Advice on improving the accessibility of the
UK Climate Change Risk Assessment 2022 Synthesis Report and other outputs

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Report Information

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About Sustainability West Midlands

SWM was established in 2002 as an independent, not-for-profit company and is the sustainability adviser for the leaders of the West Midlands.

Our vision is that the West Midlands is leading in contributing to the national target of net zero greenhouse gas emissions by 2050 whilst addressing health inequality and driving inclusive growth. We monitor the West Midlands Sustainability 2030 Roadmap which acts as a framework that all organisations based or operating in the region can use to help them make changes to their activities in the knowledge that they will contribute to wider regional ambition.

SWM's support our members and other local stakeholders in the public, private and third sectors to implement these changes by enabling them to demonstrate innovation and leadership and provide opportunities to collaborate and celebrate success.

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Contents

Executive Summary

This report provides the UK Committee on Climate Change (CCC) with advice on how to improve the impact of the third UK Climate Change Risk Assessment Evidence Report (CCRA3) due for publication in 2021, by enhancing its accessibility to its primary customers and target audiences, which are UK Government departments, the devolved administrations and Government-funded arm's length bodies.

The report focuses primarily on the CCRA3 Synthesis Report but also considers other outputs, such as the CCRA3 webpages and summary documents. It outlines the results from stakeholder feedback on the perceived accessibility of the previous CCRA outputs along with good practice in climate risk assessment accessibility demonstrated in other countries. This research has informed a series of recommendations for the CCC on how to improve the accessibility of the 2021 CCRA Synthesis Report and other outputs and the priority recommendations are outlined below.

Recommendations specific to the Synthesis Report

> When users visit the CCRA3 website and then select to specifically view the Synthesis Report, the report's landing page should contain a basic, non-technical summary of the report and include:

> > A link to the start of the full report.

> > A short paragraph outlining what the Synthesis Report is and who it is for.

> > One-sentence key messages.

> > A new infographic summarising the key purpose and outcomes of the report and infographics summarising the priority risks.

> > A list of ~70 clickable risks as outlined below.

> Ensure that the Synthesis Report displays all ~70 risks in a similar format to CCRA2 (page 7) but ensure that each risk is also clickable and takes users straight to the relevant evidence report technical chapter web page for exploration of further information.

> Emphasise the key messages and make each one sentence in length, with an option of expansion for greater clarity. These should be presented on the Synthesis Report landing page and PDF Executive Summary and on one of the first few pages of the main report body. Alongside this, maintain the 'key messages' downloadable fact sheet but make this one page with a new infographic summarising the key purpose and outcomes of the report.

> Try and maintain the overall length of the report to a maximum of 30 pages. One way of achieving this is to not be drawn in to providing too much detail on each risk in this report (such as page 40-41 of the CCRA2 Synthesis Report) and remove the technical chapter summary annexes, and instead provide links to the technical chapter pages via the clickable risks plus better use of links throughout the Report.

> There needs to be a better link between the risk assessment's key findings presented in the Synthesis Report and the UK Climate Projections (UKCP18). A high-level overview of projections should be provided alongside the risks as well as links for more information.

> Similarly, a better link should be established between the CCRA and the Government's response to this, including the UK National Adaptation Programme (NAP) and the adaptation programmes of the devolved administrations. A simple link to the relevant pages in the introductory sections of the Synthesis Report should be sufficient.

Recommendations relevant to both the Synthesis Report and other CCRA3 outputs

> Develop case studies that illustrate the real-life impacts (health, financial etc.) of what happens when a risk occurs and what can be done to address this, as well as how to tackle overlapping issues. These case studies should be formed from a robust evidence base and reflect relevant policy that influences the outcomes. These would be best placed in the national devolved administration summaries to be produced as part of this work, but also replicated in the Synthesis Report. It is recommended that there are two case studies per devolved administration summary at approximately half a page each, to be developed via identification from stakeholders and the CCC Customer Group, where resources allow.

> Ensure that the national devolved administration summaries clearly reflect policies and circumstances only applicable to these areas where identified risks may affect/ be affected by them. Include a summary of this in the Synthesis Report and acknowledge this issue in the technical chapters. SWM and partners will be addressing this issue as part of the remaining tasks associated with this project.

> Produce non-technical factsheets that summarise the key messages, main risks/urgency scores, devolved administration differentials, policy and international implications of key sectors. These factsheets will draw on the success of the CCRA2 factsheets and be succinct (2-4 pages), text-light and focused on visual outputs such as charts and diagrams. Critically, each one will be put together with the support of an individual from the most relevant Government department from each devolved administration through an engagement process. The Synthesis Report should include a non-technical one-pager outlining these sector key messages/risks based on the content of the factsheets. To also improve the interpretation of the language used, a simple glossary of key terms could be included as an appendix to the Synthesis Report.

> Develop a slide pack accompanying the Synthesis Report (similar to CCRA2), that users can download and use to communicate the CCRA3 Evidence Report to a wider audience, that contains no more than ten slides and includes:

> > What it is and who it is for.

> > Summary of all available outputs.

> > The one-sentence key messages.

> > Key variations in risks to each devolved administration.

> > The new summary infographic and priority risk infographics.

Recommendations specific to other CCRA3 Evidence Report outputs

> For each full technical chapter PDF, consider including the full list of risks at the start of the document and ensure each risk is clickable allowing users to go straight to the relevant section of the chapter that discusses that risk in more detail. A similar approach was taken in the Urgency Scoring tables developed for CCRA2. Ensure that there is a link back to the overall list of risks at the foot of each section containing more detail.

> Create a download matrix which provides users with every output on one web page (including specific outputs for devolved administrations) labelled clearly so users know what is most helpful for them. Include links to all relevant web pages, downloadable PDFs and separate out infographics, images and slideshows to enable these to be downloaded individually. This can replace the current 'CCRA at-a-glance' page. This could be included on the same page as the site navigation webpage (see below).

> Develop a site navigation web page which enables users to type in / select keywords which acts as a filter, bringing up the key web pages and risks that match the criteria inputted by the user. This could be included on the same page as the download matrix (see above).

> Investigate a way of capturing and reflecting risks in different spatial areas in a visual way, i.e. enabling users to be able to ascertain risks relevant to their area via interrogation of a mapping function that displays risks spatially.[1]

> Targeted dissemination of CCRA3's key findings and risks is paramount and the provision of workshops/ events that allow representatives from Government departments and key supporting bodies to come together to learn about these findings and discuss what to do next is arguably the most effective way to generate engagement and encourage action. One workshop should be held in each devolved administration to ensure local policy issues can also be discussed; these could be in person or virtual (especially considering the situation regarding Covid-19). SWM and partners will support the running of focus groups in each devolved administration with the primary audience at around the time of the CCRA's launch that will help to address this. These could include:

>> An overview of the key messages and outputs

>> Discussions around how to address the priority risks, forming next steps and actions

>> Presentations on case studies outlining good practice on how to deal with the consequences of such risks

>> Next steps and link with the NAP (or equivalent).

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1   This idea has been discussed at the CCRA Customer Group meeting in February 2020 and is unlikely to be taken forward at this stage. This is primarily because not all the data that would be required to produce such an output would be adequately available or granular enough to make a mapping tool such as this useful or accurate. However, it has been recognised as a key area to consider potentially for CCRA4.

1 Introduction

The Committee on Climate Change (CCC) is the Government's statutory adviser on preparing for climate change. Under the Climate Change Act (2008) the CCC, through its Adaptation Committee and secretariat has two main roles in relation to climate change adaptation:

> To provide independent, expert advice on the UK Climate Change Risk Assessment (CCRA).

> To report to Parliament on progress with implementation of the Government's National Adaptation Programme (mainly covering English policies only).

The CCC is in the process of preparing an independent Evidence Report for Government to form the basis of the third UK Climate Change Risk Assessment (CCRA3), which is required by law under the Climate Change Act. To inform the CCC's Evidence Report, a range of research projects have been commissioned that improve the science and impact of the CCRA. The seventh and final research project commissioned by the CCC, to which this report refers, focuses on providing the CCC with advice and products to improve the impact of the CCRA by enhancing its accessibility to its primary customers and target audiences, who are UK Government departments, the devolved administrations and Government-funded arm's length bodies. Sustainability West Midlands (SWM), in partnership with London Climate Change Partnership (LCCP), Mike Peverill (freelancer), Sniffer and Northern Ireland Environment Link, were commissioned to provide this advice.

This report presents the findings of the first of three strands to this commission:

> Advice to the CCC on how to present the CCRA3 Synthesis Report, taking into account the CCRA's breadth and complexities.

The advice is presented as a series of recommendations outlined in this report. It is also designed to inform the following two strands of work, to be developed in line with the recommendations:

> A draft communications/engagement strategy for consideration by the CCC in launching CCRA3.

> Summaries of the CCRA3 Evidence Report for different spatial areas of the UK; the four UK countries (England, Northern Ireland, Scotland and Wales), and different types of geography; urban, coastal, marine, rural uplands, and rural lowlands.[2]

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2   The completion of the summaries for different types of geography will no longer take place following various discussions and engagement with stakeholders. This work is being discussed by the CCRA Customer Group and is being replaced with other activity that will aim to further improve CCRA3 accessibility (discussed further on in this report).

Structure of this report

The rest of this report covers:

> The methodology used to develop the advice required.

> Results reflecting feedback from stakeholders on the accessibility of CCRA2 and ideas for improvements to CCRA3.

> Examples of good practice reflecting how other countries have made their climate change risk assessments accessible and the effectiveness of their respective approaches.

> Recommendations to the CCC that provide advice on how the third CCRA Synthesis Report and other outputs (such as the technical chapters) could be presented based on the evidence gleaned from stakeholder engagement feedback and examples from other countries.

2 Methodology

A series of approaches were taken to enable the collection of evidence to inform the recommendations presented in this report. These involved:

> Engaging with key stakeholders who had used previous CCRAs and its various outputs in order to obtain their views on what worked well and what could be improved in terms of its accessibility and usability.

> Asking key stakeholders for their views on how the accessibility of the next CCRA could be improved by obtaining their thoughts and suggestions on how previously used methods of engagement could be improved and for any new ideas.

> Researching how climate change risk assessments from elsewhere in the world are presented and how accessible and useful these have proven to be for their key stakeholders.

2.1 Engaging with stakeholders

A combined total of 328 individuals[3] were given the initial opportunity to engage and provide their thoughts on the accessibility of the CCRA2 (2016) Synthesis Report and accompanying documentation, along with feeding in their ideas on what CCRA3 (2021) should do better. In total, 268 people engaged in one or more of the following ways:

> Attendance at one of four workshops (England, Scotland, Wales, Northern Ireland)

> Participating in an interview (with questions devised by SWM and CCC in advance)

> Completing an online survey (that included the same questions as above)

These individuals represented a range of organisations from the primary audience base (such as Government officials), businesses, consultancies, local authorities, NHS, academics and third sector organisations. A full list of organisations that engaged via either attendance at a workshop, completing the survey or being interviewed is shown in annex 1.

2.2 Researching good practice examples from other countries

Exploring the methods which have been deployed to improve the accessibility of climate change risk assessments in other countries/localities, and the impact of these methods, was a useful way of identifying examples of good practice that could be applied in the UK for CCRA3.

Specific success criteria outlining what we were looking for was agreed with the CCC in advance and numerous online sources were searched to determine these examples of good practice. We then followed up with individuals who were involved in the development of the assessments to determine their impact on decision-making of stakeholders, policy-making and furthering each country's work on climate resilience and adaptation.

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3   CCC provided SWM with a list of 254 stakeholders that are involved in some way in the development of CCRA3 and who have some experience of previous CCRAs, for example through developing the technical chapters, involvement in other research projects or members of the CCRA3 Committees or Board. SWM and partners then added to this list and included 74 other individuals who are likely to have used the outputs of CCRAs 1 and 2, or who will be interested in the outputs of CCRA3.

In total, 25 examples from other countries were analysed in detail and a commentary on the accessibility and impact of these is available upon request. The table below shows areas of the world included in the analysis:

Country-level risk assessments	Smaller area-level risk assessments
Australia (risk assessment website)	Accra, Ghana
Australia (CoastAdapt website)	Boston, USA
Canada (Changing Climate Report)	California, USA
Canada (Top Climate Change Risks)	Glasgow City Region, Scotland, UK
Estonia	New South Wales, Australia
Germany	Vancouver, Canada
Japan	**Risk assessments covering multiple areas**
Myanmar	Carbon Brief 1.5 and 2 degree scenario interactive chart Global
Scotland, UK	Climate Fragility Risk Assessments Afghanistan, Ethiopia, North Africa, Pacific Islands, South Asia
South Africa	Climate Links: Climate Risk Profiles Several less economically developed countries
Switzerland	European Climate Risk Typology Europe
USA	Shoring Up Stability Lake Chad and surrounding countries, Africa
	Think Hazard! Global
	World Bank Climate Change Knowledge Portal Global

2.3   Limitations and lessons learnt

There are a few aspects of the methodology that may seem to reduce the clarity and accuracy of the results; these are outlined below. Clarification points on the extent to which these aspects were limiting and/or mitigation measures are included in *italics*.

> The request to stakeholders to participate in the interview or other forms of engagement was originally sent around the time of the UK general election on 12 December 2019. Whilst the outcome of this did not radically change the UK's political landscape, it may have resulted in slightly lower engagement from Government officials than originally hoped for. *Despite this, there was still a good level of engagement when including analysis from all forms of engagement and follow up emails were sent with priority individuals (i.e. those that CCC knew had engaged/used CCRA2) in early 2020.*

> Similarly, the original request was also sent out close to Christmas 2019 which, again, could have impacted on overall response rate due to annual leave. *The same response to the above applies here.*

> Running four workshops, more than were originally planned, may have reduced the number of people

who were also willing to be interviewed or complete the survey. The latter two options provided a more in-depth response from individuals which means that there could have been a fewer number of in-depth responses than if only one or two workshops has been convened. *Running four workshops, though, allowed for engagement with a greater number and diversity of people and moreover the format of these still allowed for people to clearly set out their views on CCRA2 and 3. If this exercise was repeated, we would try and identify a greater number of Government officials who may have been willing to be interviewed.*

> The total number of stakeholders who were cited as mentioning a specific point may have been much greater than the numbers quoted in the 'why and so what' column of the recommendations, sections 5.2 and 5.3. This is because it is likely that not all stakeholders present at each workshop wrote down their point or perhaps did not think about it at the time of engagement. *Overall, though, the feedback still provides a strong indication of which points were considered more frequently and deemed as more important than others. It is more helpful to compare the numbers to each other (i.e. the higher the number, the more often the issue arose) rather than to the total number of people engaged with. The interviews also allowed for more accurate and in-depth responses as reflected in the results.*

> Gaining knowledge about the impact that the risk assessments from abroad have had in terms of positive feedback from stakeholders on the communications tools used or, more importantly, the impact they have had on climate risk and adaptation policy or response was challenging purely by perusal of literature. *Therefore, contact details aligned with every good example were sought and individuals contacted to arrange an interview with someone involved in the development of the risk assessment to determine impact. Although only a handful responded, this still provided a useful snapshot of what worked well and what did not. If this work was repeated, more time would be built into the project to try to arrange a greater number of these conversations.*

> There is an element of subjectivity over which examples from abroad were included in this assessment and which were deemed unsuitable. *The criteria, outlined in section 2.4 and agreed with CCC, allowed an element of focus as to what was deemed relevant to assess. Asking other partners directly involved in this project and other stakeholders through the interviews also enabled them to provide their opinions on good practice. The review was also undertaken by the same individual, meaning there was consistency as to what was selected for analysis and what was not.*

A full methodology that provides details on the overall approach to this work is provided in annex 1.

3   Results: Stakeholder engagement

This section provides an overview of the range of stakeholders who responded to the request to engage with this project, along with key findings on their perspectives of the CCRA2 Synthesis Report and other outputs, and their ideas for CCRA3.
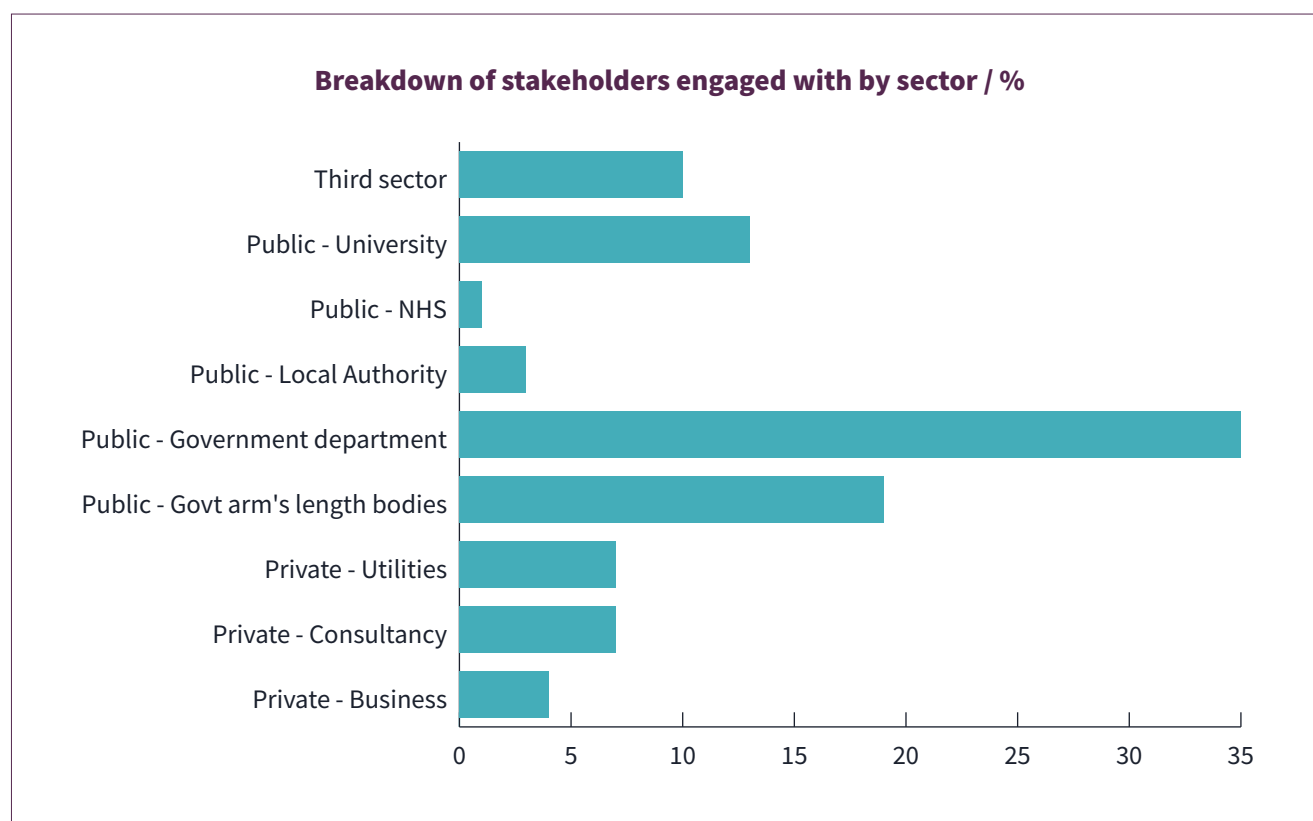
3.1   Who engaged and via what means?

In order to encourage as many people to engage with this study as possible, we provided three ways for stakeholders to share their views:
> Attendance at one of four workshops run between November 2019 and February 2020
> Interviews with one of the project team
> Completion of an online survey, or
> A combination of the above.

In total:
> 235 individuals attended four workshops, one workshop in England and in each devolved administration
> 27 individuals were interviewed
> 6 individuals completed the survey

There is some overlap in these figures as a few people participated in both a workshop and an interview/completed the survey. The approximate breakdown of the organisations that participated in one or more of the above means was as follows:

Breakdown of stakeholders engaged with by sector / %

Sector	Value
Third sector	10
Public - University	13
Public - NHS	1
Public - Local Authority	3
Public - Government department	35
Public - Govt arm's length bodies	19
Private - Utilities	7
Private - Consultancy	7
Private - Business	4

A further breakdown that shows which nation of the UK the stakeholders represented is shown below. The total number is also presented showing that around 30% of all stakeholders represented England, approximately 18% Scotland, 22% Wales and 14% Northern Ireland. The remaining 16% were stakeholders that operated in more than one, or all, UK nations (for example, large consultancies).

Breakdown of stakeholders engaged with by sector and country / %
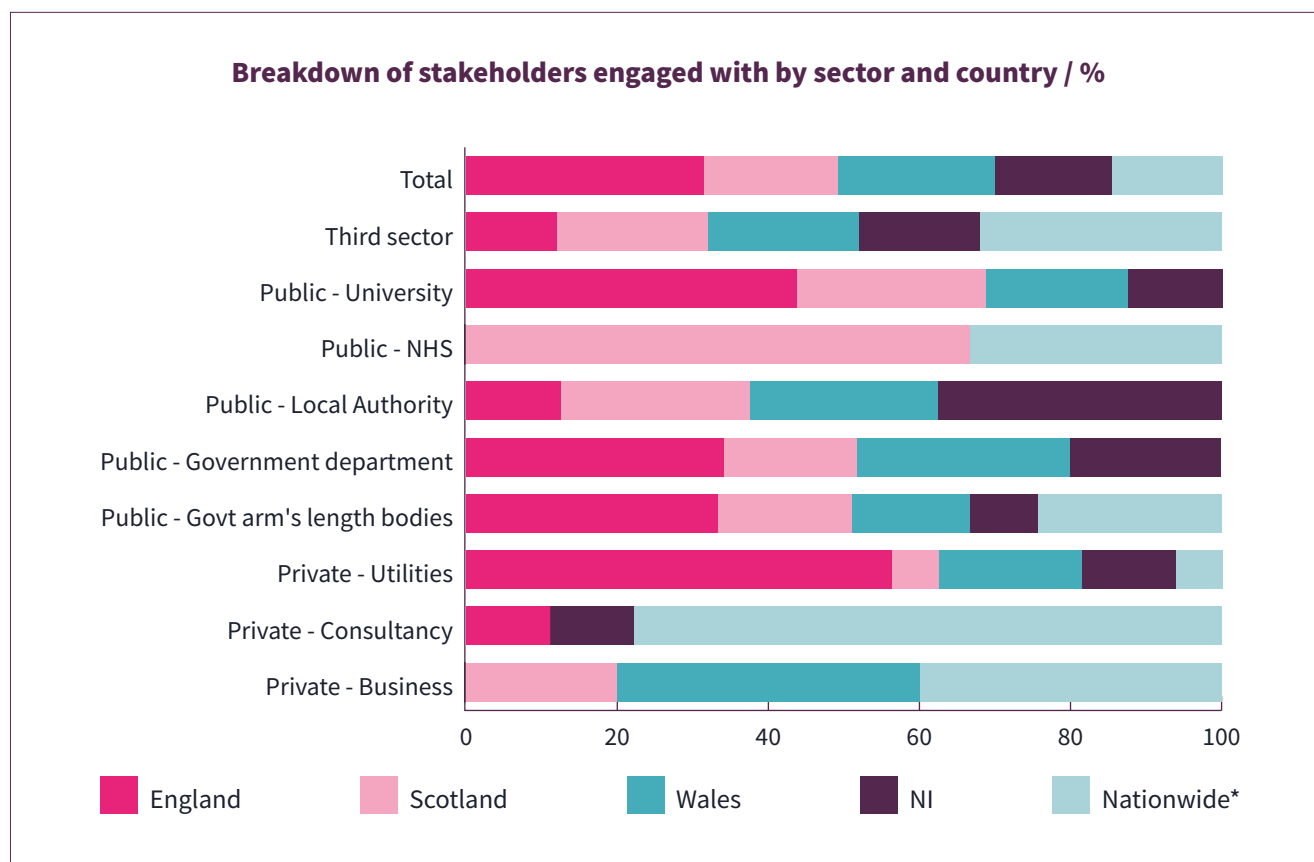
Stakeholders who completed the survey or were interviewed had all been involved in the development of, or had used, the outputs of CCRA2. However, many of those who attended the workshops were new to the CCRA process but considered that CCRA3 would be useful for them. It is estimated that in total, approximately half of the 268 people who engaged with this project had used or were involved in the development of CCRA2.

Perspectives from people who fit into either category are useful. Those who had engaged with the CCRA process before had insight into what worked well and what did not, and those who were new to the process provided a fresh perspective and new ideas.

Sections 3.2 and 3.3 give an indication of the sorts of things stakeholders told us and issues that they were particularly passionate about. The comments reflect fairly representative views coming from the ~250 stakeholders with whom we engaged and the specific comments selected below are ones that we felt were articulated particularly clearly. Section 3.4 goes on to provide a more specific overview of the responses to the interview/survey questions.

3.2 Overview: what did stakeholders say about CCRA2?

"Would have benefited from a more specific assessment of Wales, to be achieved by involving Wales in its production."

"I fed into CCRA2 a bit but did not use it as I thought it was for others/for a different audience."

"The briefs produced alongside were very useful especially when engaging with Government ministers."

"Headline messages could also be clearer and punchier for non-tech audiences."

"Infographics, factsheets, key statistics and summaries all very useful."

"It was a 'battle' to consider the perspectives of the devolved administrations."

"Elements of the NI summary come verbatim from UK summary and the wording of issues may not be fully relevant to NI."

"I often use the CCRA2 summary as the main cover slide in internal briefings; this gives rest of presentation more gravitas as it underlines risks and vulnerability, acts as an evidence base and gives credibility to internal specialists."

"The video and the infographics have been incredibly useful for training sessions with officers and briefing local politicians as they are quick and easy to digest."

"I don't understand the relevance to my work or how I can use it."

3.3   Overview: what ideas did stakeholders have on how to improve CCRA3?

"We need to involve people with practitioner experience in the creation of the CCRA."

"Have themed workshops/ information days on findings of the CCRA after its publication."

"I would like CCRA3 to be more placed based, i.e. what are the risks to a specific area? That is very much what's missing at this stage."

"An easy-read version would be excellent, to help policy-makers communicate with stakeholders and encourage action in other sectors e.g. communities."

"Place-based case studies to personalise and localise issues and to highlight interconnected and systems approach, overlapping issues, urgency and solutions."

"Important to be able to download individual chapters and specific figures."

"Provision of infographics, diagrams for each sector/ department i.e. infrastructure, health, built environment etc. aimed at practitioners."

"Provision of a summary of cross-sector interactions to pull out interacting/ cross-cutting risks (e.g. flooding)."

"Pre-prepared presentations for stakeholders summarising key points from the report."

"The development of a map would be useful for central Government departments with large estates for determining which risks are more regional in nature."

"Should consider key messages/ summaries for each Government department and clarity on what their roles are in relation to the CCRA."

"It is important to tie together both the scenarios and risk assessment rather than have them sit separately (i.e. UKCP18 and CCRA)."

"All the technical/ method information should be in a secondary report and not part of the main output."

"You can produce all the information you want but if it's not tailored to different audiences it won't get used."

"If the main audience is Government then provide info for specific policy areas with factsheets, for example."

3.4   Responses to questions asked of stakeholders

This section provides an overview reflecting how stakeholders answered specific questions that were asked of them. A set of specific questions were developed for the survey and interviews (see annex 1) and it is the responses to these that is the main focus here due to their greater depth. Where workshop attendees raised similar issues or have asked for similar outputs to improve accessibility, the number of remarks noted from the workshops are included in the analysis. However, the stakeholder quotes and primary analysis outlined in this section come from the interview and survey responses. This is because the workshop attendees were given a much more open platform to provide their feedback and aligning this to the set of interview questions was not always possible or helpful.

Thirty people in total took the survey or were interviewed, represented by the following organisations:

> Anglian Water
> Bristol City Council
> Cardiff University
> ClimateSense
> Defra (2)
> Environment Agency (4)
> Eftec
> Forestry Commission
> Marine Scotland (2)
> Mott MacDonald
> National Trust
> NHS Health Scotland
> Public Health England (2)
> Public Health Wales
> Queens University Belfast
> Retiree (involved in CCRA2 development)
> Sayers and Partners
> Scotch Whisky Association
> Scotch Whisky Research Institute
> Trioss
> University College London
> Welsh Government (2)
> Wales and West Utilities

Some of the results shown below will not reflect a response from all 30 stakeholders. This is either because a) not all respondents answered each question or b) some respondents selected 'n/a.' Five of the interviews were held with two people and in these cases their response is counted twice if no differentiation was noted.

Annex 1 provides full details of the stakeholders that were engaged with in total, including workshop attendees.

Q. How useful were the following forms of communication and engagement in helping you to locate, interpret and apply the required information from CCRA2?
[question part open, part closed]

The graph below shows which of the outputs interviewees specified that they used and those that were highlighted as positive (for example, they were helpful in developing their organisation's response to climate risk).
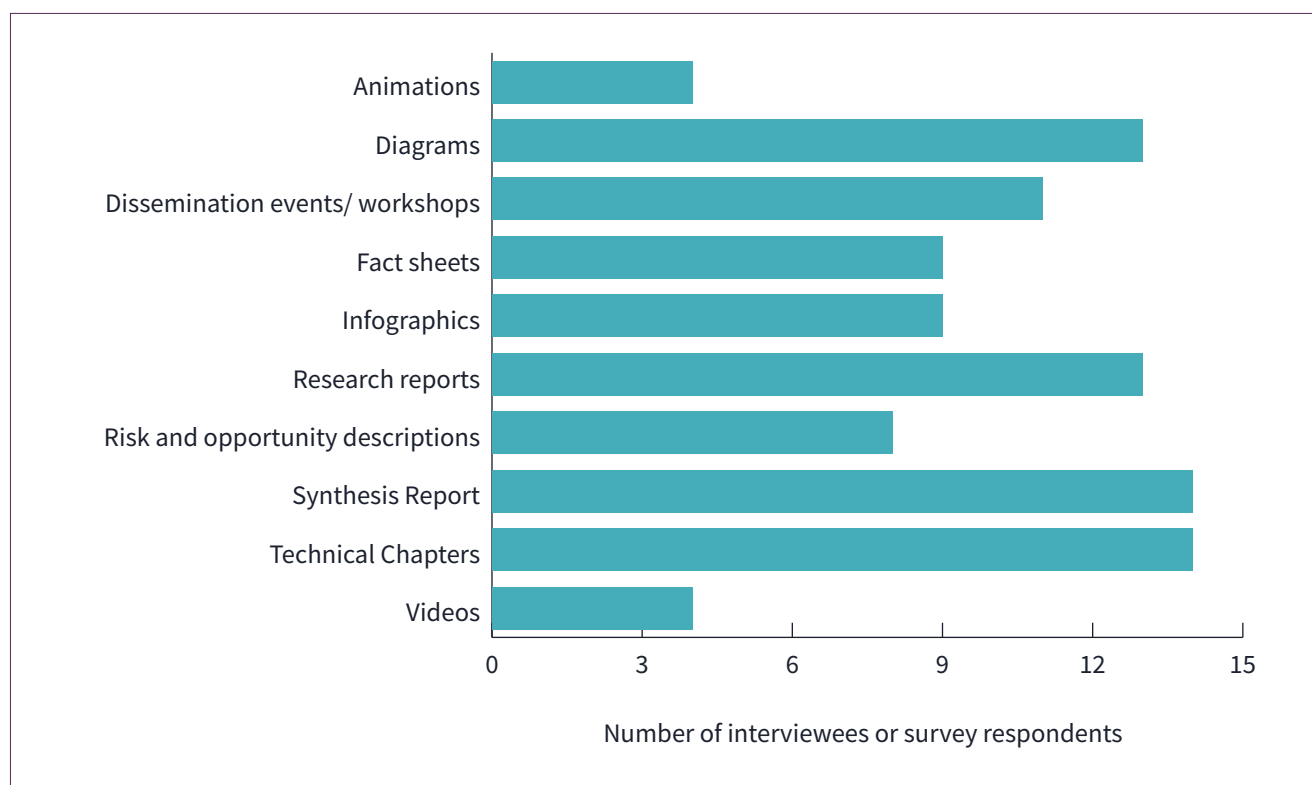
As the graph shows, alongside the main outputs, such as the Synthesis Report and the Technical Chapters, communication tools such as diagrams, infographics and factsheets were considered useful by a significant number of people. Dissemination workshops were also cited as helpful by a significant proportion of those engaged with. Seldom referenced were videos and animations. A broader overview of which of these outputs were used by stakeholders at the launch of CCRA2 is provided in section 5.1 and some examples of the outputs that were used by some of the interviewees include the following:

> "[I have used the] **infographics** to engage with specialist groups e.g. those that focus on air and water quality on issues such as vector borne diseases, and for training future practitioners."
> "I've used the **main risk diagram and technical information** to communicate with senior executives within [the organisation] and other stakeholders."
> "I often use the **CCRA2 summary** as the main cover slide in internal briefings; this gives rest of the presentation and report more gravitas as it underlines risks and vulnerability, acts as an evidence base and gives credibility to internal specialists."
> "**Fact sheets and infographics** were used in reports and presentations and a set of slides was developed for each chapter from the Welsh summary."
> "I used elements of the **full report, risks, opportunities and diagrams** in helping [the organisation] write its first climate change action plan."

Q. Which of the following outputs that made up CCRA2 did you use?
[closed question, interviewees/survey respondents only]

No. respondents who used this output
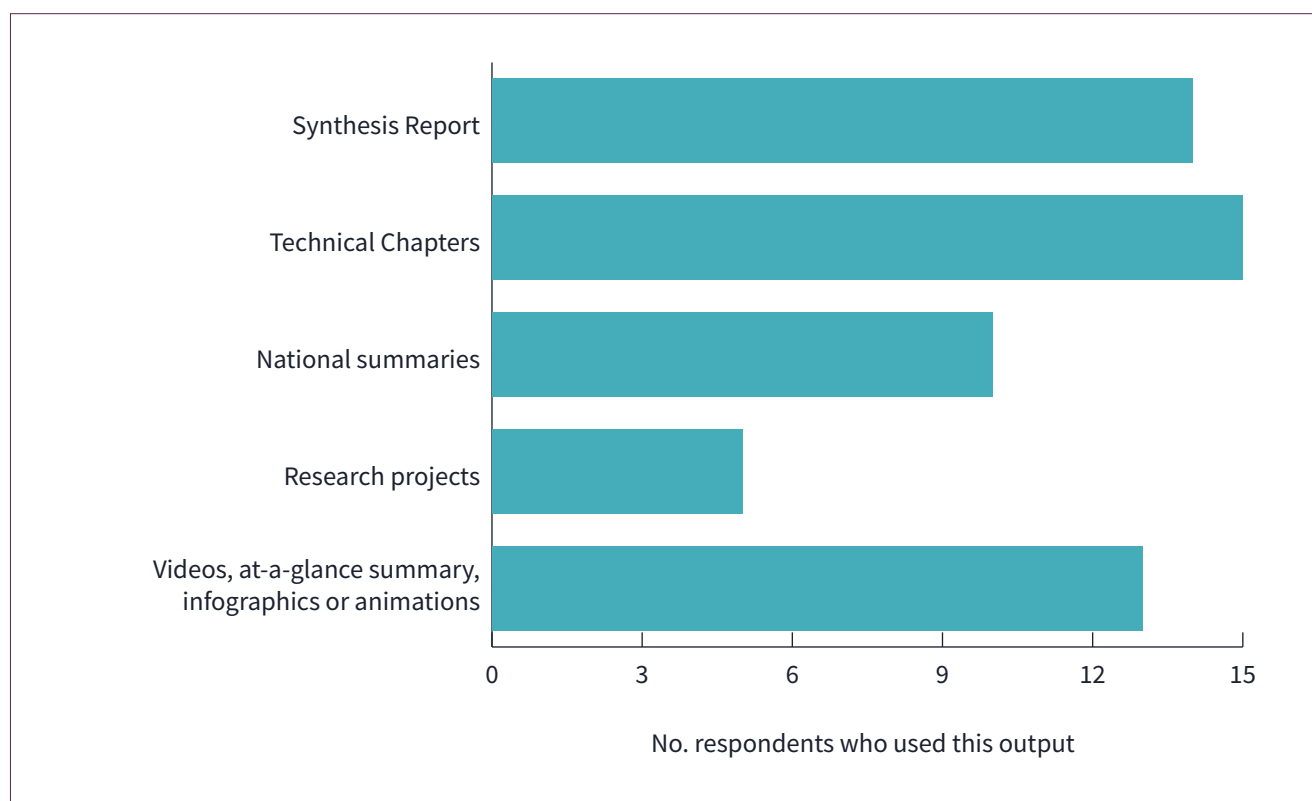
Q. What did you use CCRA1 or CCRA2 for?
[closed question, interviewees/survey respondents only]

No. respondents who used the outputs for specified reason
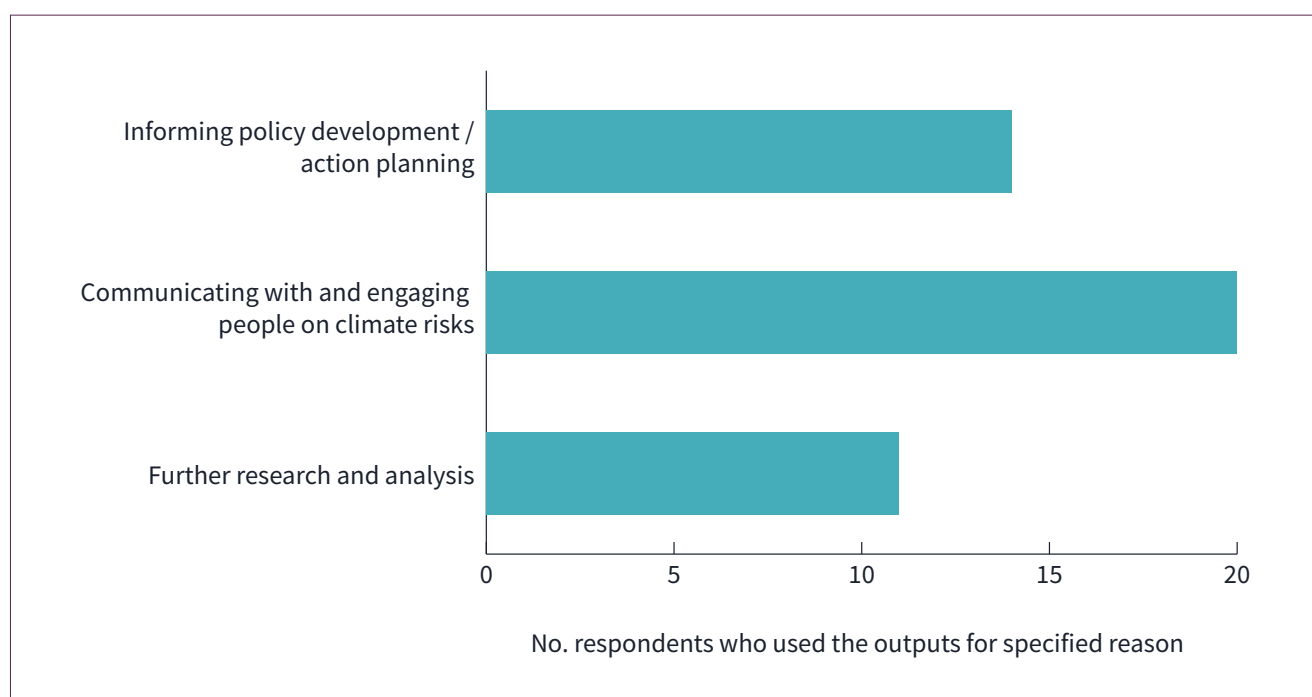
Q. If you used CCRA2, how easy or challenging was it to locate, interpret and apply the information that you were looking for?

Note that this was an open question, therefore an interpretation of how easy or difficult the interviewee/ survey respondent found CCRA2 was made based on their response.
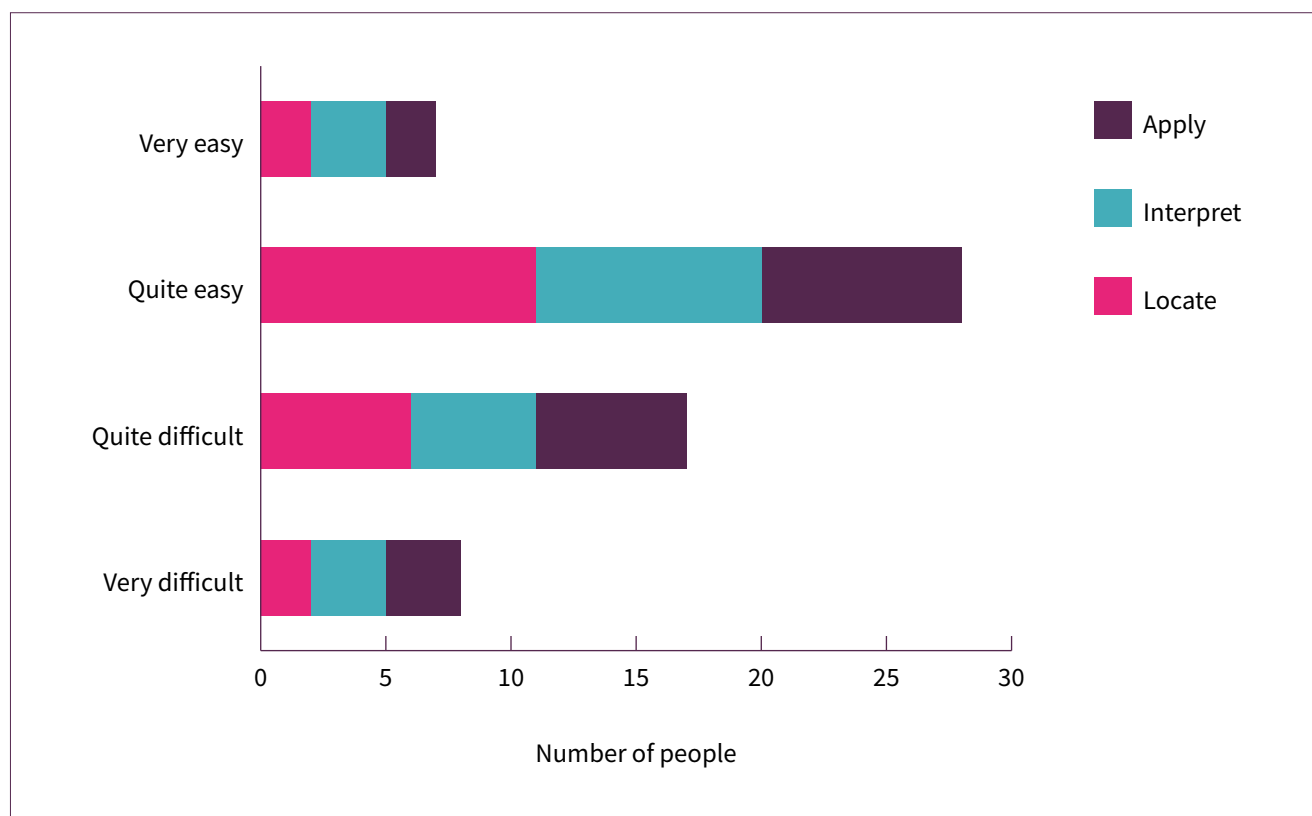
Q. Was there anything missing from CCRA2 that would have helped with your own work? [open question, interviewees/survey respondents only]

The overwhelming response to this question focused on the need to tailor the outputs of CCRA3 to different audiences and sectors. Some example stakeholder remarks included:

> "Having tailored information that is relevant to your specific sector, either geographical or process-based, in order to understand where to embed it in the risk register and why."

> "There was no understanding of how to tailor the different information for different audiences. You can produce all the information you want but if it's not tailored it won't get used."

> "[CCRA3] should review all risks to the sectors so that people in the sectors understand the full range of risks."

> "It would help to be able to select what 'type' of audience you are before you start searching for information and depending on what you select will depend on what appears."

Other points referenced by more than three of the interviewees were:

> The requirement for a more effective way of searching for **cross-cutting themes** across outputs, e.g. flooding, water, natural capital etc.

> The provision of more place-based **case studies**.

> **Better linking** of one CCRA report to another and better signposting of outputs.

The responses to the next two open questions asked of interviewees and survey respondents are taken together as there was much overlap with the answers provided. The tables below also show how many workshop attendees called for similar outputs and suggestions. The questions are:

Q. Could CCRA3 be better presented than CCRA2 in order to help you find, interpret and apply the information you need? If so, how?

and

Q. If you had one wish for CCRA3 in terms of making it user-friendly and suitable for your needs, or the needs of people you interact with, what would that be?

The below table outlines the top five most frequent themes raised by respondents to this question. As with the responses to the previous question, the most popular suggestion made by interviewees was to ensure provision of more non-technical audience-focused outputs.

Theme	Example stakeholder remark	Number of similar remarks made by interviewees/ survey respondent	Number of similar suggestions made by workshop attendees
Provide non-technical summaries and headline messages for different audiences and clarity on their role	"There needs to be co-production with potential end users. Need a better understanding of how audiences would want to use the material, and then craft the presentations."	14	21
Develop a more innovative way of being able to identify cross-cutting risks (e.g. flooding)	"It would be helpful to have the risks cut in different ways at a high level (summaries not the detail), for example to give an overview of water availability risks."	5	6
Continue provision of communication tools, especially infographics	"Infographics are the flavour of month, so some more of these around individual risks would be helpful."	4	19
Develop an interactive map to view risks at a more local level	"Having an interactive map that allows users to obtain risks and vulnerabilities in specific areas would be very useful."	4	16
Access to outputs directly on the website rather than only being available in PDF form	"Better if not a huge PDF, should be a website that you can access information from different angles."	4	2

Q. A number of summaries will be produced for CCRA3 including for the devolved administrations in Northern Ireland, Scotland and Wales. What additional summaries would you find most helpful? For example, sub-national (South West, North East, etc.), thematic (cities, coastal, upland/lowland, etc.) or sectoral (flooding, transport, public health, etc.) [open interview/survey question, supplemented by workshop attendee suggestions]

There were a range of responses to this question, largely driven by the organisation and sector that each respondent represented. The below table extracts the four suggestions that were mentioned more than once.

Summary suggestion	Example stakeholder remark	Number of similar remarks made by interviewees/ survey respondent	Number of similar suggestions made by workshop attendees
Summaries for specific areas and locations, including provision of a map to identify risks in certain locations	"I would like CCRA3 to be more placed based, i.e. what are the risks to a specific area?"	7	16
Summaries should be guided by users and be bottom-up and have a clear audience	"[We] need to remember who the key audience is and what they would find most useful."	4	21
Include summaries on rivers and at river catchment level	"Catchment summaries would bring different stakeholders like water companies, land managers [together; they] could be encouraged to cooperate more if the evidence relevant for all of them can be presented together."	4	3
Summaries should be developed around priority risks	"The summaries developed should also depend on the risks that have been deemed a priority."	2	2

Q. Do you have any suggestions of how to improve the searchability and navigation of larger-sized reports (e.g. the Evidence Report which stretched to 2,000 pages) so that you can find the information you need quickly? [open interview/survey question, supplemented by workshop attendee suggestions]

The table below outlines the three most common responses to this question for which only 16 interviewees volunteered an answer, but responses were supplemented by workshop attendees.

Suggestion on improving searchability/navigability	Example stakeholder remark	Number of similar remarks made by interviewees/ survey respondent	Number of similar suggestions made by workshop attendees
Enable the user to find outputs by typing keywords into a search function (especially useful for identifying cross-cutting issues)	"Agree a list of keywords and create a Google-like search engine for it."	6	6
Access to outputs directly on the website rather than only being available in PDF form	"Everything [I've] used for CCRA2 has been found on the web, not from PDF, and so web approach again much better."	4	2
Better linking between different CCRA3 outputs	"Better linking between the Welsh summary and to Synthesis Report/ Technical Chapters so we can understand the Welsh argument better."	4	1

How stakeholders responded to all these questions, along with comments made at the workshops, have been used to develop the recommendations presented in section 5.

4 Results: Good practice examples from around the world

The following section provides examples of good practice in accessibility and impact from climate risk assessments in other countries and localities.

4.1   What were we looking for?

Our definition of 'good practice' is shown in detail in the methodology (see annex), but in short this includes:
Use of communication tools and methods to present the results of the risk assessment.
Efforts to improve navigability of large documents.
The use of charts and interactive maps to summarise risks.
Evidence that the above methods have obtained positive feedback from stakeholders.
Evidence that the above methods have been used to influence adaptation policy and practice.

We then considered which methods deployed elsewhere are most applicable to the UK CCRA. We were looking for ways that reports equivalent to the UK CCRA2 Synthesis Report and other outputs were made more accessible in order to build on efforts already made to improve CCRA accessibility in the UK.

4.2   Case studies

The following examples provide an overview of methods that have been deployed by other countries to improve the accessibility of their climate risk assessments and ways that similar approaches could be implemented for the UK CCRA3. The examples shown overleaf are selected primarily to reflect outputs that stakeholders suggested they would most like to see implemented to improve UK CCRA3 accessibility and that demonstrate a clear way of achieving these.

Consolidation of climate change information

South Africa's 'Green Book,' launched in March 2019, is the only tool that brings together a user interface depicting climate projections, risks and adaptation actions. It includes comprehensive mapping and an adaptation action planning tool. Approximately £25m has gone into ensuring that all the aspects needed to develop provincial resilience to climate change have been included in one single port of call. The country's Government has endorsed it as the main climate planning tool and it is being used to produce South Africa's first ever climate change adaptation plan.

Application to CCRA3: While the complexity of the project is high, the idea of better linking projections, risks and adaptation actions was deemed important by UK stakeholders, along with breaking risks down regionally and the value of being able to visualise risks through a mapping interface at different points in time.
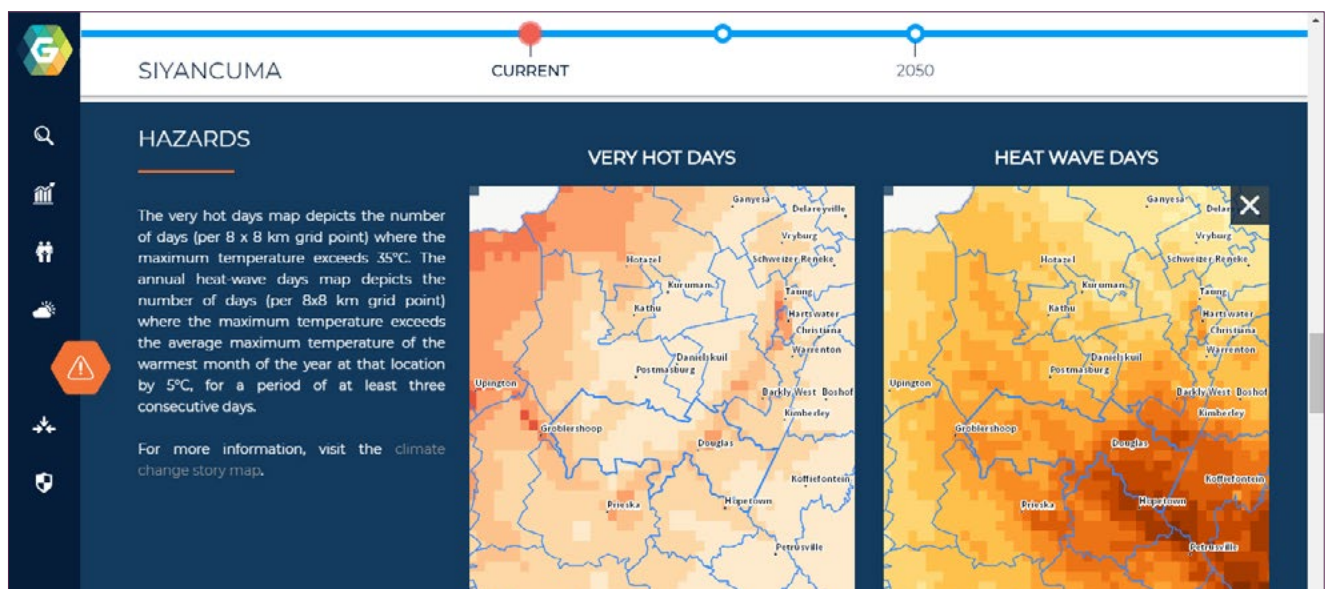
Above: The climate risk mapping tool.
Below: The adaptation action planning tool, useful for catalysing action and future planning ideas.
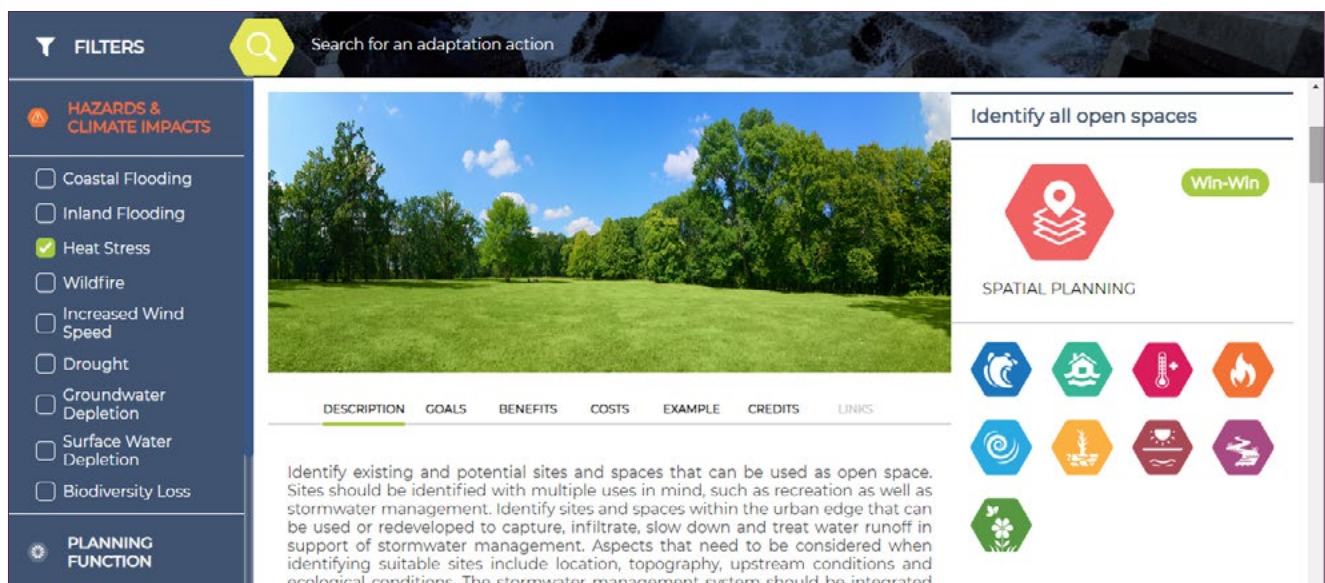
Interactive navigation

Glasgow City Region's first Climate Change Risk and Opportunity Assessment (2018) sets out the risks and opportunities for Glasgow posed by climate change out to the end of this century. It highlights areas where more action is needed in the next five years. Much of the assessment builds on the good practice approaches developed for the UK CCRA2 but one new tool that helps to link the key risk descriptors to more information in the main report is the use of an interactive PDF.

Application to CCRA3: The principle of being able to click on risks descriptors to display more information about each risk is one deemed very important by stakeholders and could be replicated using simple hyperlinks or a more sophisticated approach such as the one taken in Glasgow City Region.

Above: the list of risk descriptors. When you click on one, the relevant section from the main report appears, as shown below.

Signposting and searching

The USA's [Fourth National Climate Change Assessment](#) brings together human welfare, societal and environmental elements of climate change risks for the US. The assessment provides largely web-based materials rather than PDF downloads (although the latter are available too by individual chapters). A simple menu makes this assessment easier to navigate, which appears when scrolling down the webpage. It is clickable, meaning users can quickly find the chapter they are looking for against each theme. Each chapter is also available as its own full PDF, executive summary PDF, figures are published as separate zip files and a pre-prepared PowerPoint slideshow enables users to select any material they wish to highlight in their own work. These can all be found very easily as all downloads are available on one webpage and set out very clearly in the form of a matrix.

Application to CCRA3: The idea of providing the option of both web-based and PDF downloads, along with the navigation tool and pre-prepared slides, could easily be replicated for all elements of CCRA3.
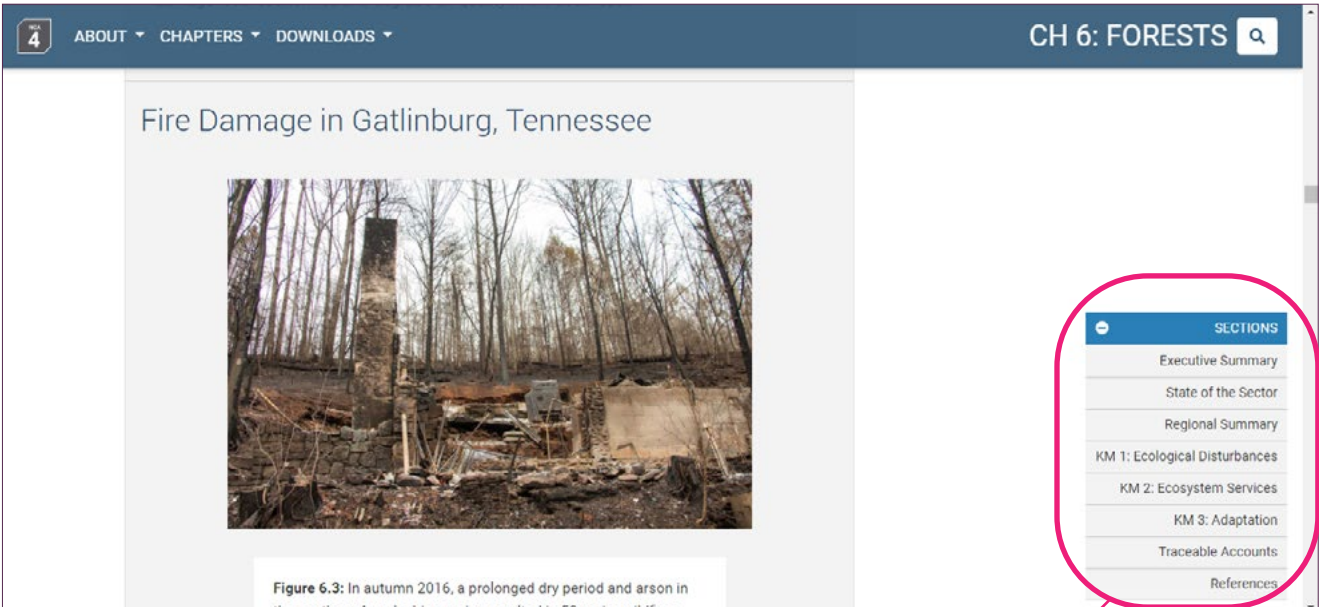
Above: Menu navigation tool (circled).
Below: Download matrix.

Charting change

Carbon Brief, a UK media organisation and website covering the latest developments in climate science and policy, published an interactive chart in late 2018 entitled 'the impacts of climate change at 1.5°C, 2°C and beyond.' It provides a summary of the changes that are likely to occur against different climate scenarios and in different locations dependent upon changes in global temperatures. This is encircled by relevant photographs to make the chart visually engaging, and an interactive yet simple to use menu bar that allows users to quickly find the theme or country they are interested in.

Application to CCRA3: An equivalent solution for CCRA3 would not need to be as detailed and therefore something similar could potentially be replicated to be one of the front-facing outputs.
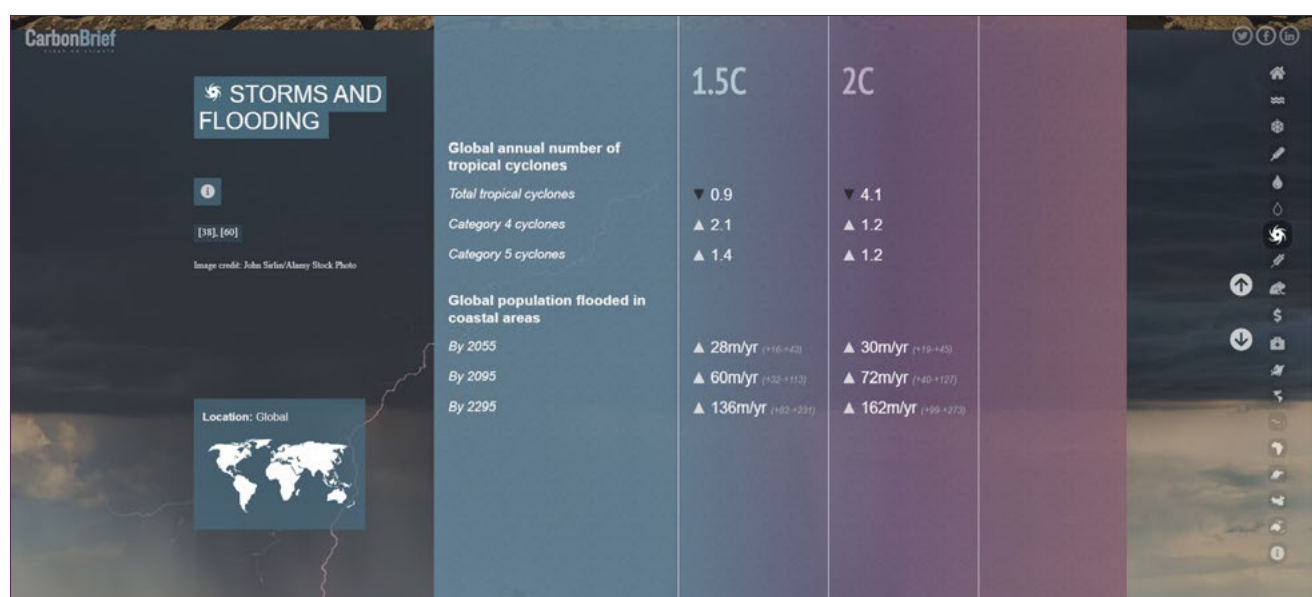
Above and below: Snapshot of the chart, reflected global storm trends (above) and African drought (below). The menu bar can be seen on the far right hand side and each icon is clickable.

Mapping the future

ThinkHazard!

[ThinkHazard!](#), produced in 2017 by the Global Facility for Disaster Reduction and Recovery (GFDRR) and several global partners, is a new web-based tool enabling non-specialists to consider the impacts of disasters on new development projects. The tool is based around an interactive map that allows users to click on any area of the world down to county/province level, revealing a simple, high-level assessment of the magnitude of risk from different hazards and a series of broad recommendations for consideration.

Application to CCRA3: This is the closest example we have found of a simple mapping tool concept showing high level regional risks, something which was highlighted as desirable in the stakeholder engagement process.
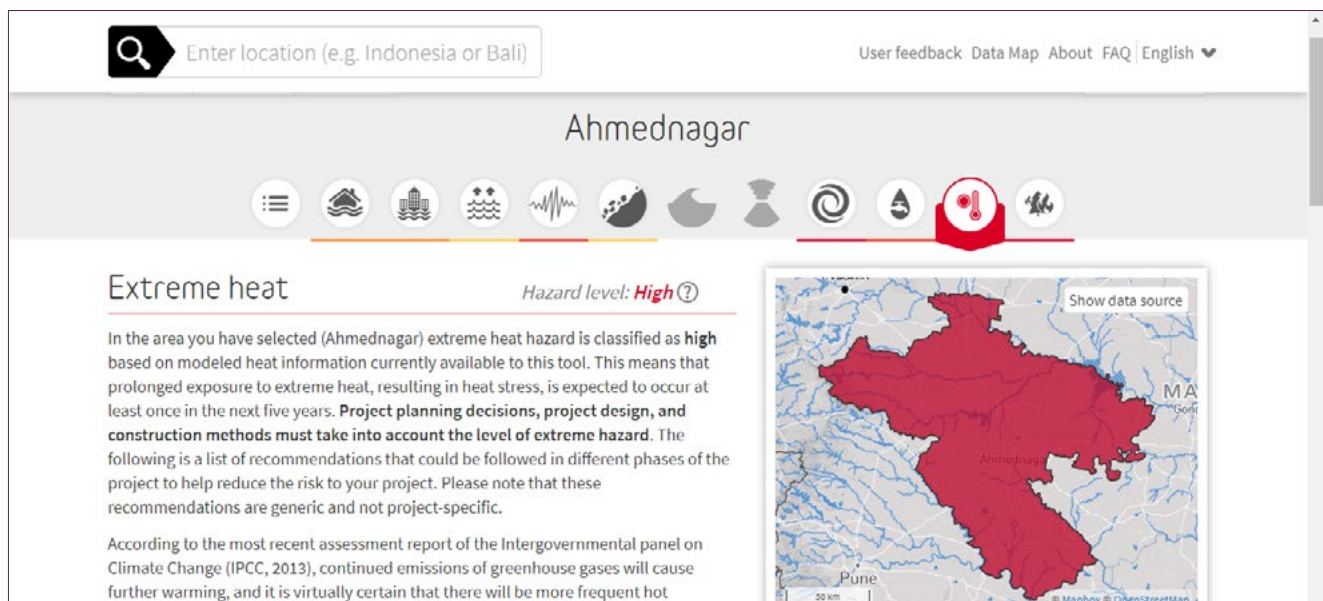
Above: Mapping and hazard interface.
Below: Information provided depending on area and hazard selected.
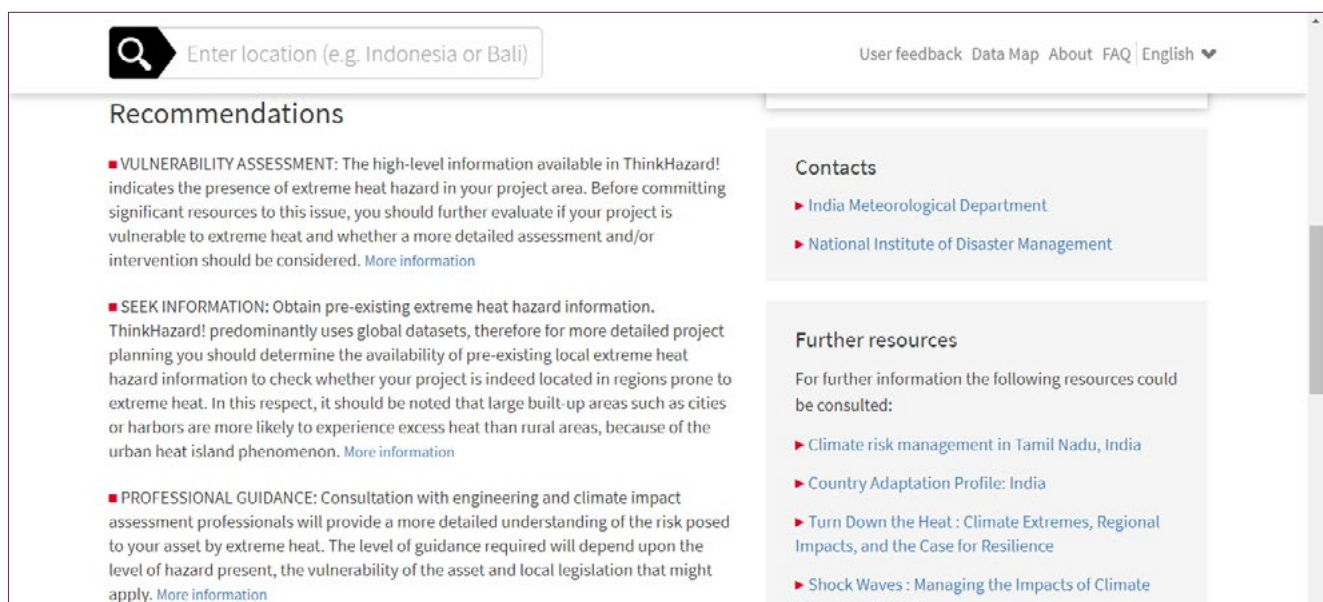
Bringing risks to life with case studies

Many stakeholders have suggested that the provision of case studies to show how a national climate change risk assessment can be used to inform policy and planning would be useful. The CoastAdapt tool, an information delivery and decision support framework for climate change risks on Australia's coasts, provides several such examples.

Application to CCRA3: Case studies help to make climate risks more tangible and applicable to real-life situations. Case studies demonstrating how stakeholders have used CCRA2 to inform policy will also help and both can be applied to CCRA3, as part of each devolved administration summary.

**Above: Case study of assessing climate risks to North Queensland Airports.
Below: Case study on monitoring biodiversity in Melbourne.**

Bringing risks to life with real situations

Switzerland had made the highly technical aspects of its climate scenarios more relevant to its residents by translating them into impacts; namely the effects that climate change may have on real life situations, such as the flooding and overheating of homes and effects on the skiing season. This is also done in an engaging way, using images and videos to show what could happen in future and how adaptation to the various risks will improve their lives.

Application to CCRA3: While the examples in the Swiss assessment may not be appropriate, the idea of applying the risk assessment's key messages to real life case studies may help findings resonate more widely, as requested by UK stakeholders.
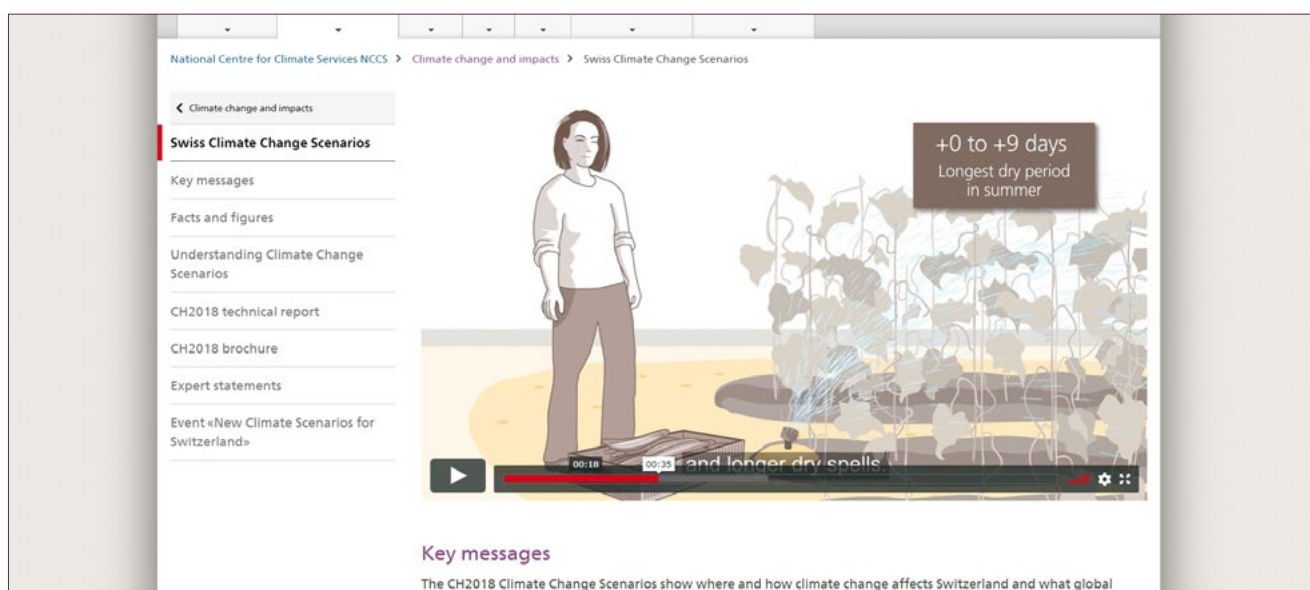
Above: Video showing potential impacts on real life situations, in this case, growing cucumbers.
Below: Summary of the scenarios and the four consistently used key real-life situations.

A succinct Synthesis Report

The CCRA3 Synthesis Report will be the go-to output that the majority of stakeholders will engage with. Ensuring that key messages and findings can be easily extracted is of prime importance. It must be emphasised that the UK is already displaying leading practice when it comes to bringing together and summarising the huge quantities of information in the evidence and technical reports, but two other examples of similar reports are shown below, courtesy of Myanmar (48 pages) and California, USA (20 pages).

Application to CCRA3: A web-based and PDF version with a similar layout in terms of style, length and format of both reports could be replicated for the UK Synthesis Report. Many UK stakeholders have emphasised the importance of keeping all outputs succinct and concise.

Above: Snapshot of the report from Myanmar.
Below: Snapshot of climate risk report from California.
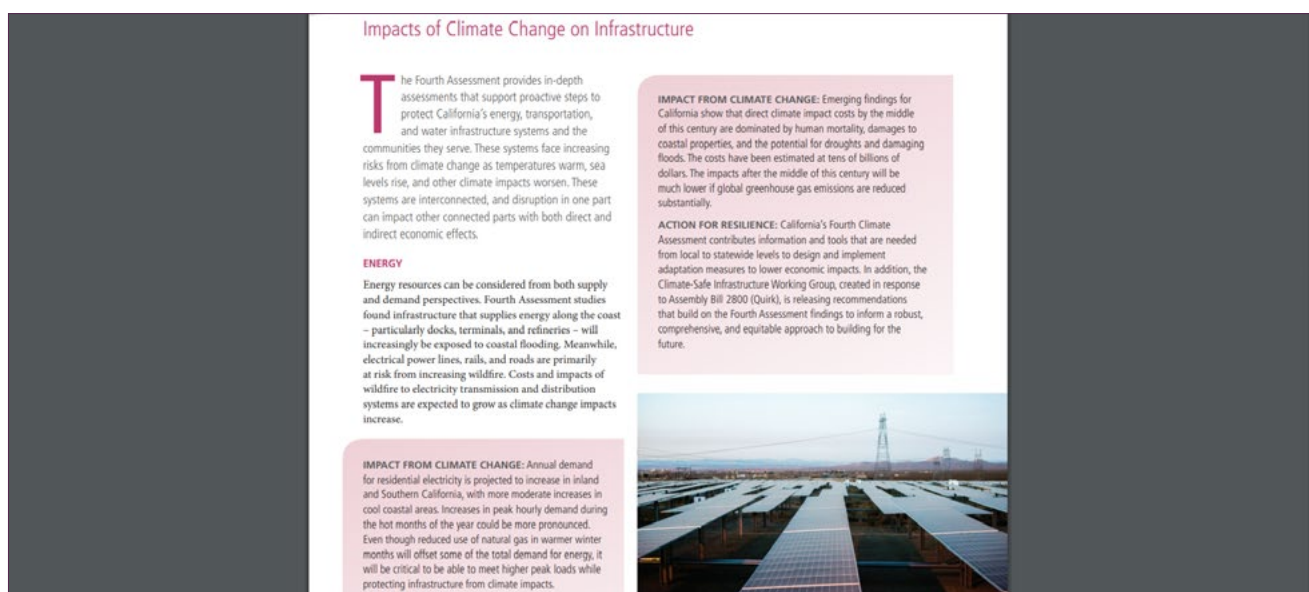
Visual reporting

Looking at other reports that focus on climate resilience is also helpful when seeking ideas that could be replicated in the UK CCRA Synthesis Report. Two cities, Vancouver (Canada) and Accra (Ghana), have developed plans that, whilst not exactly equivalent to the UK Synthesis Report, show how a huge amount of information can be presented in a digestible and visual format for use in policy and by practitioners. This is especially relevant for the PDF version of the Synthesis Report where stakeholders may be sending/printing copies for dissemination across their department/organisation.

Application to CCRA3: Visual aids, photos and infographics form part of these reports and these techniques could be integrated within the UK Synthesis Report, rather than presented separately.

Above: Snapshot of Vancouver's Climate Change Adaptation Strategy.
Below: Snapshot of Accra's Preliminary Resilience Assessment.
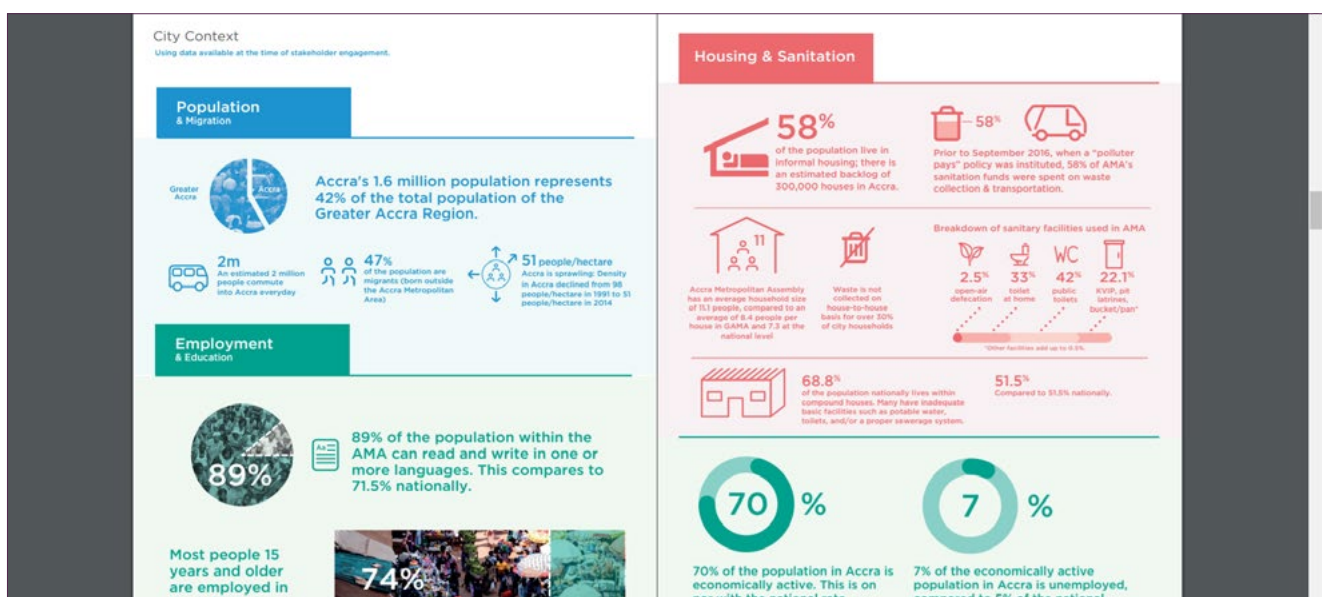
Engaging is key

SWM and the partnership supporting this project have years of experience between us that demonstrate how a robust and extensive stakeholder engagement process is the key not only to the development of any successful climate risk assessment (for example, training for SMEs), but in order to disseminate key findings and messages. Many countries have described their engagement approach and two good examples come from Canada and an assessment for Lake Chad and the surrounding African countries. SWM held interviews with representatives involved in developing these assessments.

Canada's Top Climate Change Risks assessment:

> Ten targeted briefings with different audiences, including:
>> One webinar for adaptation professionals with 500 in attendance.
>> One workshop for provincial Governments and environmental experts.
>> One event focusing on the creation of an environmental and adaptation task force.
> Overall, measured impact has come less from applying a range of innovative communication approaches and more from an emphasis on people, through face to face communication and providing support.
> One of the panellists has used the document to inform a provincial action plan on adaptation as a result of subsequent engagement.

This could mean serious damage to people, infrastructure, communities, and industries over the next 20 years.

Video from the Canadian assessment

Shoring Up Stability: Addressing Climate and Fragility Risks in the Lake Chad Region

> One-on-one personal briefings and a launch event, with concurrent satellite events, had a huge positive impact in terms of the levels of engagement within the first six months of the assessment. Engagement took the form of a mix of quick presentations on a one-to-one basis with policy-makers or larger scale events.
> Policy-makers ended up using some of the communications tools created for this assessment that were initially designed for engagement with the public, for example the comic book story. This was an unintended but positive outcome.
> The comic book stories were also taken into schools and used as an education tool.
> More exposure of the assessment was generated through a good press strategy and articles were published through credible media outlets such as The Economist which, again, helped to influence policy-making.
> Photos and videos were highly sought after by other agencies who were working on similar projects globally; the project has generated wide interest from others around the world.

The lake has always varied in size. People adapted to the seasons, switching their jobs according to the water supply, or through seasonal migration.

DURING THE DRY SEASON, WHEN THE LAKE WAS SHALLOWER, I COULD FARM...

...AND DURING THE WET SEASON I COULD FISH...

...OR GRAZE OUR CATTLE.

Comic book example from Lake Chad
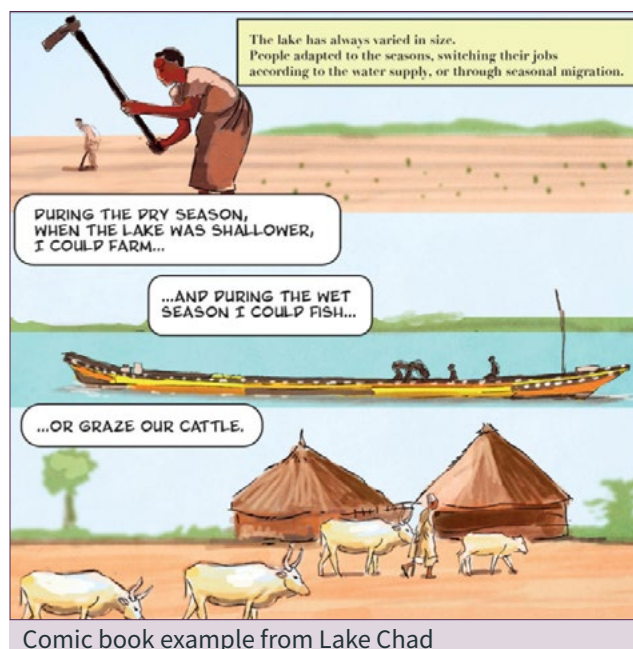
5 Recommendations for the CCC

This section provides a series of suggested recommendations that should be considered with the aim of improving the accessibility of CCRA3, based on the information gathered from both the stakeholder engagement process and the review of other international examples of risk assessments or similar.

5.1   The baseline

The commissioning of this research and the findings of this report are not intended to suggest that effort was not made to improve the accessibility of CCRA2, as the diagram below shows. The CCC worked hard on CCRA2 accessibility and several of the outputs produced were positively received by many UK stakeholders as reflected by some of the comments given during this research and reflected in section 3.2 in this report and the graph outlining frequently used outputs on page 16. Some other positive comments from stakeholders reflecting CCRA2 accessibility showed that the website, briefing notes, infographics and factsheets were all useful:

> *"Very good systematic listing of individual risks"*

> *"Easy to locate and logical on website"*

> *"Briefs produced alongside the main assessment were very useful especially when engaging with Government ministers"*

> *"Infographics, key statistics and summaries all useful"*

> *"Factsheets good!"*

> *"In terms of the way CCRA2 was developed, it was superb, especially given that the document tries to encompass all UK risks!"*

Given these efforts, the CCC has already gained some anecdotal and statistical-based feedback on CCRA2 engagement levels and on the tools implemented. This included:

> 17,500 website pages views on evidence report launch day (12 July 2016) (highest ever for the CCC at the time)

> 3,100 views of the video and animation on launch day (highest ever for the CCC at the time) and 29,810 total views to date (correct on 30 March 2020).

> 450 mentions of CCRA by broadcast and print media on launch day (highest ever for the CCC at the time)

> 156,000 impressions on Twitter and 7,500 profile visits in the launch month (July 2016)

> Infographics widely used by other organisations in slideshows at events

> Fully booked cross-sector stakeholder events with 150+ attendees

This analysis, along with comparing the UK CCRA with other examples from abroad, shows that the UK is already one of the leading nations in communicating its national climate risk assessment and this fact should not be ignored. It is therefore important that the below recommendations build on the good work already done to date and where things worked well, fundamental changes do not need to be made.

However, there were many useful, constructive comments and opinions from stakeholders on the accessibility of CCRA2 and ideas for CCRA3 and, combined with the examples from abroad, the below sections outline our independent and stakeholder, evidence-informed recommendations as to how the CCC should further improve the accessibility of CCRA3.
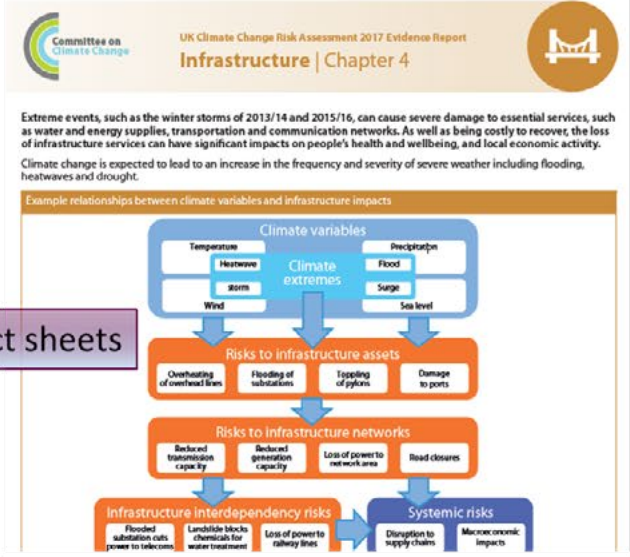
Pages 36-48 provide a list of recommendations for consideration by CCC on improving the accessibility of the CCRA Synthesis Report (5.2) and wider outputs (5.3). There are two overarching points to emphasise:

> Many of the below recommendations may benefit from an extra visual/interactive explanation to aid the clarity of the recommendation and to show what it may look like if it were to be implemented. These can be picked up in the Communications Plan, to be developed subsequently, or via separate engagement. Specific aspects around visual design are not discussed in detail in this report.

> The recommendations developed are based on the opinions and ideas from stakeholders engaged with during this process and examples from other countries. SWM has articulated these ideas and examples and arranged them into the table overleaf. While an indication of resource and practicality is included, the recommendations do not consider such potential implications in detail.

These are examples of the various methods deployed to help make CCRA2 accessible, many of which have been positively received.

5.2   Recommendations: Synthesis Report

Recommendations highlighted in green are deemed to be a priority when factoring in stakeholder feedback, likely cost, resource and independent observations.

Possible cost indication key: **T** = Should not cost any money but will require staff time   **£** = May require up to £2,000 (of cash and staff time)
££ = May require between £2,000 and £10,000   **£££** = May require >£10,000[4]

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
1	When users visit the CCRA3 webpages and then select to specifically view the Synthesis Report, the report's landing page should contain a basic, non-technical summary of the report which should be based on the Executive Summary of the PDF version and include: A link to the start of the full report web page (and PDF). A short paragraph outlining what the Synthesis Report is and who it is for. The one-sentence key messages (see recommendation 3). A new infographic summarising the key purpose and outcomes of the report and infographics summarising the priority risks (see recommendation 17). The list of ~70 clickable risks as outlined in recommendation 2.	Along with aiding improvements to navigability, provision of non-technical summaries was cited by at least 13 workshop attendees and four interviewees. 27 people also specifically suggested that infographics were / would be a useful summary tool. The recommendation outlines the sort of information that most stakeholders will need to know from the outset; what are the key messages and the risks? Having this information as the front-facing web page and the Executive Summary will make it easier to digest key information.	There are no identical examples, but Vancouver's Climate Change Adaptation Plan pages 4-15 outline how key aspects can be included effectively in an Executive Summary; focus here should be on the style, layout and presentation of the Plan rather than the content (which is more action-focused)	*"All the technical/ method information should be in a secondary report and not part of the main output."* *"Headline messages could also be clearer and punchier for non-tech audiences."*	£
2	Ensure that the Synthesis Report displays all ~70 risks in a similar format to CCRA2 (page 7) but ensure that each risk is also clickable and takes users straight to the relevant evidence report technical chapter web page for exploration of further information.	This will help to signpost users from the Synthesis Report to the relevant technical chapters, something which has been suggested as likely to improve usability and navigability by over half of the interviewees and many workshop attendees. The international examples provide different ways of achieving this.	New South Wales Glasgow CR	*"Link risks to more specific information."*	T

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4   Please note that these costs are very approximate at this stage and will need further quantification and research before any recommendations are taken forward.

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
3	Emphasise the key messages and make each one sentence in length, with an option to expand each one for greater clarity. These should be presented on the Synthesis Report landing page and PDF Executive Summary (see recommendation 1) and on one of the first few pages of the main report body. Alongside this, maintain the 'key messages' downloadable fact sheet but make this one page with a new infographic summarising the key purpose and outcomes of the report.	47 stakeholders cited that they used the key messages but a few of these stated that the messages were too long, especially for those less familiar with the CCRA. Shortening them will also draw people into the rest of the CCRA should they wish to understand more detail. Along with the usefulness of infographics as previously mentioned, nine interviewees especially cited the key messages factsheet as an output they used to obtain CCRA highlights.	Lake Chad USA Afghanistan (page 5)	*"Headline messages could also be clearer and punchier for non-tech audiences."*	£
4	Try and maintain the overall length of the report to a maximum of 30 pages in PDF form (and the equivalent length for the web-based version,). One way of achieving this is to not be drawn in to providing too much detail on each risk in this report (such as page 40-41 of the CCRA2 Synthesis Report) and remove the technical chapter summary annexes, and instead provide links to the technical chapter pages via the clickable risks (see recommendation 2) plus better use of links throughout the Report.	Six stakeholders particularly commented on the need to make outputs more succinct, but given that shorter documents are also likely to improve navigability and enable use of the CCRA by more non-technical people, aspects deemed important by two-thirds of interviewees and around 20 workshop attendees, a shorter Synthesis Report could result in many advantages.	Accra Myanmar California Switzerland Note that these examples are all PDF-based, but the principle of succinctness applies to either PDF or web form	*"The sheer volume of information available is a challenge and even if reports are written in a very accessible way, length is a barrier."* *"There needs to be more emphasis on summaries and more succinctness."*	T
5	The Report should include a non-technical one-pager outlining the key risks and messages to key sectors, based on the content of accompanying sector factsheets (see also 5.3, recommendation 6). To also improve the interpretation of the language used, a simple glossary of key terms could be included as an appendix to the Synthesis Report.	One of the key criticisms from stakeholders is that Government representatives or advisors did not know what to do with the information provided in CCRA2; categorisation into key sectors where the information is put together with the assistance of Government departments would make this clearer.	Summaries of risks to sectors: USA (view Executive Summaries) Switzerland CoastAdapt, Australia Vancouver (page 6) and World Bank provide glossary examples	*"You can produce all the information you want but if it's not tailored to different audiences it won't get used."*	££

	Recommendation	Reasoning	Justification Example if exists / Stakeholder comment		Cost
6	There needs to be a better link between the risk assessment's key findings presented in the Synthesis Report and the UK Climate Projections (UKCP18). A high-level overview of projections should be provided alongside the risks along with links for more information (see also 5.3, recommendation 5).	Both projections and risk assessments are crucial to enabling considered adaptation solutions, something which eight stakeholders specifically emphasised. At present, there is some confusion about how all these items fit together so more effort to make this clear should be considered. Most good examples of international climate risk assessments have the projections, risks and adaptation actions in one place.	South Africa Switzerland Boston, USA	"It is important to tie together both the scenarios and risk assessment rather than have them sit separately (i.e. UKCP18 and CCRA)."	T
7	Similarly, a better link should be established between the CCRA and the Government's response to this, including the NAP and the adaptation programmes of the devolved administrations. A simple link to the relevant pages in the introductory sections of the Synthesis Report should be sufficient.		Vancouver's strategy is good at linking to other relevant strategies (e.g. page 16)	"CCRA is used as evidence block, but the important bit is what happens next, i.e. it all needs to be translated to NAP delivery."	T
8	Approximately eight half-page case studies are to be developed as part of the national devolved administration summaries which will be produced upon completion of this report (see also 5.3 recommendation 8). These should be replicated in the Synthesis Report to bring the assessment to life. They should include examples that illustrate the real-life impact (health, financial etc.) of what happens when a risk occurs and what can be done to address this, as well as how to tackle overlapping issues. These case studies should be formed from a robust evidence base and reflect relevant policy that influences the outcomes. Case studies in the Synthesis Report could also include how Government departments and other organisations have used previous CCRAs to create change.	Whilst including the case studies in both the Synthesis Report and the national summaries may seem like an unnecessary duplication, it is assumed that not all stakeholders will read both outputs and given the importance stakeholders have placed on the provision of real-life examples (22 people stated this is of high importance), it seems prudent to do both.	CoastAdapt, Australia New South Wales's sector reports contain small case studies embedded in the main documents	"Case studies that show how organisations have actually used the CCRA3 in practice to spark action."	££

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
9	Ensure that specific policies applicable only to the devolved administrations are reflected upfront in the Synthesis Report as well as other outputs, and what implications these may have on the overall risk assessment. Links to the national summaries should be provided where more detail will be given (see also 5.3, recommendation 9). SWM and partners will be addressing this issue as part of the remaining tasks associated with this project.	There were 29 stakeholders representing the devolved administrations who suggested that relevant devolved administration policy was ignored and therefore the devolved administration summaries were less useful to them than they could have been.	No specific examples, although arguably less relevant in other countries	*"Elements of the NI summary come verbatim from UK summary and the wording of issues may not be fully relevant to NI."*	T
10	Develop a slide pack to accompany the Synthesis Report (similar to CCRA2) that users can download and use to communicate the CCRA3 Evidence Report to a wider audience, that contains no more than ten slides and includes: What it is and who it is for. Summary of all available outputs. The one-sentence key messages (see recommendation 3). All ~70 risks and key variations in risks to each devolved administration. The new summary infographic and priority risk infographics (see recommendations 3 and 17).	Approximately 13 users have commented on how useful these were/could be to help them communicate key issues to others and, therefore, make more people aware of the key findings. Other stakeholders also prepared their own presentations for wider dissemination.	USA Glasgow CR	*"Pre-prepared presentations for stakeholders summarising key points from the report would be hugely helpful."*	T
11	Develop a web-based version of the full Synthesis Report which includes a clickable menu that always remains on the screen enabling quick navigation to each report sub-section. This should be produced alongside a standard PDF which mirrors the content and is available as a download.	This format will markedly improve navigation and user experience but also give the user the choice on whether to use the web (HTML) or PDF versions. Four of the interviewees who had used CCRA2 specifically stated that establishing a web version of the report would improve the usability of CCRA3 and over half of interviewees along with many workshop attendees cited improvements in navigability as important, which this would help to address. The international examples provided show how this can be achieved effectively.	USA Canada	*"Provision of a web-based platform and downloads (rather than just PDFs)."* *"Website option is much more flexible as long as it's well designed"*	££
12	Maintain the colour-coding of risks by chapter (and, therefore, the colour-coding of chapter themes) but consider changing the colours so that they are very different from one another (e.g. at present there are two shades of blue (People and International)).	Six workshop attendees specifically cited colour-coding as a useful way of improving ease of use.	South Africa (select a province here and scroll down to 'hazards').	*"Colour-coordinate topics, risks or other forms of engagement."*	T

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
13	Ensure the PDF version of the Synthesis Report contains better indexing, i.e., the ability to click on the heading of a chapter on the contents page that sends users straight to the relevant section(s) of the report.	As previously stated, further improvements to navigability have been suggested as a top priority; this simple approach will contribute and the two PDF international examples show how simple this can be to achieve.	California Vancouver	*"Tagging and layering of reports e.g. links that take you to right part of document."*	T
14	The Synthesis Report should also include a brief overview of any changes to risk magnitude or type compared to CCRA2, especially those that have become more serious, and clearly indicate any new risks that have been included.	As four stakeholders using CCRA2 outputs specified, users will be keen to understand how much difference there is between the two assessments and the implications this could have for their work. The example from the USA is a good way of representing the changes that may need to be identified.	USA; see last section of the Overview chapter	*"Implement a tool reflecting how risks have changed, e.g. if a risk was allocated 'research priority' can it be changed to 'sustain action?'"*	T
15	'Priorities for further action' should, where possible, provide more clarity on responsibility (e.g. which government department(s) should lead on dealing with the issue) and next steps in addressing the issues.	Four interviewees who had been involved in CCRA2 stated that identifying who should be responsible for these actions could not be found. Users need to know who is responsible for addressing each risk.	Glasgow CR	*"Being able to find the risks and then link them to accountability and responsibility was challenging."*	T
16	Maintain the visual outputs of the current Synthesis Report (charts, graphs etc.) and place greater emphasis on these and whether they apply to the whole UK or specific devolved areas. Use these tools, along with infographics, where they explain findings better than text. Use photographs of recent extreme weather impacts to emphasise the risks and to improve visual engagement (many of these can be sourced by the partnership producing this report) and ensure the embedded case studies (see recommendation 8) also include relevant photos wherever they are available.	Along with the likely benefits of producing a more succinct report as outlined above, 35 people were keen to see the continuation of visual aids produced alongside the report, with special attention paid to infographics. Stakeholders have stated that a visual report will be better received by those who need to use it by 'bringing the findings to life' and making key priorities easier to digest. The three adjacent international examples show how this could be achieved.	Myanmar (PDF) Accra (PDF) California (web)	*"Photographs to illustrate risks would be helpful."*	££
17	Consider revising the 'killer chart' that resides on page 2 of the current Synthesis Report, perhaps replacing with basic infographics that summarise the priority risks and trends. Include these on the landing page/Executive Summary of the report (see recommendation 1).	Five of the interviewees suggested that the chart depicting the top six risks was too broad and not particularly clear, with stakeholders favouring infographics as the primary visual accompaniment, as previously stated.	California Accra (e.g. page 5) Vancouver (e.g. page 12)	*"Bring out priorities more – the 'six risks' felt like a bit of an add-on at the end."*	££

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
18	A visual presentation that shows how the UK will look in the future depending on whether global carbon targets are met and thus what the differences in impacts from the risks could be if temperatures rose by 2 or 4oC would be helpful to demonstrate the urgency of the required response. A general overview of this in the form of a chart or infographic should be included in the Synthesis Report containing an indication on the effect of key risks (see also 5.3, recommendation 17).	Seven people explicitly suggested that this approach would bring to life what the risks mean and what the associated impacts may look like in reality, thus enabling people who perhaps were not clear on how climate change could affect them to understand this better, and indeed how important it is to maintain efforts on reducing greenhouse gas emissions alongside adaptation.	Scotland Carbon Brief	*"Which risks apply more to a 2 degree and 4 degree future, and which may 'run away' after 2100?"*	£££
19	Do not label the 'urgency scoring tables' document as an appendix to the Synthesis Report, as documents labelled 'appendices' are often seen as superfluous and not for audience consumption. Provide a link to the urgency scoring tables PDF below the list of clickable risks in the Synthesis Report for further information on each and, crucially, make clear via stakeholder engagement (see also 5.3, recommendation 7) who this document is for and what it should be used for.	This document has been underused by stakeholders therefore better signposting, labelling and awareness raising of its importance should help improve its use upon the publication of CCRA3.	No directly similar examples but the principles of betting indexing and stakeholder engagement showcased in other examples above	*No comments were received specifically on the urgency scoring table, which in itself suggests a lack of usage.*	T

5.3   Recommendations relating to all/other CCRA3 outputs

Recommendations highlighted in green are deemed priority when factoring in stakeholder feedback, likely cost, resource and independent observations

Possible cost indication key: **T** = Should not cost any money but will require staff time   **£** = May require up to £2,000 (of cash and staff time) |
££ = May require between £2,000 and £10,000   **£££** = May require >£10,000[5]

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
1	For each full technical chapter PDF, consider including the full list of risks at the start of the document and ensure each risk is clickable allowing users to go straight to the relevant section of the chapter that discusses that risk in more detail. A similar approach was taken in the Urgency Scoring tables developed for CCRA2. Ensure that there is a link back to the overall list of risks at the foot of each section containing more detail.	This will make it much easier for users to go straight to their risk of interest and find more information where technical details are required. Incorporating such a mechanism is something which has been suggested as likely to improve usability and navigability by over half of the interviewees and many workshop attendees.	Glasgow CR has used an interactive PDF but a simpler links-based approach could be used to achieve the same result	*"There needs to be a way of clicking on the key risks so that users can go in to find more detail."*	T
2	Create a download matrix which provides users with every output on one web page (including specific outputs for devolved administrations) labelled clearly so users know what is most helpful for them. Include links to all relevant web pages, downloadable PDFs and separate out infographics, images and slideshows to enable these to be downloaded separately. This can replace the current 'CCRA at-a-glance' page. This could be included on the same page as the site navigation webpage (see recommendation 3).	Given the comments on required improvements to navigability, adding one webpage where users can download every output, including PDFs, links to web pages, figures, slides and infographics, would make finding things much easier.	Several examples, but USA is the best laid out	*"Important to be able to download individual chapters and specific figures."*	£

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5   Please note that these costs are very approximate at this stage and will need further quantification and research before any recommendations are taken forward.

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
3	Develop a site navigation web page which enables users to type in / select keywords[6] which acts as a filter, bringing up the key web pages and risks that match the criteria inputted by the user. This could be included on the same page as the download matrix (see recommendation 2).	This would especially help users interested in cross-cutting aspects (such as flooding) find all the relevant outputs where these are discussed in any detail. Eleven stakeholders explicitly mentioned that trying to find cross-cutting risks was a challenge, with flooding being mentioned most often.	California is the closest example where tagging of themes has taken place	*"Allow users to enter a keyword to extract a specific report/ section/ risks relevant to them."*	££
4	Investigate a way of capturing and reflecting risks in different spatial areas in a visual way, i.e. enabling users to be able to ascertain risks relevant to their area via interrogation of a mapping function that displays risks spatially.[7]	This would enable local policy-makers and practitioners to identify which risks are most relevant to them and help to inform more tailored adaptation responses. 25 stakeholders specifically emphasised that they would like to see a map produced showing risks in a more spatial way, along with about a third of those interviewed.	South Africa Australia USA (e.g.) Think Hazard! World Bank	*"I would like CCRA3 to be more placed based, i.e. what are the risks to a specific area? That is very much what's missing at this stage."* *"Spatial mapping tool/data with priority risks by area to base decisions on and drive actual action to enable progress."*	£££

6   CCRA outputs could be 'tagged' and filtered according to a list of terms which could include (non-exhaustive): Health (mental and physical), Disease, Equity, (Socio-)economic, Finance, Business, Biodiversity, Natural capital, Carbon (sequestration and net zero), Rivers, Catchment, Coast, Marine, Rural, Uplands, Lowlands, Urban, City, Land-use, Flooding (surface water and fluvial), Water, Drought, Heat, Wildfire, Sea level rise, Agriculture, Fishing, Forestry, Tourism, Infrastructure, Energy, Transport (highways/roads and rail), Housing, International.

7   This idea has been discussed at the CCRA Customer Group meeting in February 2020 and is unlikely to be taken forward at this stage. This is primarily because not all the data that would be required to produce such an output would be adequately available or granular enough to make a mapping tool such as this useful or accurate. However, it has been recognised as a key area to consider potentially for CCRA4.

	Recommendation	Reasoning	Justification		Cost
			Example if exists	**Stakeholder comment**	
5	The CCRA homepage should set out succinctly and clearly the intended audience of the CCRA Evidence Report and its various outputs. This should include: What the CCRA is (and how it links to the NAP, see 5.2, recommendation 6). Who it is intended for. How it can be used. It should be made clear that any audience can read the outputs to help inform their own work, but clarity on the primary audience should be made given confusion around this issue during the stakeholder engagement process.	One of the key criticisms from stakeholders is that Government representatives or advisors did not know what to do with the information provided in CCRA2; categorisation into sector factsheets where the information is put together with the assistance of Government departments would make this clearer. Recommendation 5 will help people to understand why it has been produced in the way it has been and recommendation 6 will tailor the information to specific sectors, led by government departments.	USA South Africa Myanmar European Climate Risk Typology There are no like-for-like examples showing sector factsheets, but the following countries provide summaries of risks to sectors: USA (view Executive Summaries) Switzerland CoastAdapt, Australia	*"We need to focus more on the primary audience and not try and make it work for everyone."* *"You can produce all the information you want but if it's not tailored to different audiences it won't get used."*	T
6	Produce non-technical factsheets that summarise the key messages, main risks/urgency scores, devolved administrations differentials, policy and international implications of key sectors.[8] These factsheets will draw on the success of the CCRA2 factsheets and be succinct (2-4 pages) and text-light and be focused on visual outputs such as charts and diagrams. Critically, each one will be put together with the support of an individual from the most relevant Government department from each devolved administration through an engagement process (see also 5.2, recommendation 5). SWM and partners will be supporting this activity in the second part of this project.				££

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[8] The key sectors around which the factsheets will be developed at this stage are likely to include agriculture and food, business, energy, health and social care, housing, land use change and forestry, marine environment, telecoms, transport, biodiversity and ecosystems, young people, water and flooding and coastal change. This may change slightly following the publication of this report.

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
7	Targeted dissemination of CCRA3's key findings and risks is paramount and the provision of workshops/events that allow representatives from Government departments and key supporting bodies to come together to learn about these findings and discuss what to do next is arguably the most effective way to generate engagement and encourage action (also see 5.2, recommendation 19). One workshop should be held in each devolved administration to ensure local policy issues can also be discussed; these could be in person or virtual (especially considering the situation regarding Covid-19). SWM and partners will support the running of focus groups in each devolved administration with the primary audience at around the time of the CCRA's launch that will help to address this; these could include: ❯ An overview of the key messages and outputs ❯ Discussions around how to address the priority risks, forming next steps and actions ❯ Presentations on case studies outlining good practice on how to deal with the consequences of such risks ❯ Next steps and link with the NAP (or equivalent).	In our experience, there is no substitute for providing a platform to enable people to talk to each other face to face to get messages across and allow them to discuss them, ask questions and grapple with the information. This was reflected by the international examples of South Africa, Lake Chad and Canada where extensive stakeholder engagement took place during and post-publication: "One on one personal briefings and a launch event (with satellite events) had a huge positive impact within the first six months. Stakeholder engagement is important." Eleven people interviewed for this project also specifically stated that workshops and/or dissemination events were particularly useful to help understand and apply the findings from CCRA2.	Following interviews, developers of the South Africa, Lake Chad and Canada assessments all discussed the effectiveness of extensive stakeholder engagement.	*"The biggest gap and most important role of the CCC is to enable networking across government and senior influence."* *"To hold workshops where CCC present initial thoughts on what's coming up and invite practitioners to give responses to these. A lot more stakeholder input is required."*	££
8	Develop case studies that illustrate the real-life impact (health, financial etc.) of what happens when a risk occurs and what can be done to address this, as well as how to tackle overlapping issues. These case studies should be formed from a robust evidence base and reflect relevant policy that influences the outcomes. These would be best placed in the national devolved administration summaries to be produced as part of this work, but also replicated in the Synthesis Report (see also 5.2, recommendation 8). It is recommended that there are two case studies per devolved administration summary at approximately half a page each, to be developed via identification from stakeholders and the CCRA Customer Group, where resources allow.	Whilst including the case studies in both the Synthesis Report and the national summaries may seem like unnecessary duplication, it is assumed that not all stakeholders will read both outputs and given the importance stakeholders have placed on the provision of real-life examples (22 people stated this is of high importance) it seems prudent to do both.	CoastAdapt, Australia	*"Place-based case studies to personalise and localise issues and to highlight interconnected and systems approach, overlapping issues, urgency and solutions."*	££

	Recommendation	Reasoning	Justification		Cost
			Example if exists	Stakeholder comment	
9	Ensure that the national devolved administration summaries clearly reflect policies and circumstances only applicable to these areas where identified risks may affect/ be affected by them. Include a summary of this in the Synthesis Report (see also 5.2, recommendation 9) and also acknowledge this issue in the technical chapters. SWM and partners will be addressing this issue as part of the remaining tasks associated with this project.	There were 29 stakeholders representing the devolved administrations who suggested that relevant devolved administration policy was ignored and therefore the devolved administration summaries were less useful to them than they could have been.	No specific examples, although arguably less relevant in other countries	*"When I look at the graphs, infographics and other outputs, I am hesitant to use them in presentations as I am not sure if the data is relevant to NI. I only use data directly from the NI summary as I know it is relevant."*	T
10	These devolved administration summaries should include links to the relevant technical chapters enabling users to find out more information about specific risks. These links should be included in the risk summary and urgency scoring rationale tables which should be maintained. SWM and partners will be addressing this issue as part of the remaining tasks associated with this project.	Nine stakeholders specifically mentioned that they found it difficult to link the summary risks for their devolved administration to the relevant section in each technical chapter; better linking would help to bring these outputs together more effectively as well as contribute to overall improvements to navigation, cited by half of the interviewees as very important.		*"The priority aspect would be better linking between the Welsh summary and the Synthesis Report/ Technical Chapters."*	T
11	Investigate establishing a standalone website for the CCRA rather than it being part of the CCC website. This could include its own branding, URL, social media accounts and contact information so that stakeholders can ask questions about CCRA3.	This should offer the greatest flexibility to present the CCRA's findings as are desired (i.e. some of the recommendations listed in this report) but also may help to prevent confusion around who produces the CCRA (i.e. CCC or Defra) and provide an easier way of linking to other key outputs such as UKCP18 and the National Adaptation Programme, which eight stakeholders specifically stated as important. A few members of the CCRA Customer Group and Project Board are keen to see this implemented.	Several examples, such as South Africa, Canada and USA	*"Consider having the report on a separate website that provides more general and high-level background information."*	£££
12	The current CCRA2 homepage is quite clear and a similar approach should be replicated for CCRA3, albeit with a change in some of the headings and tweaks to the site structure. An example showing what this could look like will be developed as part of the Communications Plan, the next stage of this project.	Approximately ten stakeholders specifically stated that it was easy to find outputs due to the website layout, hence there is no need to make wholesale changes. The bigger challenge is with the navigation of the outputs themselves, as reflected in other recommendations.	Three good examples of homepages: USA California Lake Chad	*"Information was easy to get to as the website is clearly laid out."* *"Easy to locate and logical on website."*	£

	Recommendation	Reasoning	Justification		Cost
			Example if exists	**Stakeholder comment**	
13	Produce a non-technical web-based summary of each Evidence Report chapter that outlines the risks and produce an infographic for each chapter highlighting the priority findings/key messages. Ensure this is consistent for each chapter webpage.	As stated alongside recommendation 1 in section 5.2, the provision of non-technical summaries was cited by at least 13 workshop attendees and four interviewees. 27 people also specifically suggested that infographics were / would be a useful summary tool and 47 stakeholders used the CCRA2 key messages, with nine interviewees specifically commenting on the usefulness of the factsheets.	Glasgow CR Switzerland Canada and USA (click on Exec Summary tabs)	*"Provision of infographics for each sector e.g. health, built envt etc."*	£
14	Continue with technical chapter factsheets, but if possible, replicate these with what is on the technical chapter landing webpage (see recommendation 13) by including an infographic and making them text-light.		Climate Fragility Lake Chad Canada's infographics are also effectively factsheets	*"Factsheets, key statistics and summaries all very useful."*	££
15	Consideration should be given to producing two-page non-technical summaries for specific audiences outside Government departments, specifically councils, Local Resilience Forums, Local Enterprise Partnerships and combined authorities, NHS, businesses, land managers and communities. These would also need to reflect the nuances of each devolved administration's structures. Ultimately, CCRA3 could help each of these audiences address the climate emergency and provision of a summary for each key sector that includes the most relevant risks and, where relevant, a method to help them create their own risk assessments would enable them to begin to develop a more local assessment.	31 stakeholders, including about a third of interviewees, specified the importance of ensuring that different audiences are able to access and apply the findings of the CCRA3's Evidence Report outputs. Most of these emphasised the importance of local authorities but other audiences, such as Local Resilience Forums and farmers, were also cited. Climate change urgency is now higher on organisations' agendas and CCRA3 provides the opportunity to act as a framework to help such organisations to develop their own risk assessments and adapt accordingly.	No known examples yet that show summaries to specific organisations; most focus on sectors.	*"We need to involve people with practitioner experience in the creation of the CCRA."* *"We need more, shorter summaries, specifically written for different audience groups (stakeholders, decision makers etc); need to map the audience first and establish what they are interested in."*	£££

	Recommendation	Reasoning	Justification Example if exists	Stakeholder comment	Cost
16	A short web-based summary and/or infographic that outlines the key findings from each research project and, critically, how these findings have influenced CCRA3 should be included on the Research Projects page. This could be something that each research project lead could complete.	Five stakeholders did not feel that they knew about or understood these projects, their significance and whether they should be aware of their findings and, therefore, that a summary would be useful. Completing these using infographics is likely to be best received as 27 people specifically cited them as being a useful communication tool.	Not too many similar examples, but Switzerland does a good job of summarising climate research	*"A one-pager/ graphic of what was found on each research project and then a brief overview on how this fed into the national assessment would be very helpful."*	££
17	A visual, non-technical presentation that shows how the UK will look in the future depending on whether global carbon targets are met and thus what the differences in impacts from the risks could be if temperatures rose by 2 or 4oC would be helpful to demonstrate the urgency of required response. This should be presented in each devolved administration summary and contain an indication on the effect of key risks (see also 5.2, recommendation 18).	Seven people explicitly suggested that this approach would bring to life what the risks mean and what the associated impacts may look like in reality, thus enabling people who perhaps were not clear on how climate change could affect them to understand this better, and indeed how important it is to maintain efforts on reducing greenhouse gas emissions alongside adaptation.	Scotland Carbon Brief	*"Present what the world will look like in x years' time, with links to more detail."*	£££

5.4   Next steps

This report and the associated engagement represents the first part of this project and further work will now take place that will help to move some of the recommendations forward. This includes the following:

> The most immediate next step is the development of a Communications Plan which will be produced as part of the contract for this project and led by sub-contractor Mike Peverill. This will outline how the CCC can address the relevant recommendations listed above as well as other ideas to improve overall accessibility of the CCRA to the primary audience (Government departments and arm's length bodies) within the scope and resource budget available for CCRA3.The next part of this project is to produce summaries of the CCRA3 Evidence Report for the various devolved administrations of the UK (England, Northern Ireland, Scotland and Wales). Some of the recommendations in this report will be addressed directly by this partnership during the completion of these summaries.

> Concurrently, summaries for different types of geography (urban, coastal, marine, rural uplands and rural lowlands) were also due to be completed. However, these may now not take place and will instead be substituted with other activities that directly address some of the recommendations highlighted in this report, on the advice of the CCRA3 Customer Group. This will include:

>> Provision of sector factsheets (recommendation 6)

>> Extra support to develop the CCRA webpages, specifically the filtering of keywords (recommendation 3)

>> Supporting stakeholder engagement (recommendation 7), in particular by running smaller focus groups with the primary audience at around the time of the CCRA3 main launch event.

The other immediate next step, which is not directly part of this project, is the development of the Synthesis Report using the recommendations listed in section 5.2 to help improve its accessibility. The partners involved in this project will help to develop the ideas that are going to be taken forward both as part of the Communications Plan and by providing general advice where it would be useful to do so.

Annex 1: Detailed methodology

This section describes in detail the approach we have taken to provide credible, reliable and evidenced-based advice to the CCC on how best to make the CCRA3 Synthesis Report and its accompanying documentation accessible to its primary audience groups and other stakeholders.

Summary of approaches

The approaches applied in order to provide advice to the CCC on improving accessibility of the CCRA3 Synthesis Report were:

> Engaging with key stakeholders that had used previous CCRAs and the various outputs to obtain their views on what worked well and what could be improved in terms of its accessibility and usability.

> Engaging with key stakeholders to obtain their thoughts and suggestions on tools that could be used to improve the accessibility of CCRA3.

> Researching how climate change risk assessments from elsewhere in the world are presented and how accessible these have proven to be for their key stakeholders.

Definitions of key terms used

> Accessibility: User experience reflecting how easy or challenging the CCRA and its outputs are to find, interpret and use.

> Communications: Methods and tools used to improve the accessibility of the CCRA.

> Stakeholders: These include the primary customer group for the CCRA (UK Government, the devolved administrations and Arm's Length Bodies), as well as key stakeholders more widely (e.g. businesses), CCRA2 authors and CCC staff.

Obtaining stakeholder feedback

According to the CCC, around half of the 400 experts involved in the development of CCRA3 were involved in the production of CCRAs 1 and 2. They range from those who completed chapters/technical reports, to the research project teams to the reviewers. As well as targeting these people, we also contacted many individuals including policy-makers and practitioners from other organisations who have used the findings and outputs from previous CCRAs, including the tools used to improve accessibility. Many of these stakeholders have been involved in both the development of the CCRA and then used it in their own work. Engaging with as many of these individuals as possible was crucial to obtaining a range of views on how easy previous CCRAs were to use and apply, as well as generating ideas about how CCRA3 can do this better.

CCC provided SWM with a list of 254 stakeholders that are involved in some way in the development of CCRA3 and who have some experience of previous CCRAs, for example through developing the technical chapters, involvement in other research projects or members of the CCRA3 Committees or Board. This included:

> 99 individuals working for Government departments or their supporting bodies

> 54 consultant organisations

> 53 academics

> 13 CCC staff (present or former)

> 35 other business or third sector experts

SWM and partners then added to this list and included 74 other individuals who are likely to have used the outputs of CCRAs 1 and 2, or who will be interested in the outputs of CCRA3. These are mainly practitioners and were identified by the collective relationships developed by the partners involved in this project over time. These relationships were formed through relevant events convened by the partnership over the last five years (such as Climate Just training workshops and other adaptation-focused events) and/or bespoke projects that were either led by one of the partners or that one or more of the partners was contributing to (an example can be found here). These 74 practitioners included:

> 38 practitioners from local authorities

> 14 individuals working for Government departments or their supporting bodies

> 9 academics

> 6 NHS staff

> 5 consultant organisations

> 8 other business or third sector experts

In total, there are 328 individuals listed on the database and we provided all of them with the opportunity to engage in one or more of the following ways:

> Attendance at a workshop

> Participating in an interview

> Completing an online survey

There were many more individuals not listed in the database that also participated in one of the workshops and it is estimated that this will have brought the total number of people invited to engage in the accessibility project to approximately 400. Providing a range of options to engage is likely to have opened the door to a higher rate of response and enabled a wider variety of views and perspectives to be captured.

Workshops

One of the reasons that this research is being carried out by SWM and a range of partners is that, combined, we cover the breadth of the UK. We wanted to hear the views of people from across the country to determine whether there were any geographical patterns to the feedback and to emphasise that the CCRA should apply equally to the whole country. Therefore, we ran one workshop in England (11 February 2020), Northern Ireland (2 December 2019), Scotland (31 January 2020) and Wales (26 November 2019).

The other positive aspect of this was that each workshop 'piggy-backed' onto existing events that were relevant to the CCRA where appropriate stakeholders would have been in attendance anyway (i.e. many people included on the list above and other climate adaptation practitioners or policy-makers). These were:

> England: CCRA3 Stakeholder Engagement day (London)
> Northern Ireland: CCC-led CCRA3 Stakeholder workshop (Belfast)
> Scotland: Flood Risk Management Conference 2020 (Glasgow City Region)
> Wales: CCC-led CCRA3 Stakeholder workshop (Cardiff)

Each workshop was facilitated by one of the partners (SWM in England and Wales, Sniffer in Scotland and Northern Ireland Environment Link in Northern Ireland) and the bulk of the time available allowed for attendees to express their views and ideas on the accessibility of previous CCRAs and CCRA3. The way each workshop ran was as follows:

> SWM or the lead partner presented on the overall project purpose and approach.

> Delegates were then split into two groups; those that had used previous CCRAs and those that had not. For the former, questions that were asked of delegates were:
>> How easy was it was to locate, interpret and apply information from CCRA2?
>> How useful were the forms of communication in helping you to locate, interpret and apply information from CCRA2? E.g. graphs, infographics, fact sheets, animations, videos etc.
>> Was there anything missing from CCRA2 that would have helped with your own work?

> For the latter, questions that were asked of delegates were:
>> What information will you need from CCRA3?
>> How would you like this information to be presented so that you feel confident in being able to locate, interpret and apply it?

> Delegates were asked to write succinct points and ideas on post-it notes and briefly feedback one key point to the whole room during plenary.

The above process took place at all workshops, and there were also two presentations given at the England workshop from Defra and Public Health England who provided an overview of how these Government departments used CCRA2 and their views on accessibility.

The thoughts gleaned from delegates captured on the post-it notes were then consolidated into a spreadsheet which enabled prioritisation of key points raised most frequently and those deemed most important.

Interview and survey

All 328 individuals listed on the master stakeholder database were invited to undertake an interview or complete an online survey. Again, by providing both options this enabled a greater range of feedback. Interviews were encouraged as, based on our experience, people are generally more expressive and go into more detail on subjects that they have knowledge about when compared to filling in a survey. Therefore, only receiving six responses to the survey was not a concern as it was very much seen as a secondary way to engage. However, equally it is recognised that completing surveys is usually quicker and not all stakeholders will have the time to participate in an interview, hence why we offered both options. For both the interview and survey, the following questions were asked:

Fact-finding questions

1. **Respondent's details (optional)**
   > Name
   > Job Title
   > Organisation
   > Email address
   > Location (e.g. city, local authority or county)

2. **Were you involved in the development of CCRA1 or CCRA2 in any capacity? If so, which CCRA and how?**

3. **Are you involved in the development of CCRA3 in any capacity? If so, how?**

4. **Please describe for what purpose you have used CCRA1 or CCRA2 and whether its messages and outputs influenced decision-making within your role/organisation. If so, how?**

5. **Which of the following outputs from CCRA2 did you use?**
   > Synthesis Report
   > Technical Chapters (please specify which)
   > National summaries (please specify which)
   > Research projects (please specify which)
   > Videos, at-a-glance summary, infographics or animations
   > Other (please specify)

6. **What did you use CCRA1 or CCRA2 for?**
   > Informing policy development / action planning
   > Communicating with and engaging people on climate risks
   > Further research and analysis

Opinion gathering questions about usability of CCRA2 and suggestions for CCRA3

7. If you used CCRA2, how easy or challenging was it to locate the information that you were looking for, and why?

8. If you used CCRA2, how easy or challenging was it to interpret the information that you needed to use, and why?

9. If you used CCRA2, how easy or challenging was it to apply the information you required to your role or objectives, and why?

10. How useful were the following forms of communication and engagement in helping you to locate, interpret and apply the required information from CCRA2?
    - Full report(s):
        - Synthesis Report
        - Technical Chapters
        - Research reports
    - Diagrams
    - Risk and opportunity descriptions
    - Fact sheets
    - Animations
    - Videos
    - Infographics
    - Dissemination events/workshops
    - Other (please specify) [1 - very useful, 2 - somewhat useful, 3 - not useful, 4 - made engaging with the CCRA2 more difficult, 5 - n/a] plus box for additional comments

11. Did you use any of the outputs or communications from CCRA2 to communicate findings to other policymakers or practitioners in your organisation or elsewhere? If yes, which ones did you use and how helpful were they and why?

12. Was there anything missing from CCRA2 that would have helped with your own work?

13. Could CCRA3 be better presented than CCRA2 in order to help you find, interpret and apply the information you need? If so, how? Please give as much detail as possible.

14. If you had one wish for CCRA3 in terms of making it user-friendly and suitable for your needs, or the needs of people you interact with, what would that be?

15. A number of summaries will be produced for CCRA3 including for the devolved administrations in Northern Ireland, Scotland and Wales. What additional summaries would you find most helpful? For example, sub-national (South West, North East, etc.), thematic (cities, coastal, upland/lowland, etc.) or sectoral (flooding, transport, public health, etc.)

Final questions

16. **Do you have any suggestions of how to improve the searchability and navigation of larger-sized reports (e.g. the Evidence Report which stretched to 2000 pages) so that you can find the information you need quickly?**

17. **Are you aware of any examples of climate risk assessments from outside the UK that, in your opinion, communicate the risks well? For what reasons is this an example of good practice?**

18. **Would you be willing to take part in a short follow-up telephone interview if needed and if so, what is the best number to call?**

On some occasions, an individual completed the survey then asked to be interviewed, so in these cases a separate set of follow-up questions were devised tailored to the individual which asked for further clarity, depth or examples related to aspects of their interview response.

In total:
> 235 individuals attended the workshops
> 27 individuals were interviewed
> 6 individuals completed the survey

There is a little overlap as some people engaged in more than one way, but this shows that a significant number and range of people in total were able to provide their views and experience of the accessibility of CCRA2 and share their ideas for improvements and suggestions for CCRA3. A list of organisations that engaged via either attendance at a workshop, completing the survey or being interviewed is shown below (note that this does not include individuals who attended the Scotland workshop as there is no registration list available).

Public sector		
Belfast City Council	Forestry Commission	Royal Society of Ulster Architects
Bristol City Council	Health Northern Ireland	Scottish Environment Protection Agency
Cardiff University	Highways England	Scottish Government
CEFAS	London School of Economics	Scottish Public Health Network
Ceredignon Council	London School of Hygiene & Tropical Medicine	Torfaen Council
Chartered Institute of Environmental Health	Marine Scotland	University College London
Committee on Climate Change	Ministry of Defence	University of Bath
Consumer Council for Water	Ministry of Housing, Communities and Local Government	University of Birmingham
DAERA	Ministry of Justice	University of Edinburgh
DAERA-CAFRE	Natural England	University of Exeter
Defra	Natural Resources Wales	University of Manchester
Department for Business, Energy and Industrial Strategy	NHS Scotland	University of Newcastle
Department for Education	NHS Wales	University of Oxford
Department for Transport	Northern Ireland Housing Executive	Welsh Government
Derry City & Strabane District Council	Public Health England	
Environment Agency	Queens University Belfast	
Private sector		
ADAS	Mott MacDonald	Thames Water
AECOM	Network Rail	Transport for Wales
Anglian Water	NTL World	Trioss
ARUP	Paul Watkiss Associates	United Utilities
BBK	Sayers and Partners	Wales and West Utilities
EAP	Scotch Whiskey Association	Welsh Water
HR Wallingford	Scotch Whiskey Research Institute	WSP
JBA Consulting	Scottish Power	Yorkshire Water
Met Office	Southern Water	
Third sector		
Acclimatise	Historic Environment Scotland	Pembrokeshire Coastal Forum
Ancient Monuments Society	IEMA	RSPB
British Geological Survey	London Climate Change Partnership	Sniffer
Climate NI	National Trust	Sustainability West Midlands
Community Energy Wales	NatureScot	Sustrans
Energy UK	Northern Ireland Environment Link	Welsh Wildlife
Historic England		

A full list of stakeholder ideas and responses elicited by the various forms of engagement is available upon request.

Researching good practice examples from other countries

Researching how countries in other parts of the world have developed climate change risk assessments and which methods of communication have been used to improve accessibility was a useful way of supplementing stakeholder suggestions to generate a clearer picture about what works well. In order to do this, firstly we undertook research into countries that had produced climate risk assessments by:

> Searching for '[COUNTRY] Climate Change Risk Assessment' in Google. We included countries of either ≥40,000km2 in area or that have a population of ≥1 million at the last official count. In some cases, searching for a country also brought up risk assessments in cities/provinces within that country, for example Vancouver in Canada and New South Wales in Australia, so we also included these where relevant.

> Asking stakeholders to provide any additional examples as part of the interview and survey (see Q17 above), which were then also researched.

> Perusing websites that help to signpost to climate risk assessments, such as ClimateADAPT, C40 and ICLEI.

> Obtaining suggestions from the other sub-contractors involved in this project.

Upon finding international climate risk assessments, we then prioritised those for further analysis depending on:

> Whether there had been an effort to communicate the risk assessment findings to different audiences, areas or sectors.

> Whether there was a variation of styles of engagement, and a variety of channels, that were used that help to summarise the risks and make assessments more accessible for people to use and interpret.

For those assessments that we looked at for further analysis, six aspects were agreed with CCC for consideration in our research. These were:

> Innovative/unusual methods of communication, with evidence of success, which were used to outline the risks to a specific sector/area.

> Where there was an effort to make documents with a large number of pages more navigable and searchable for specific themes and topics.

> Where a 'key chart' was used to summarise the risk assessment's key findings or an interactive map was used to summarise risks in specific locations/to specific themes.

> An evaluation exercise took place post-publication of the risk assessment which provided forms of quantitative or qualitative feedback and where methods used to communicate the assessment were received positively by stakeholders.

> There is evidence that the methods used to communicate the risk assessment were used by policy-makers and practitioners to help an area/sector successfully adapt to the likely consequences of the identified risks.

> Which of the above examples reflecting good accessibility can be best applied to the UK CCRA3 and why (e.g. similar geography, realistic communications tools used within budget and limited resources, similar stakeholders etc.)?

Regarding points 4 and 5, these aspects were usually quite difficult to glean purely by looking at the risk assessment and associated communications tools. Finding evidence, even anecdotal, was difficult as often the organisation(s) commissioned to develop the risk assessment had no funding or remit to determine its impact with stakeholders, or the assessment was very new and such feedback had not yet been received. However, in all cases we followed up with a listed contact to try and arrange an interview with them to determine if they could share any examples where the risk assessments had had a tangible, positive impact on their Government, policy-makers, practitioners, researchers or anybody else. In total, five people responded and interviews were subsequently undertaken.

In total, 25 examples from other countries were analysed in detail and a commentary on the six aspects listed above included in a spreadsheet, along with a link to the resource and an indication of the types of communication used to further accessibility (such as infographics, summaries, videos etc.). The table below shows the areas of the world included in the analysis:

Country-level risk assessments ↓	Smaller area-level risk assessments ↓
Australia (risk assmt. website)	Accra, Ghana
Australia (CoastAdapt website)	Boston, USA
Canada (Changing Climate Report)	California, USA
Canada (Top Climate Change Risks)	Glasgow City Region, Scotland, UK
Estonia	New South Wales, Australia
Germany	Vancouver, Canada
Japan	**Risk assessments covering multiple areas ↓**
Myanmar	Carbon Brief 1.5 and 2 degree scenario interactive chart *Global*
Scotland, UK	Climate Fragility Risk Assessments *Afghanistan, Ethiopia, North Africa, Pacific Islands, South Asia*
South Africa	Climate Links: Climate Risk Profiles *Several less economically developed countries*
Switzerland	European Climate Risk Typology *Europe*
USA	Shoring Up Stability *Lake Chad and surrounding countries, Africa*
	Think Hazard! *Global*
	World Bank Climate Change Knowledge Portal *Global*

The full commentary outlining how each of these examples fit the criteria, along with a hyperlink to each source, is available upon request.

Limitations of the methodology and lessons learnt from our approach are detailed in the main report, section 2.3.

-END-