

How well prepared is the UK for climate change?

Executive Summary



Adaptation Sub-Committee
September 2010

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Key messages

The main focus in tackling climate change has rightly been on mitigation, addressing the human causes of climate change by reducing greenhouse gas emissions. But even with strong international action on mitigation, past and present emissions mean that the climate will continue to change and the UK will need to respond (adaptation).¹ Adaptation and mitigation are not alternatives, rather they are complementary.

The Adaptation Sub-Committee (ASC) of the Committee on Climate Change was established under the Climate Change Act 2008 to provide independent advice to the UK Government and the devolved administrations on the impacts of climate change on the UK and assess Government progress in implementing the National Adaptation Programme.

This report provides our first national assessment of progress on preparing for climate change, based primarily on analysis of central government activity. We will update our assessment as further information becomes available, including the Climate Change Risk Assessment and the first tranche of adaptation reports from public bodies and infrastructure providers.

Our first report addresses four questions:

- 1. What steps should the UK be taking to adapt?** Preparing for climate change today will reduce the costs and damages of a changing climate and allow UK businesses, the public sector, the third sector and individuals to take advantage of potential opportunities. Early action will help make the UK better prepared for today's climate and ensure that decisions made today that have long-lasting consequences do not close off options and make it harder to adapt in the future. We identify five adaptation priorities for the UK – land use planning, providing national infrastructure, designing and renovating buildings, managing natural resources, and emergency planning.
- 2. What progress has been made so far?** The UK has started to build capacity for adaptation, with evidence of growing awareness of the risks and appropriate responses, particularly in public sector organisations. This compares favourably with progress in other countries, with some examples of good practice in adaptation decision-making. However, from the evidence reviewed, we conclude that capacity building is not yet systematically translating into tangible action on the ground to reduce the UK's vulnerability to climate change.

¹ In this report "the UK" covers UK-wide issues for reserved matters and England only issues for those matters that are devolved.

- 3. What further action is required?** Action by local authorities, public sector agencies, businesses and individuals will be essential to ensuring that the UK is preparing adequately for a changing climate. We advise that the Government should work to remove barriers and provide stronger signals to enable action by others, including:
- establishing a process for **defining adaptation outcomes**, for example what level of flood risk is acceptable;
 - helping deliver these outcomes by: (i) **promoting greater capability and capacity in priority areas** where progress has been slow, and (ii) ensuring decision-makers have practical tools and information to quantify key climate risks and manage uncertainties;
 - ensuring that the **new delivery arrangements**, for example in land use planning and infrastructure provision, allocate responsibilities for adaptation clearly and provide for sufficient cooperation by organisations at landscape or catchment scale; and
 - considering how **upcoming policy reforms** can support adaptation, for example in the White Papers on water, the natural environment and public health, and in any review of building regulations.
- 4. What will the ASC do to help?** In order to fulfil our statutory duty, we will monitor the achievement of adaptation outcomes and the delivery of adaptation measures by organisations, and use this to assess the nation's preparedness.

Context

The UK's climate is already changing. Temperatures are 1°C higher on average than they were in the 1970s. This warming has been accompanied by more frequent heatwaves, more intense rainfall events and rising sea levels. Insured losses from weather-related events currently cost the UK £1.5 billion each year on average. The 2007 central England summer floods cost the economy over £3 billion. Two thousand people died in the UK as a result of the 2003 heatwave, an event that could become the norm by the end of the century.

By planning ahead and taking timely adaptation action, the UK could halve the costs and damages from moderate amounts of warming. Forward planning may also allow the UK to take advantage of opportunities, for example developing new products and services for a warmer climate.

At the same time, some of the largest effects in the UK will result from climate change elsewhere in the world. The consequences of these impacts will be transmitted through global trade, resource flows, migration and political networks. The UK will have to prepare for these as well.

What steps should the UK be taking now to adapt?

Early action will help ensure that decisions made today do not close off options and make it harder to adapt in the future. Our assessment suggests that the UK should focus early adaptation efforts on decisions: (i) that are **sensitive to present-day climate variability** and therefore where preparing for climate change will provide both immediate and future benefits; and (ii) that have **long-lasting consequences**, including decisions about long-lived assets (for example buildings and infrastructure), decisions that may cause irreversible changes (for example loss of biodiversity), and decisions that may have systemic and far-reaching effects (for example developing in one part of the floodplain with knock-on effects downstream). A challenge in this whole area is making decisions in the face of considerable uncertainty.

In applying these criteria, we have identified **five priority areas** for early action:

1. Taking a strategic approach to **land use planning** – for example to (i) ensure that new buildings and infrastructure are sited in areas that minimise exposure to flood risk, do not increase flood risk to others, and do not create a legacy of flood defence or water supply costs; (ii) manage competing pressures on land – urban, natural and agricultural – in response to a changing climate; and (iii) enhance green space where effective in the design of towns and cities to help manage surface water drainage and cope with rising temperatures and heatwaves.
2. Providing **national infrastructure** (energy, water, transport, waste and communications) – for example to ensure it can cope with rising temperatures; it is resilient to potential increases in certain extreme weather events, such as storms, floods and droughts; and it takes account of changing patterns of consumer demand in areas such as energy and water use, travel and consumption.
3. Designing and renovating **buildings** – for example to ensure they can cope with rising temperatures and floods and minimise water use through appropriate use of construction materials and through better design.
4. Managing **natural resources** sustainably – for example by using water more efficiently; improving and extending ecological networks so that species can adapt and move as the climate changes; and making space for water along rivers and the coast.
5. Effective **emergency planning** – for example by making better use of probabilistic weather forecasts to anticipate extreme weather events more effectively; creating plans that reduce impact on and ensure continuation of care for the most vulnerable groups in society during heatwaves and floods; and developing business continuity plans based on high-quality climate risk information so that businesses can cope better with disruptions to their supply chains during floods and damage to assets from severe weather.

Taking steps in these priority areas will have wider benefits. For example fully-functioning infrastructure, including secure water supplies, and well-designed hospitals and care facilities, are all key to promoting human health and well-being.

What progress has been made so far?

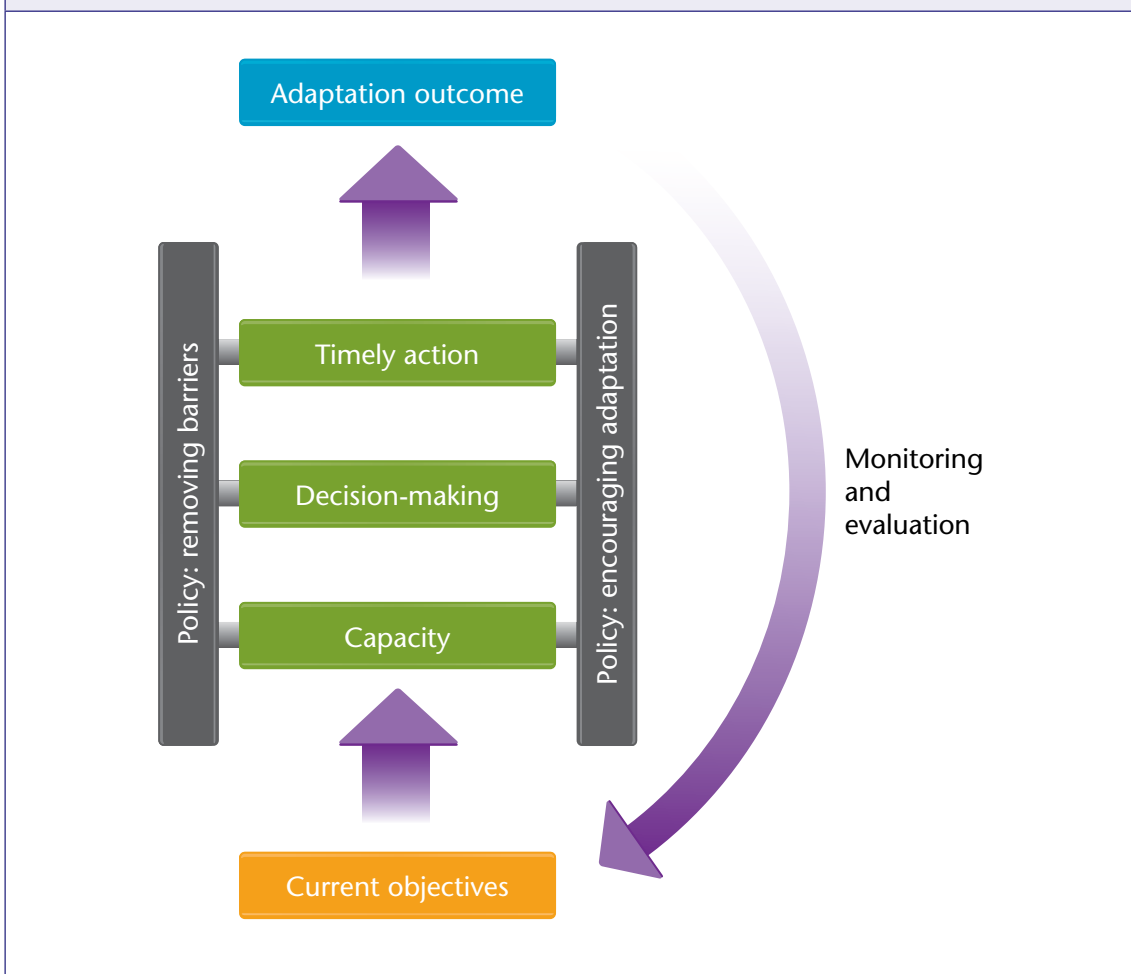
We have created a framework to monitor and evaluate progress in the UK on preparing for climate change (see Box ES.1) and applied it to the Government Departmental Adaptation Plans. We find that:

- **The UK has started to build capacity in adaptation, with evidence of growing awareness, particularly in public sector organisations.**
 - The Government has taken steps to provide information and raise awareness of the issue through the UK Climate Projections (2009) and UK Climate Impacts Programme, and has established an enabling policy framework through the Climate Change Act 2008.
 - Many organisations are on the first rung (capacity building) of the preparedness ladder. Key sectors now have in place guidance and processes on adaptation.
 - We find examples of good practice with some organisations on the second rung, considering their sensitivity to current climate variability and using climate projections in their decision-making, for example through the planning of water supplies by water companies and Environment Agency management of flood risk.
- **However, from the evidence reviewed, we conclude that capacity building is not yet systematically translating into tangible action on the ground. We identify some key barriers to action that will not be overcome by capacity building alone:**
 - In some cases, inadequate or insufficiently accurate climate risk information is preventing organisations from building a business case for adaptation, for example on surface water flooding risks. While we do not see this as a reason for delaying action, it is important to support the development of better climate information.
 - Market and policy barriers may be preventing businesses and individuals from taking up sensible low-regrets actions that will increase their resilience to climate today, for example sustainable drainage, water efficiency and property-level flood protection.
 - In many policy areas, adaptation is name-checked. However in practice it is not given sufficient weight in comparison with other shorter-term priorities, for example in land use planning and some parts of national and local infrastructure.
 - Some policy areas do not yet explicitly consider the risks from climate change, including aspects of building regulations.

Box ES.1: The three components of the ASC monitoring framework

- Desired adaptation outcomes** – the top tier represents the results of actions that reduce the costs and damages of climate change and enhance any potential opportunities, for example less damage from flooding or fewer heat-related deaths.

Decision-makers should monitor and evaluate whether the measures are delivering the desired adaptation outcome and, where they are not, assess if alternative measures are required or if the **current objectives** are still appropriate under a changing climate.
- Delivery of outcomes** – the rungs of the ladder illustrate increasing levels of adaptation activity by public sector organisations, businesses and individuals to make the UK better prepared. The first rung is raising awareness of adaptation and building capacity, the second rung is considering climate impacts in a structured way in decision making, and the third rung is taking concrete actions that directly reduce risk. In essence, the aim is to move up the ladder from capacity building to making the right decisions and finally to timely action.
- Policy to enable delivery** – wider government policy will determine to what extent public sector organisations, businesses and individuals move up the ladder and take action to adapt. We need to understand what barriers to action exist and what can be done to overcome them, including removing barriers, providing incentives, and helping the most vulnerable.



ASC's advice – what further action is required?

Action by local authorities, public sector agencies, businesses and individuals will be essential to ensuring that the UK is preparing adequately for a changing climate.

- Local authorities should focus efforts on moving up the ladder to increase their resilience to current and future climate. They can do this by building an understanding of their vulnerability to current and future climate and embedding adaptation into their risk management functions.
- Businesses should take climate change into account for long-lasting decisions and plans to reduce operating costs in the longer-term and professional bodies should do the same in the setting of relevant standards and specifications. The Adaptation Reporting Power will be an important mechanism for encouraging and promoting structured decision-making by key delivery bodies over the next few years.

The Government has a critical role in making the market work for adaptation and enabling organisations to move up the adaptation ladder. We advise that the Government, in developing the UK's first National Adaptation Programme, should take steps to remove barriers and provide stronger signals to enable action, including:

- **Establishing a process for defining adaptation outcomes and acceptable levels of risk for the UK.** Once outcomes are defined, decision-makers should evaluate the effectiveness of policy in achieving these outcomes.
- **Consolidate initial progress by (i) promoting greater capacity and capability in priority areas** where progress has been slow, including local authorities, land use planners, the construction industry, and infrastructure managers, and **(ii) ensuring decision-makers have practical tools and information** to quantify key climate risks and manage uncertainties in order to help them build a business case for adaptation.
- **Ensure there is clear responsibility for adaptation allocated under the new delivery arrangements and mechanisms to ensure cooperation between delivery bodies.**
This will be particularly important in:
 - **land use planning** – the Government should consider how the new planning regime, including the National Planning Policy Framework, can ensure sufficient cooperation of adaptation at the landscape scale, for example across a catchment area or along a stretch of coastline. The proposed duty to cooperate between local planning authorities will be an important lever;
 - **providing national infrastructure** – the Government should consider how the new national consenting regime will transparently account for adaptation and manage the systemic risks of infrastructure failure; and
 - **emergency planning** – the Government should consider whether local authorities and other government agencies responsible for emergency planning are collectively accounting for climate risks as part of their duty of competence and leadership roles.

- **Consider how its current programme of policy reforms can enable adaptation, including:**
 - **designing and renovating buildings** – as part of any review of building regulations, the Government should consider whether amendments are required to address performance of buildings in hotter weather, alongside wider actions in the built environment to promote upgrading of the current stock; and
 - **managing natural resources** – the Government should consider how to drive forward water efficiency in the upcoming Water White Paper and review whether delivery arrangements for biodiversity are sufficiently robust to cope with climate change in the upcoming Natural Environment White Paper.

Next steps for the ASC

In order to fulfil our statutory duty, we will monitor the achievement of adaptation outcomes and the delivery of adaptation measures by organisations, and assess the nation's preparedness. Key tasks will include:

- exploring approaches to measuring changes in current climate vulnerability to monitor how the UK's vulnerability is changing over time;
- analysing progress in capacity building and decision-making in priority areas, using evidence from application of the Treasury Green Book supplementary guidance, the Adaptation Reporting Power reports, the land use planning system and elsewhere; and
- assessing approaches to identifying low-regrets actions that we would expect to see coming forward in the near future.

In 2011, we will provide a further assessment of preparedness against this more detailed monitoring framework, together with formal advice on the Climate Change Risk Assessment, as required in the Climate Change Act 2008.

