National Summit.





- Greater Manchester: there were a mix of fatalistic letters ('we are all doomed') and those hoping for positive outcomes (planting trees to improve the atmosphere, big business investing in green energy). It is clear in such letters that pessimism related to the potential failure of the public to alter their ways and engage in a sustainable lifestyle. In contrast, most of the optimistic letters focussed on people living comfortably and in harmony with nature and with wildlife, while the most prevalent word that participants used to describe people in the future was "happy".

**"The Planet Earth died screaming in the 21st century, neglected and tormented by humans promising to alter their ways", letter from the future, Greater Manchester.**

- Inner London: letters were largely positive, highlighting (for example) the importance of natural solutions such as growing food locally and domestically. The letters described a euphoric atmosphere, where according to participants, people have established a better sense of community and have engaged in more sustainable lifestyle e.g., using electric cars. However, there was a sense from the odd letter that our current lifestyle needs to change to avoid 'walking into a disaster', similarly to Greater Manchester, this appears to be sourced from the worry that the public will not act against climate change.

**"The air is clean and there are trees everywhere", letter from the future, Inner London.**

- Dartmoor and Exmoor: these letters were overwhelmingly positive. The importance of local action (community action, local food growing), supported by decentralised funding came through, as well as distrust in government to make trustworthy decisions for the future of the country. There were also nods to more national measures, such as food security and the UK becoming self-sufficient. Letters indicated gratitude for adaptation action to protect us and our children in the future.

**"All houses have their own solar and wind energy set ups. The local farmers have their own reservoirs", letter from the future, Exmoor and Dartmoor.**

- Hull and East Riding: with the exception of one particularly negative letter – where the writer believed that nothing would change – the letters set out a wide range of ambitious and positive outcomes. These included reduced erosion, cooler more bearable summers and no flooding. Some letters still included the presence of risks (warmer climate with more diverse wildlife, increased risk of wildfire, more erratic weather). Again, gratitude came through in some of these letters – feeling fortunate that adaptation had happened, securing a future for grandchildren. There were also plenty of adaptation measures built into letters – more trees, water storage tanks, green roofs, more green space, flood defences etc. Mitigation measures were also highlighted.

## 5.4 Final thoughts

This chapter represents the culmination of participants' views after six workshops and provides rich insights and strong opinions regarding adaptation priorities, and a vision for a well-adapted England. Whilst there were differing views across and within cohorts, there is also a good deal of agreement particularly in relation to fairness and focusing on supporting those who are most vulnerable, the need to act now, and focusing on cost-effective adaptation. Participants accepted that lifestyles may need to change but felt major life changes such as relocation should be a last resort reflecting earlier discussions reported in Chapter 3. The next chapter further explores the issue of climate change adaptation engagement and communications with the public.



## 6 Engagement and Communication

### Key findings:

- Participants suggested multiple methods of communication with a focus on popular, mass media approaches, such as TV and social media, to ensure that messages about the changing climate and need for adaptation reach as wide an audience as possible.
- Communication could be improved through positive reinforcement (to create a sense of shared aims and sense of progress being made), positive examples of successful adaptation, ensuring that messages are easily understandable to non-technical audiences and using experts and schools to deliver the message.
- Engagement should be jargon-free, focus on the key risks and how these can be addressed. Participants felt that the public need to be given the clear facts, even if these may have the potential to shock, but should avoid scare tactics.
- With regards to engagement in the development and delivery of the National Adaptation Programme, participants strongly favoured a two-way dialogue rather than being told what to do, as the government does not always know what is feasible for ordinary people.
- Participants' perceptions of the NAP were of a national plan for action for everyone which could be used to drive accountability at all levels.
- Ensuring that people are engaged throughout the NAP and wider adaptation process and conducting this engagement in a meaningful, relevant and honest way were key messages from the dialogue.

### 6.1 Introduction

A key theme across all the workshops was a need for there to be greater communication, education and engagement with the public on the topic of climate adaptation. In this chapter, “communication” refers to how the public are told about climate adaptation, whereas “engagement” refers to how the public is able to participate in this conversation.

As established in Chapter 2, participants were broadly unaware of the implications of climate change and different options to adapt to it, and often noted during workshops and in the surveys that followed that they were learning a great deal. Participants throughout the workshops felt strongly that engagement and communication was lacking at present, and therefore most people were not sufficiently aware of the potential impacts of climate change.

**"How do you learn about these things? They send out a pigeon?" Exmoor & Dartmoor, Workshop 1.**

### 6.2 Why communication matters

Participants strongly emphasised that public engagement and societal change would be most successful if people become more aware of climate change and the possible ways that they, along with others, can adapt. The need for education and communication to the public was consistently and commonly

highlighted as being the most effective and important action regarding adaptation – educating the public on what to do, and the potential impacts of inaction. Participants further suggested that with the right approach to education, individuals may even be inclined to pay more (primarily through taxation) and to alter their behaviours.

Some frustration was expressed about the lack of current communication to date – perhaps informed by participants feeling they did not know enough about the issues discussed throughout the workshops (see Chapter 2 for reflections on participants’ knowledge prior to the workshops).

**“Public engagement has got to be at the forefront of everything.”** Hull and East Riding, Workshop 5.

**“Having more awareness and education, that [adaptation] can be a bit more feasible.”** Greater Manchester, Workshop 4.

Furthermore, participants strongly advocated raising awareness and educating the public as an immediate priority. Government communications should be honest and help to explain to the public the action they need to take as well as explaining the adaptation actions that government has implemented, is implementing and plans to implement in the future. It was noticeable that the call for further engagement was a key theme from Workshop 1 through to Workshop 6 and the National Summit.

**“People in the UK want to contribute - they just need to know the 'why'; without that it is not likely that they will act.”** Inner London, Workshop 6.

## 6.3 Improving communication

Participants also noted that the way in which the message was communicated to the public could be improved, alongside using new methods and means of communication. This included how information was communicated within the workshop themselves, and also in the public sphere more broadly.

### 6.3.1 Positive reinforcement

Participants highlighted the need for positive reinforcement – although this did sometimes come from participants conflating mitigation and adaptation, for example through rewards given for recycling. Participants felt that they did not know the likely impacts of actions they were taking.

**“People in the UK want to contribute - they just need to know the 'why'; without that it is not likely that they will act.”** Inner London, Workshop 6.

There was a sense of wanting to understand the ‘big picture’ and how participants could contribute to it. Participants’ comments often related to sustainability actions, such as recycling or reducing personal energy consumption, but it seems likely that this approach could be usefully applied to more adaptation focused communications as well.

**“I think it’s really important about empowerment. Everybody here seems to have some level of showing anxiety, or not wanting to be told off constantly that we’re doing something wrong. It’s really important to lift people up and tell them when they’re doing something right.”** Inner London, Workshop 1.

### 6.3.2 Positive local stories

Another idea discussed in more detail here is the potential of positive local stories. During Workshop 3, each cohort was shown a short video about expected climate change impacts in their local area. Generally, the cohorts found these to be negative and worrying. However, the Hull and East Riding video showed the work being done by the Living with Water Partnership. This video was received much more positively because it was perceived as showing successful proactive action and generated a sense of pride towards Hull in the participants. This exemplifies the extent to which positive, local stories can be very engaging. The participants strongly felt this information should be made much more widely available.

**“Being born and raised in West Hull, I felt really proud watching that. Why on earth isn’t that on the news? They diss Hull something rotten around the country. It actually showed my old house in the flood water. I was one of those people who lived in a caravan who had to survive a business with two young children. I got really emotional watching it.”** Hull and East Riding, Workshop 3.

### 6.3.3 Easier to understand

Related to utilising popular forms of entertainment was a desire amongst some participants to communicate information in a way that was easier to understand – this included using less jargon, relying less heavily on facts and figures, and telling compelling, relevant stories. Perhaps most importantly, this also included indicating a clear path, something some participants felt was missing as shown in the quote below.

**“It’s really difficult to map your life when things like this are happening. Our lives will have to be totally adapted to climate change, but I don’t know what that looks like, and nobody can tell me.”** Dartmoor and Exmoor, Workshop 5.

### 6.3.4 Responsibility for communication, education, and engagement

Consistent with participants’ views on overarching responsibility (discussed in Chapter 4), some participants saw national government as playing a key role in education and communications. For some, this should be similar to the updates provided during the COVID-19 pandemic: a daily news briefing, or dedicated time in government announcements given to climate change and adaptation. Within this, a few participants emphasised the role of experts – again referencing the pandemic when experts were directly communicating with the public.

**“Look at COVID, I listened every night to the scientists talking. Everybody needs to listen.”** Inner London, Workshop 5.

### Communications and engagement recommendations: Dartmoor and Exmoor

In Dartmoor and Exmoor, some called for a **national communications campaign**, inferred to be run by national government.

They included broader examples, too, of **shows presented by David Attenborough**, the use of **social media**, **public service announcements** (again, reminiscent of daily COVID briefings), and **advertisements in public places** such as bus stops – with the specific goal of demystifying the topic.

This group also highlighted that, while they had begun to notice some communication around climate adaptation since beginning the workshops, this was sometimes **difficult to understand**, giving the example of the third part of the International Panel for Climate Change’s sixth report<sup>18</sup> that had been published the day before Workshop 5 took place.

Outside of the responsibilities of national government, some participants supported a more bottom-up approach. The responsibility would be on behalf of local communities – including, in some circumstances, local government – taking on a role of educating local areas on area-specific issues. For some this also extended to taking on an activist role.

**“I think community can be very powerful, but it’s more to support one another and put pressure on those higher powers who can do more. We can rally together in order to get national government and big businesses to act.”** Inner London, Workshop 5.

Some participants also expressed the view that communication inferred individual responsibility, empowerment and in some situations compelling individuals to make changes – either to their own behaviours, or as a form of activism. The imperative to communicate, and the resultant imperative to act, may have reflected how participants themselves were feeling. Frequently, some participants expressed surprise at how much they had learned over the process of workshops; some of them expressing shock having thought of themselves as being well-informed prior to the workshops.

## 6.4 Methods of communication

Participants across the workshops suggested multiple ways through which better communication with the public could be achieved. The below figure indicates the approaches suggested by participants.

<sup>18</sup> The report, titled “Climate Change 2022: Impacts, Adaptation and Vulnerability”, was focused on the global connotations of climate change and emphasised the likelihood of dire consequences should we fail to adapt. The report can be found here: <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

**Figure 6.1: Figure showing the main methods of communication put forward by participants across all workshops and cohorts**



These methods reveal a sense that communications need to be *widely available*, presented by *trustworthy individuals*, and incorporated into *standard discourses* – from school to adulthood. Additionally, participants were keen to note the key role that should be played by popular means of communication, delivered by popular or well-trusted individuals (“**everyone listens to what David Attenborough says**” and “**Marcus Rashford made us all aware of the school meals crisis**”). Unsurprisingly, views differed regarding the most effective approaches between older and younger participants. Older participants stated the TV was the best mechanism because “**everyone watches the telly**” whilst younger participants favoured social media and streaming services such as Netflix because “**no one watches the telly these days**”.

**“I think it needs to be educated to everyone, the younger generation should be made aware. It needs to be rolled out to the schools for the children and the things they can do to help.”** Greater Manchester, Workshop 3.

**“Primary school is where you need to start.”** Inner London, Workshop 3.

Participants were also keen to ensure that messages reach those who do not have access to the internet through, for examples, leaflets, billboards, adverts on buses, local libraries and local meetings.

There was considerable discussion and agreement around schools providing information to children and including climate risks and adaptation in the national curriculum; this was suggested as an effective measure to both educate the next generation and their parents.

**(In relation to school talks from fire service regarding wildfire) “So that would be providing knowledge and education, then the children would go home to their parents and say, oh, I’ve learned this today.”** Exmoor and Dartmoor, Workshop 4.

## 6.5 Improving engagement

Beyond communicating the information, participants expressed a desire for there to be greater public engagement on climate adaptation. This was explored in Workshop 6 and the National Summit where participants considered how decision-makers should engage the public in developing the NAP.

The majority of participants felt there was a need to engage the public as much as possible at all stages, but also to ensure a two-way process where people give their opinions and are listened to by policy and decision-makers.

**“On all levels from consultations like this one to research and action, and everything in between!”** Survey feedback, Workshop 6<sup>19</sup>.

There was a strong consensus for information to be honest and to shock, including identifying the impacts that could happen and the costs that these could incur. However, there was also a recognition that scare tactics should be avoided and the public should not be frightened (particularly those that are vulnerable or may not be able to afford to make changes). This was due to concern that scare tactics would negatively impact mental health, desensitise people (as some considered happened with COVID publicity) or lead to a fatalistic outlook where there does not seem to be any point in taking action.

## 6.6 How engagement can be delivered

When it came to encouraging engagement and involvement in adaptation options, participants had broadly consistent views on how communications should be carried out:

- Open, accessible, and easily understandable information that avoids jargon, is essential. An interesting example was provided relating to adaptation and mitigation, and the continued confusion throughout on the focus of the dialogue. As noted previously, some participants also noted the most recent publication from the Intergovernmental Panel on Climate Change (IPCC)<sup>20</sup> and how difficult that was to understand.

**“One is about trying to stop climate change happen, the other is about preparing ourselves for the changes that are already happening and might happen in the future. Why not just say that?”** National Summit.

- Emphasising the role and potential impact of local examples, or engagement run on a local basis, was underlined as important by participants, both during the workshops and in the survey results that followed. The participants' view was that this made the impacts of climate change real and relatable, and also showed that action can be taken that has a positive impact.
- In contrast to the above, recognising and learning from the experiences and practices of other countries already experiencing some of the impacts that will affect England in the future would be helpful.

**“I think we could learn so much from other countries, they seem to manage any weather conditions.”** Greater Manchester, Workshop 4.

<sup>19</sup> A response written in by the participant to the question, “In one brief statement, how should the public be involved in climate adaptation in England?” This was asked after both Workshop 6 and the Summit.

<sup>20</sup> <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>



- Detailing what actions individuals can take to adapt was felt to be important to ensure people are aware that something can be done.

**“What is being done about it? What can we do about it? As individuals.”** Inner London, Workshop 3.

**“We don’t know what to do, we’re not being told.”** Inner London, Workshop 3.

- Information should be available in one place rather than being split between numerous bodies, such as the Environment Agency for flood warnings and flood advice, the NHS for heatwave warnings, and water companies for water efficiency and drought.

Throughout the dialogue many participants were surprised to learn about the action that is already happening and felt that Defra, in particular, should be clear about what they are doing, where funding is being invested and also sharing success stories about, for example, the numbers of properties protected by flood defences in major storms. Participants felt that some good news is needed to make people realise they can have an impact in managing potential climate risks and impacts, and that adaptation works. It was also noted that communicating uncertainty can be challenging, but it is important to be honest about this and continually update information as more is learnt about the future.

Regarding who the message should come from, there was some scepticism about whether the government was the best body to be communicating climate information due to some loss of trust. Using experts (as happened with the COVID press conferences) was seen as a good way of ensuring the information provided is believed. It was also felt that climate adaptation decision making should be cross-party and not limited by election cycles.

#### 6.6.1 Engaging the public in the NAP

Participants strongly favoured a two-way dialogue rather than being told what to do, as they felt the government does not always know what is feasible for ordinary people. The importance of the dialogue type approach was recognised (although acknowledged this may not be feasible on a large-scale) as it gives the general public a voice.

**“They are getting people from all walks of life, all different backgrounds, different financial situations, and I would love to have an input into what’s best for people. (People) who work at Defra, who live in London and who earn a decent salary, what might be right for them will not be right for where we live.”** Hull and East Riding, Workshop 6.

Participants also identified the need to consult people early and continually with a clear stepped plan explaining what is need in one year, in two years, and then in three, five and 20 years. There was a clear appetite to understand what the risks are, what the plan is to address these, what the government and business are going to do, and what individuals should be doing.

In terms of the ways that Defra should engage the public, the following were suggested (in addition to the dialogue approach identified above):

- Defra should hold town hall meetings and present the facts, figures, and pictures/scenarios of what will happen if we do not act.

- Defra needs to engage the public in the same way in which the public was engaged for COVID – use the TV and the radio to spread information and to aid behaviour change.
- Consideration should be given to having local champions, responsible for gathering local feedback and raising awareness, that also feedback to Defra.
- There should be more involvement of people in decision-making, through polls, surveys and potentially referendums for example, ensuring the public has a say.

### 6.6.2 Sharing information from the dialogue

There was overwhelming support from the participants for the dialogue approach, which enabled continuous learning and feedback. The importance of this report being well publicised to everyone was also highlighted, as it will help to understand the issues being raised by ordinary people. There were mixed views about being personally involved in publicising the dialogue, but it was felt that a video could be used to show what people thought and learned, and that this should be on the news and publicised through TV, radio and social media.

**“I can offer a little and learn a lot!! A very positive feeling.” National Summit.**

Participants often noted they felt like they were making a contribution to something bigger than themselves, and that the process made them feel empowered and like they had a voice that could and would be listened to.

**“I am extremely happy to participate in a process that is affecting everyone.” National Summit.**

Participants consistently urged facilitators to educate the public on climate change impacts and adaptations, as well as to continue raising awareness. Most participants were keen on the idea of educating communities on weather threats and solutions that are local to their region. They have further raised the issue of the lack of tools provided to the individuals, that would enable them to engage in adaptation.

**“Get the awareness and education out there.” National Summit.**

Participants expressed concern over the evident gap between discussing and acting on climate change. They felt that we need to stop discussing and start engaging more intensely.

**“Actions are needed as we haven’t done enough.” National Summit.**

Many participants thanked the facilitators for teaching them, as well as for their contribution to climate adaptation, and some have asked them, as well as everyone else working on adaptation, to **“keep going”**.

## 6.7 Final thoughts

The need for improved, ongoing and widespread communication and engagement with the public on key climate risks, their implications, and required adaptation action was a key theme throughout the dialogue from Workshop 1 to the National Summit. Key messages from the participants included being honest about the risks and potential impacts, but also highlighting positive examples of adaptation to avoid a fatalistic outlook. Recommendations from participants to ensure successful communication and engagement included avoiding jargon and bringing in experts to support government views, to counter any sense of distrust the public may have. Participants strongly favoured a two-way dialogue in the

development and delivery of the NAP, similar to the approach through which the climate adaptation dialogue had been delivered.

The importance of raised awareness is reinforced by the clear change in outlook amongst participants as the dialogue progressed. Following Workshop 3 where participants were informed about future climate change and its potential impacts, there was clear concern and shock about the potential severity of these impacts and how soon they could occur. But, by Workshop 5 and the National Summit, when participants had talked through adaptation action that could be taken, there was in general a greater sense of positivity and hope.

The next and final section sets out the conclusions from the dialogue.

# 7 Conclusions

## Conclusions

- Participants were concerned and upset about their lack of awareness of future climate impacts and did not feel that England is well-adapted to climate change. As the dialogue progressed with discussions on potential action, participants were generally more hopeful about the future.
- Participants considered government should act now, prioritise public engagement and awareness-raising, take small urgent actions and plan for the future. Effective action would be supported by increasing the profile of adaptation through an adaptation commitment similar to net zero.
- Throughout the dialogue, participants prioritised adaptation efforts towards those who are most vulnerable through personal circumstances or living in high climate risk areas. Priority was then given to basic human health, infrastructure and services.
- Participants were more concerned about the outcomes that adaptation should achieve (bullet above) rather than prioritising types of risks or the specific adaptation measures.
- There was a large degree of consensus in views from different parts of the country with the main difference being an appreciation of local risks.
- A well-adapted England was identified as maintaining our health and wellbeing with basic access to services and infrastructure, a fair distribution of economic impacts, a prospering economy focusing on green opportunities, sustainable agriculture and increased greenspace.
- Government was identified as having lead responsibility for adaptation but this should be cascaded down to national agencies, local authorities, businesses, communities and individuals.
- National government could consider a cross-party approach to adaptation ensuring that party politics and election cycles do not constrain decision-making.
- Participants' perceptions of the NAP were of a national plan for action for everyone which could be used to drive accountability at all levels.
- Engagement with the public on the NAP should be a two-way dialogue, focus on clear and locally-relevant messages (shock, not scare tactics) and involve the public through a range of media and climate assembly type events.

This report has set out the findings from this pioneering project to understand the public's views on the main climate risks for England, priorities for adaptation, what a well-adapted England looks like, and how they should be engaged in the National Adaptation Programme (NAP).

With the net zero agenda being very much the focus of climate action, the public is well informed on this agenda and largely supportive but understanding our climate risks and the adaptation required to address these has received less attention. The results from this project will, therefore, be crucial in helping to inform government's future priorities including the development of NAP3. .

This chapter sets out our conclusions addressing the key questions set out in the specification for the work.

## 7.1 Visioning and perception

### Awareness of climate risks

Whilst participants, across all four cohorts (Greater Manchester, Inner London, Dartmoor and Exmoor and Hull and East Riding) felt that England's weather has already changed in many ways (less snow in winter, merged seasons and increased variability for example), they were shocked at the range and severity of potential risks from future climate change and the urgency with which these need to be addressed. In addition, there was evident frustration and a degree of upset that they were not already aware of these risks and felt that this information should be much more widely known. This reflected a concern that ran through all the workshops regarding the government not doing enough; this in addition to a lack of trust in government, potentially relates to wider current political concerns.

Participants generally felt that England is not yet prepared for the risks of a changing climate. There was strong support for taking more action now and a strong desire for more and better communications and education about adaptation. The benefit of improved awareness and education was illustrated by how participants' feelings, in general, became more positive as the dialogue progressed and adaptation action was discussed giving more hope for the future.

### Adaptation priorities

As detailed above, there was a strong message from participants across all regions that the government must act now and that raising awareness and educating the public should be a priority action. Mixed messages were provided regarding the type and scale of action, although natural solutions were clearly supported, where viable, and the need to implement small-scale actions and address urgent challenges now whilst also planning for longer term, more strategic challenges. There was a general acceptance that individual lifestyles may need to change with small-scale adaptation actions being undertaken, such as those affecting individual homes and properties. However, large-scale changes and particularly those having a major impact on people's lives, such as relocation most likely as a result of coastal erosion, were less acceptable and it was felt that all options should be explored with relocation considered a last resort.

The concept of maladaptation (where climate change adaptation actions have the opposite of the intended effect and increase rather than decrease vulnerability) was not identified as a major concern by the public. However, in discussions around trade-offs regarding focusing on the risks that are most certain, it was recognised that whilst this may seem an obvious priority, other risks may have more severe impacts in the longer term so there could be the potential for maladaptation.

Throughout the discussions across cohorts and workshops in the dialogue, participants were more concerned about the outcomes that adaptation should achieve (in terms of protecting vulnerable people for example) rather than prioritising the risks that should be addressed, or the type of adaptation deployed.

## **Fair adaptation**

A consistent view from the majority of participants across all four locations throughout the dialogue was prioritising adaptation efforts at supporting people and particularly those who are most vulnerable in terms of ill health, age and low income or due to living in areas at high risk of being affected by future climate impacts. There was a very strong sense of fairness in that climate change impacts should not embed or exacerbate existing inequalities. This also related to who should pay for adaptation in that those who can afford to pay should do so, and those that cannot, should be supported by government. There was also a recognition that businesses, that have contributed to climate change, should invest in adaptation.

## **Variations in attitudes or perceptions by region**

There was an interesting degree of consensus across regions despite their varying geographies and socio-demographic characteristics. Evident differences related to appreciation of climate risks, so, for example those based in Hull and East Riding, and Greater Manchester had a detailed understanding of flood risk, and some had experienced this. Also, on adaptation actions and priorities, there was more of a focus from Dartmoor/Exmoor on protecting farmers, ecosystems and wildlife than other localities affecting the rural nature of the areas. In terms of softer aspects around perceptions and feelings, participants from Inner London had less trust in government and more concern that known information was not being shared although these issues were highlighted in all areas.

## **How the public perceives, processes, and rationalises the importance of adaptation action**

The public understood the importance of adaptation action from very early on in the dialogue and appreciated the urgency with which this should be taken forward demonstrated by the frustration that more had not been done already. However, most participants were unaware that some action is already underway such as the management of flood risk through national and local strategies, the funds invested and the protection already in place. Participants favoured a top-down, long-term approach to adaptation but were keen to be involved in a two-way/dialogue basis where their views are taken into account in adaptation rather than having actions imposed on them. Participants also urged government to take a much more proactive approach as they considered that at present most adaptation action is reactive and focused on recovery rather than prevention.

## **Vision for a well-adapted England**

Discussions regarding a vision for well-adapted England included both the final outcome and how to get there (adaptation actions). Key outcomes were identified as maintaining our health and wellbeing with basic access to services and infrastructure, a fair distribution of economic impacts, a prospering economy focusing on green opportunities, sustainable agriculture and increased greenspace. In terms of how we get there, the key elements highlighted were that everyone is educated and prepared to manage climate challenges and that net zero and adaptation measures work together cohesively. This is a key point for policy makers to consider as promoting both agendas and managing these in a complementary rather than competitive way and maximising actions that address both mitigation and adaptation should help create more sustainable outcomes.

Interestingly, during the exercise where participants wrote letters from the future, a few highlighted that the future was positive because previous generations had acted when they needed to and acted appropriately, meaning that future generations were not failed. The concern about failing future



generations was evident and potentially provides a hook on which to base future engagement and messaging.

## 7.2 Strategic direction

### **Expectations regarding the future resilience of the UK's places, services, infrastructure, and natural environment to the impacts of climate change**

Discussions tended to focus on what should be protected rather than the level of future resilience. There was an appreciation that some places may be lost, due to coastal erosion and potentially flooding in the future, but that this should be very much a last resort where there is no chance that engineering solutions can save locations. Health, transport and power infrastructure along with access to services were also identified as priorities for protection.

### **Responsibility for building resilience and for adaptation across society – roles of government, the public sector, businesses, and individuals**

Participants felt that the government is responsible for leading climate change adaptation, allocating sufficient funding and providing support to the vulnerable portion of the population. Government was seen as having the power to introduce legislation, set standards and regulation, and allocate funding and was also identified as needing to lead the way and set an example. Some issues were raised regarding distrust in the government and also that party politics and restricted political cycles could constrain effective adaptation, particularly in the long-term. In addition, across regions, there was also support for a dedicated department within the government (Ministry for Adaptation) or an independent task force that should marshal adaptation efforts. It was also suggested that national government could consider a cross-party approach to decision-making on adaptation ensuring that party politics does not affect decisions. Ideally this could also have a longer-term mandate than five years ensuring that it is not constrained by election cycles.

Participants also felt that businesses have a responsibility to adapt to protect themselves and to invest in adaptation for the general public as they are most responsible for climate change.

Participants' perceptions of the NAP were of a national plan for action for everyone (rather than being focused on government) which also included regional and local priorities and clear responsibilities for government, businesses, communities and individuals. As such, the NAP could be used to drive accountability at all levels. Interestingly, participants from the rural cohorts placed greater responsibility at the community level than their urban counterparts.

However, at the local level, concern was expressed regarding the number of actors involved in responding to incidents, and that this complexity may lead to delayed or less effective response measures. As previously detailed, there were also concerns that current policy was reactive to events and a new planned and proactive stance needs to be adopted.

### **Desire of the public to be engaged in the rollout of adaptation measures**

Participants were very keen to be involved in decision-making regarding adaptation and also understood the need to be involved in conducting adaptation actions themselves provided they are provided with the knowledge and tools to do so. There was a clear view that everyone is responsible but government, supported by experts, needs to lead the way and empower communities and individuals to act.

## **Government action to engage and communication with the public about adaptation**

There was a consensus view across participants that engagement with the public is essential and should be conducted in a two-way manner to ensure that the public's views are brought into decision-making. Policy and decision makers may wish to consider how to better engage the public through a two-way dialogue so that people feel listened to and are empowered and able to act as well as being better informed.

Engagement with the public should involve clear and locally relevant information presented through multiple channels (TV including soaps, radio, social media, billboards, buses, schools, libraries, council meetings, using celebrities) and bring in trusted experts. Shock, but not scare tactics could be involved ensuring that people are clear on what the government and businesses are doing, what communities and individuals can do and what the results will be if they act. Providing honest information at the local level that is relevant to the public should assist with genuine engagement.

There was also a strong feeling that the findings from this dialogue should be publicised and that the deliberative approach has been very effective in communicating a complex and emotive subject. Whilst it would be challenging to roll this out on a large-scale, citizen assembly type approaches could be effective.

# Annexes

Four annexes are provided in separate documents to this report:

Annex A: Methodology and sampling

Annex B: Experts and Oversight Group

Annex C: Literature review

Annex D: Workshop materials and stimuli

# Our standards and accreditations

Ipsos' standards and accreditations provide our clients with the peace of mind that they can always depend on us to deliver reliable, sustainable findings. Our focus on quality and continuous improvement means we have embedded a "right first time" approach throughout our organisation.



## ISO 20252

This is the international market research specific standard that supersedes BS 7911/MRQSA and incorporates IQCS (Interviewer Quality Control Scheme). It covers the five stages of a Market Research project. Ipsos was the first company in the world to gain this accreditation.



## Market Research Society (MRS) Company Partnership

By being an MRS Company Partner, Ipsos endorses and supports the core MRS brand values of professionalism, research excellence and business effectiveness, and commits to comply with the MRS Code of Conduct throughout the organisation. We were the first company to sign up to the requirements and self-regulation of the MRS Code. More than 350 companies have followed our lead.



## ISO 9001

This is the international general company standard with a focus on continual improvement through quality management systems. In 1994, we became one of the early adopters of the ISO 9001 business standard.



## ISO 27001

This is the international standard for information security, designed to ensure the selection of adequate and proportionate security controls. Ipsos was the first research company in the UK to be awarded this in August 2008.



## The UK General Data Protection Regulation (GDPR) and the UK Data Protection Act (DPA) 2018

Ipsos is required to comply with the UK GDPR and the UK DPA. It covers the processing of personal data and the protection of privacy.



## HMG Cyber Essentials

This is a government-backed scheme and a key deliverable of the UK's National Cyber Security Programme. Ipsos was assessment-validated for Cyber Essentials certification in 2016. Cyber Essentials defines a set of controls which, when properly implemented, provide organisations with basic protection from the most prevalent forms of threat coming from the internet.



## Fair Data

Ipsos is signed up as a "Fair Data" company, agreeing to adhere to 10 core principles. The principles support and complement other standards such as ISOs, and the requirements of Data Protection legislation.

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