

CCC Insights Briefing 7

Assessing progress in preparing for climate change in the UK

The CCC regularly provides an independent assessment on progress in preparing for climate change in England.

Adaptation refers to actions that help increase capacity, or reduce the vulnerability and exposure of society and the natural environment to the impacts associated with climate change. It can also include actions to take advantage of new opportunities that climate change may bring. Adaptation is distinct from actions to reduce greenhouse gas emissions (known as mitigation). These reduce the future levels of 'hazard' by reducing the level of global temperature rise and broader climate change that will occur.

The UK Climate Change Act sets out a process for regularly identifying the climate risks and opportunities facing the UK, plus a requirement on Government to bring forward a policy programme to address the risks highlighted. The Act also requires the Climate Change Committee (CCC), the independent advisory body established under the Act to regularly provide independent assessments of progress in adapting to climate change in England.

The CCC monitor progress by assessing whether plans are in place or being developed to address the challenges identified by the UK's climate change risk assessment, and by assessing how far current and planned actions will reduce exposure and vulnerability to those risks or to take advantage of opportunities.

This briefing discusses the role of adaptation in the UK's Climate Change Act, the CCC's approach to monitoring progress in adapting to climate change and provides insights from its first twelve years of experience of measuring adaptation.

This briefing is structured in four sections:

- Adaptation within the UK Climate Change Act
- The CCC's Adaptation Committee
- Monitoring progress on adaptation
- Challenges in assessing progress in adaptation

This briefing is one of a series on the workings of the UK Climate Change Act and the Climate Change Committee (CCC).

Box 1: CCC 'Insights' Briefings

This briefing is part of a series of eight that document the work of the UK Climate Change Committee (CCC) under the Climate Change Act. The CCC is the UK's independent advisory body on climate change mitigation and adaptation tasked with providing regular advice to Government on emissions targets and adapting to a changing climate. The CCC publishes annual assessments of progress towards meeting these targets, biennial assessments of progress in adapting to climate change, and supporting analyses on key emerging issues. These briefings are intended as a practical guide to give insights on the CCC's work and learning over the twelve years since its foundation in 2008.

The briefings in this series are:

- UK Climate Change Act
- The Climate Change Committee
- The UK's Net Zero target
- Advising on the level of the UK's carbon budgets
- Monitoring progress in reducing the UK's greenhouse gas emissions
- Conducting a climate change risk assessment
- Monitoring progress on adapting to climate change in the UK
- Past Climate Change Committee reports

1. Adaptation within the UK Climate Change Act

The CCC's advice is given within a wider framework on climate adaptation established by the UK Climate Change Act.

The UK Climate Change Act created a framework for reducing greenhouse gas emissions and adapting to a changing climate. There are four elements to the Act's obligations on adaptation:

- **Regular assessment of climate risks and opportunities:** The Act requires a regular five-yearly Climate Change Risk Assessment (CCRA) of the range of climate risks and opportunities facing the UK from current and future climate change. The Government has an obligation to present this to Parliament, after seeking advice from the Climate Change Committee. The Government assessment is informed by a detailed and independent Evidence Report providing a full assessment of the range of risks facing the UK. Currently, the CCC oversees the production of this report for the Government and present it as their advice.
- **A programme of adaptation policies:** The Act creates an obligation for the Government to bring forward a National Adaptation Programme (NAP) to address the risks highlighted in the CCRA. The NAP must be updated after each new CCRA. The NAP is produced by the UK Government and covers England only, with obligations on the Governments and Executives in the UK's devolved administrations to produce equivalent programmes.*
- **Adaptation reporting power:** The Government has the power to direct organisations with critical functions (e.g. utilities, national parks, regulators, infrastructure operators) to produce a report on their organisation's adaptation plans to prepare for and enhance resilience to current and projected climate change.
- **Assessment of progress by an independent advisory body:** The Climate Change Committee is legally required to report every two years to Parliament on progress on adapting to climate change, through the most recent NAP. A separate, dedicated Adaptation Committee and secretariat exists within the CCC to conduct its assessments of adaptation progress and to advise the Government on the CCRA.

Two cycles of risk assessment and National Adaptation Programmes have occurred so far. The first CCRA Evidence Report (2012) was coordinated by the UK Government with the second (2016) and third (2021) being coordinated by the Climate Change Committee. The first National Adaptation Programme was produced by the UK Government in 2013 and progress against it was assessed by the CCC in 2015 and 2017. The second National Adaptation Programme was published in 2018, was assessed by the CCC in 2019 and will be again in 2021.

2. The CCC's Adaptation Committee

The CCC has a Committee of independent experts focused specifically on climate change adaptation, supported by a small full-time secretariat.

The Adaptation Committee of the CCC is a dedicated part of the CCC focusing on adapting to a changing climate, as specified under the Climate Change Act. It is made up of a chairperson and at least five other independent experts serving in their personal capacities. The expertise of the current members spans business,

* Some 'reserved' matters (such as Defence) as covered by the NAP for the whole UK.

infrastructure, the built environment and health, environmental economics, law, and the natural environment.

The current members have backgrounds in industry, academia and private practice. The chair also serves on the Mitigation Committee of the CCC to help align the two parts of the organisation.

The Adaptation Committee is supported by a secretariat of five full-time analysts who conduct in-house research, undertake the analysis and drafting of reports, and project manage external research. The size of the secretariat is significantly smaller than that supporting the CCC's work on mitigation, limiting the scale of in-house analysis that can be conducted in comparison to the mitigation work programme.*

The Adaptation Committee conducts and publishes other research to support its formal statutory requirements. This includes advice and evaluations of the implementation of the Adaptation Reporting Power (which allows the Government to ask key organisations to report on the steps they are taking to prepare for climate change) along with in-depth sector reports (flooding and water availability, the natural environment, health and the economy, coastal change, housing and land use).

3. Monitoring progress on adaptation

The CCC has a duty to report every two years on the progress that the Government is making towards the National Adaptation Plan. Since 2010, the CCC has used an evaluation method based on a two-part framework:

- **Decision-making analysis:** The CCC assesses the extent to which planning for climate change is taking place, including whether climate-sensitive plans and policies are adequately considering the risks and opportunities from climate change.
- **Indicator framework:** The CCC collects and assesses trends in factors contributing to climate risks (hazard, vulnerability and exposure), along with indicators to assess trends in adaptation action, and impacts.

The CCC has indicators on vulnerability, exposure, and to track action.

Relying on impact indicators for assessing adaptation progress is challenging, as it is difficult to distinguish year-to-year variability from long-term trends, and it is also difficult to attribute the changes in impacts to different drivers - for example whether the driver is natural variability, a significant change in hazard, or the result of adaptation actions. In addition, the effects of climate change mitigation and adaptation will interact with other pressures such as population and demographic shifts, economic changes, or land use change. Most of the CCC's analysis therefore focusses on indicators of vulnerability, exposure, and action.

The CCC progress assessment considers whether a good quality plan exists and whether actions are succeeding in managing risk.

Using this framework, the Adaptation Committee asks two questions in relation to over 30 priority sectors affected by climate change, considering both what is in the NAP and other activity underway:

- **Is there a good quality plan?** A good plan will have clearly stated outcomes, have considered the short-term and long-term effects of climate change including how risk or opportunity is likely to increase in future under 2°C and 4°C scenarios, have an effective monitoring and

* This staffing size difference reflects the level of funding allocated from the sponsoring Government departments responsible for mitigation (BEIS) and adaptation (Defra).

evaluation framework and demonstrate clear links between the outcomes and corresponding actions.

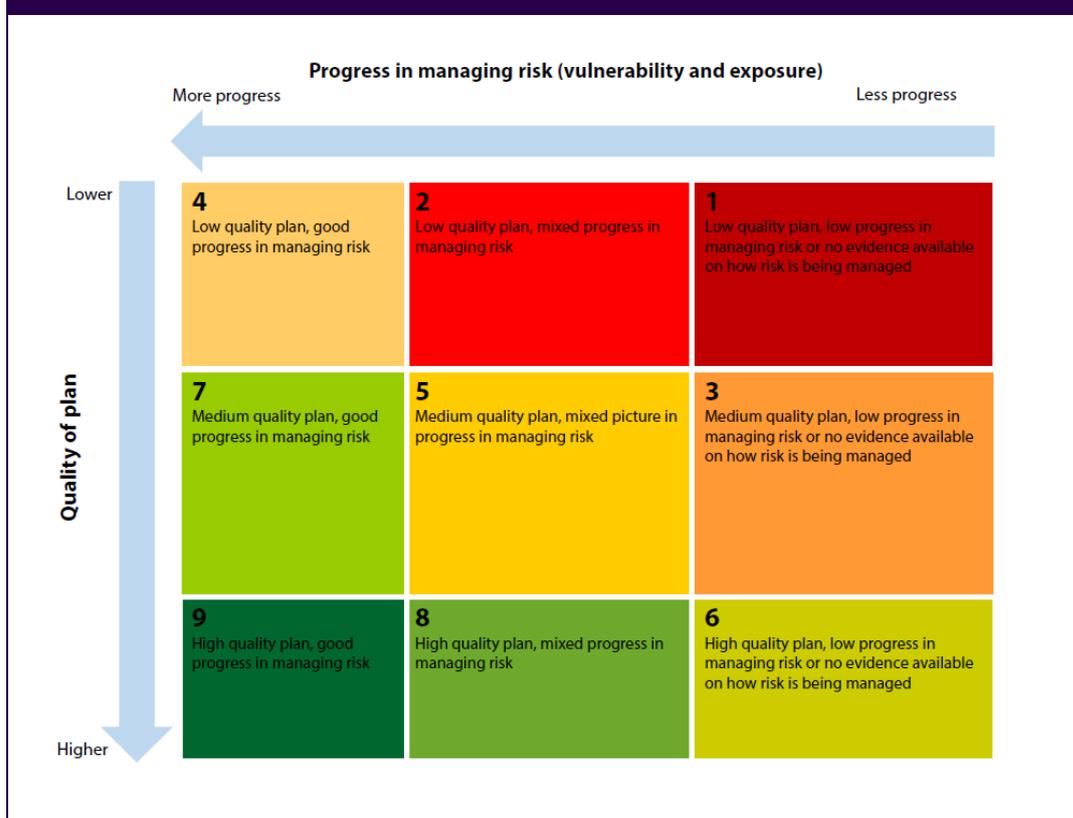
- **Is progress being made in managing risk?** An assessment of actions being implemented in the NAP, alongside the indicator framework can provide an up-to-date picture of how vulnerability and exposure to risk is changing, whether opportunities are being realised, and whether relevant Government goals are on track to be met.

This two-dimensional framework is used to assign a score to the progress currently being made in addressing each identified adaptation priority (Fig. 1), with higher scores denoting better progress.

The CCC uses a similar process to provide advice on adaptation progress to the UK's devolved administrations (Box 2).

Very few climate risks in the UK are currently considered to have good plans in place that are successfully managing risks.

Fig. 1:
Scoring grid for assessing adaptation progress



Box 2:
Providing advice on adaptation to the UK's devolved administrations

In Scotland the Government has a requirement to produce a Scottish Climate Change Adaptation Programme (SCCAP) under the Climate Change (Scotland) Act. Consistent with the UK National Adaptation Programme (NAP), climate change adaptation policy in Scotland runs on a five-year review cycle, with the Act also making provision for an independent assessment of progress towards implementing the programme every two years. The Adaptation Committee assessed the first SCCAP in 2016 and again in 2019. Climate risks in Scotland are informed by dedicated national summaries of the risks facing each part of the UK in the CCRA.

The CCC does not have a remit at present to assess progress in Wales and Northern Ireland, but provides informal advice and shares learning and knowledge on indicators, goal setting and evaluation.

4. Challenges in assessing progress in adaptation

Key challenges include high levels of future uncertainty, the regional variability of impacts and data availability.

The CCC scores the quality of plans. It looks at whether measures are in place to adapt to a 2°C world, and if a 4°C world is also considered.

Monitoring progress on adaptation is made more difficult by the lack of agreed targets for what success looks like.

Measuring progress in adapting to climate change is inherently challenging due to the future uncertainty over the amount of climate change we will experience and the effectiveness of different adaptation options in managing these risks. Different parts of the UK will experience different climate impacts and require different adaptation options. The lack of available quantitative data is a real challenge.

The CCC's approach to assessing adaptation progress looks to address these challenges in several ways:

- **Dealing with future uncertainty.** The CCC uses a framework of scoring the quality of plans and whether actions are being taken that demonstrably reduce either vulnerability or exposure to current and future climate change. In scoring plans, the CCC looks to see whether measures are in place for adaptation to a 2°C world, and whether consideration is being taken of a 4°C scenario and what adaptation is possible in that world, across all sectors.
- **Indicators.** The CCC measures changes in vulnerability, exposure and adaptation action across different sectors. Metrics of attributed impacts (e.g. prevalence of flooding impacts, deaths from overheating or monetary impacts of water shortages as a result of climate change) have not typically formed a key basis of the CCC assessment to date, though efforts are currently being made to produce new indicators of attributed impacts as context for the overall assessment of progress. Where explicit policy goals exist, the Adaptation Committee consider how likely these are to be met in the face of climate change. At the national level, monitoring progress on adaptation is often hampered by a lack of agreed goals or a vision for a resilient UK (in contrast to the clear legislated targets for reducing greenhouse gas emissions).
- **Spatial analysis.** The CCC conducts a national assessment and populates country-wide indicators of change wherever possible. The UK covers a relatively small area geographically and does not have significantly different climatic zones compared to larger countries. However, weather impacts do still vary significantly in different places and while the CCC does not have resource to undertake regionally-specific assessments, regional and sector-specific examples of best practice or case studies of different impacts are used to provide real-world examples in CCC's assessments.

The CCC continues to develop its approach on measuring adaptation. The Adaptation Committee is currently considering how quantified targets can be used to allow better monitoring of adaptation progress and to identify clearer implications for policy, as well as reviewing its indicator framework to prioritise a smaller set of 'key adaptation indicators' from its larger set of over 150.



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