



HM Government

Government response to the Committee on Climate Change

2017 Report to Parliament – Progress in preparing for climate change

October 2017



Government response to the Committee on Climate Change

2017 Report to Parliament –
Progress in preparing for climate change

October 2017

Presented to Parliament
pursuant to Section 37 of
the Climate Change Act 2008



© Crown copyright 2017

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available at www.gov.uk/government/publications

Any enquiries regarding this publication should be sent to us at ACC.Mailbox@defra.gsi.gov.uk

Print ISBN 978-1-5286-0038-5

CCS0917051660 10/17

Printed on paper containing 75% recycled fibre content minimum

Printed in the UK by the APS Group on behalf of the Controller of Her Majesty's Stationery Office

Contents

Executive Summary	5
Introduction	7
Chapter 1: The National Adaptation Programme	9
Chapter 2: Natural Environment	13
Chapter 3: People and the Built Environment	19
Chapter 4: Infrastructure	29
Chapter 5: Business	32
Chapter 6: Local Government	37
Glossary	41

Executive Summary

The UK's first National Adaptation Programme (NAP) was published by government in 2013 and followed the publication in 2012 of the UK's first Climate Change Risk Assessment (CCRA). The Committee on Climate Change's Adaptation Sub-Committee (ASC) is tasked with reviewing and reporting to Parliament every two years from 2015 on the progress being made in implementing the NAP. The ASC's second review of progress on the NAP was submitted to Parliament in June 2017. The government's response sets out its view on the 28 recommendations in the ASC's progress report. The ASC's assessment will be the last for the 2013 NAP, which is due to be replaced by a second NAP in 2018 that will address the priority risks in the second CCRA that was published in January 2017.

The NAP published in 2013 was the first of its kind for the UK and we have come a long way in the time since its creation. We want to learn from this first NAP which has contributed significantly towards embedding consideration of climate impacts and responses across the UK and for which the majority of actions are completed or on track. The ASC recognises the progress that has been made and we welcome the ASC's broad advice on how we might build on this success and improve our approach and strengthen our actions in the second NAP. In developing the new NAP we will work closely with local government, industry, communities and civil society. Building the UK's resilience to climate change continues

to be an economic, social and environmental challenge that cuts across and requires action from every sector of society.

The government is committed to be the first generation to leave the environment in a better state than we inherited it. We are developing an ambitious 25 Year Environment Plan that will chart how we will improve our environment for future generations. Building resilience to climate change, and ensuring that we take advantage of any opportunities that may emerge, will be a key part of this long term vision for the environment and our food and farming sectors.

Introduction

We are already observing changes in the UK climate, with average temperatures having risen by around 1°C since pre-industrial times. We are seeing a trend towards warmer winters and hotter summers, sea levels around our coast are rising by around 3mm a year and there is emerging evidence of changing rainfall patterns. The costs and disruption caused by extreme weather are increasing.

This country is recognised as a world leader in tackling climate change and we remain committed to meeting the UK's targets set under the Climate Change Act 2008. The Climate Change Act 2008 provides a legally binding framework to cut UK greenhouse gas emissions and a framework for building the UK's ability to adapt to a changing climate. In terms of adaptation to climate change, the act requires:

- A UK-wide assessment every five years of the risks and opportunities for the UK arising from climate change. The second *UK Climate Change Risk Assessment (CCRA)* was published in January 2017 and outlines the UK and devolved governments' views on the key climate change risks and opportunities that the UK faces today.
- A programme for adaptation to climate change to address the risks identified in the CCRA so as to deliver resilience to climate change on the ground. The first *National Adaptation Programme (NAP): Making the country resilient to a changing*

climate, covering England and reserved matters, was published in 2013. The next NAP is due to be published in 2018 and must set out the UK government's objectives, proposals and policies for responding to the risks identified in the second CCRA.

- Adaptation reporting by infrastructure sectors and key public bodies, on how they are affected by current and future climate impacts and what they will do to address them. The government is required to publish a strategy for reporting alongside the NAP.

The act also established the Adaptation Sub-Committee (ASC) of the Committee on Climate Change. Its role is to provide independent advice on the preparation of the UK CCRA, to report to Parliament on the UK government's progress in the implementation of the NAP and to provide advice to the devolved governments, as required.

The ASC completed its first statutory assessment of progress on the 2013 NAP in June 2015. The ASC's second assessment of progress was published in June 2017. This is the final assessment of the current NAP which is expected to be replaced in 2018 by the second NAP.

The following chapters in this document contain the government's response to the recommendations made in the ASC's second assessment. It mirrors the structure of the assessment report responding to each recommendation in turn by chapter.

The assessment of the NAP was accompanied by the CCC's annual assessment, as required under the Climate Change Act, on progress towards meeting the statutory carbon budgets and the 2050 target to reduce emissions by at least 80% compared to 1990 levels. It assesses the policy risks around delivering these targets and identifies key priorities for the government to address in its plan for reducing emissions to meet the fourth and fifth carbon budgets. The CCC and ASC assessments and their recommendations were brought together in a summary document. Government has responded separately to the CCC's assessment of carbon budgets and emissions through its Clean Growth Strategy and accompanying act paper.

Our statutory commitments under the Climate Change Act 2008 are unaffected by the decision to leave the EU. Leaving the EU offers a unique opportunity to shape our environment and economy for the benefit of all and we will do this in a way that provides as much support as possible to the environment's natural resilience and adaptability, as well as recognising its potential role in letting us make changes to our infrastructure and ways of working to cope with the impacts of climate change.

Chapter 1: The National Adaptation Programme

1.1 The NAP published in 2013 has encouraged greater consideration of climate impacts and solutions across the UK. The majority of the actions in the NAP are completed or on track and we are pleased the ASC recognises the progress that has been made.

1.2 We are now working across government to prepare the second NAP (due in 2018) that will set out the actions we are taking to manage the priority risks in the second CCRA, published in January 2017.

Response to Recommendations

Recommendation 1: National Adaptation Programme

Recommendation

To ensure that activity and investments have a significant, cost-effective impact on reducing vulnerabilities, the second NAP should:

- set clear priorities for adaptation;
- ensure objectives are outcome-focused, measurable, time-bound and have clear ownership;
- prioritise the core set of policies and actions that will have the biggest impact;
- build on the breadth of community and business engagement in the first NAP; and

- include effective monitoring and evaluation.

Owner: Defra

Timing: next NAP report in 2018

1.3 This reiterates the ASC's recommendations for the overall approach to the next NAP that were made in their first statutory assessment published in June 2015. We broadly agree with the recommendation and the principles outlined will help to determine our approach to the preparation of the next NAP.

1.4 We agree that the next NAP should set clear priorities. Priority areas for action over the next five years have been identified in the second CCRA. These will be the focus as we develop the next NAP.

1.5 We agree that objectives should focus on priority outcomes with "real world" deliverables that need to be achieved to increase the country's preparedness for the impacts of climate change. We also recognise the benefits of effective monitoring and evaluation of the real world impact of adaptation actions.

1.6 We also recognise the benefit of a group of core policies and actions that are clearly owned, can be delivered to set timescales and can have a significant impact on our resilience to climate change. Despite being a government-wide issue, adapting to climate change is not an issue for government to resolve alone. It is essential that we continue

to work in partnership with business, industry, local government and civil society, identifying where UK government action can support their resilience and how they themselves can take adaptation forwards. We will continue to build on the benefits of the first NAP in engaging a wide audience to commit to specific actions and also consider climate impacts more broadly in their ongoing work.

Recommendation 2: National Adaptation Programme

Recommendation

The second NAP should address the important interdependencies between climate change risks and policy responses which fall within and across the remits of different government departments, and national, local and devolved governments, to ensure relevant policies and activity are co-ordinated across the programme.

Owner: Defra

Timing: next NAP report in 2018

1.7 We recognise and agree that there are interactions and interdependencies across the risks we face and the actions taken to address those risks by national, devolved and local governments and the wider public, private and third sectors. The second CCRA has highlighted a number of cross cutting issues and the opportunities for tackling multiple risks together which we will consider in developing the second NAP.

1.8 Adapting to climate change requires cross-government action with different departments leading on the risks in their policy areas. Adaptation needs to be deeply embedded as a consideration in ongoing and developing policies and programmes across all of government. Departments will continue to work together to address the priority risks in the CCRA and to develop coordinated policy responses.

Recommendation 3: National Adaptation Programme

Recommendation

To ensure continuous improvement in the approach to reducing climate change risks, the second NAP should have a strong focus on evidence and evaluation:

- there is the need and opportunity to work through UK Research and Innovation and the individual research councils to develop the evidence base in time to inform the third UK Climate Change Risk Assessment in 2022, making full use of the new UK Climate Projections in 2018;
- more attention needs to be paid to the evaluation of existing policies and approaches in order to learn lessons for future initiatives; and
- the costs and benefits of more ambitious policy options need to be considered and appraised.

Owner: Defra

Timing: next NAP report in 2018

1.9 We agree that there is an ongoing need for evidence and evaluation to inform policy development, risk assessment and the assessment of progress. As we have stated in response to recommendation one we recognise the benefits of effective monitoring and evaluation of the real world impact of adaptation actions. The appraisal of policy options and evaluation of existing policies is central to the ongoing work of government departments. The risks of climate change should be considered by departments in options appraisals whenever relevant, particularly for long-term planning and infrastructure projects, regulatory and planning frameworks, contingency planning and long-term policy frameworks.

1.10 We agree the need to work through and with others, including UK Research and Innovation (UKRI), the research councils and the wider scientific community, in order to develop the evidence base for a robust CCRA3 in 2022. Co-ordination between these groups will be vital, especially given the cross-cutting nature of many of the priority evidence gaps identified in CCRA2. We also recognise the importance of raising awareness on the evidence gaps within the wider scientific community and we have supported the ASC work in this area. We will continue to support the ASC and the Government Office for Science to identify opportunities to address these priority gaps including promoting the use of the new UK Climate Projections (UKCP18) which Defra has commissioned from the Met Office for release in 2018.

Recommendation 4: National Adaptation Programme

Recommendation

The government should explore cost-effective ways to communicate the risks from climate change and the actions that can be taken to reduce vulnerabilities. Priorities include:

- engaging vulnerable groups and communities exposed to specific risks such as higher temperatures, coastal change, and increases in flood risk;
- challenging the relevant professional bodies (such as the Landscape Institute, the Royal Town Planning Institute, and the Institution of Civil Engineers), and trade associations (for example the National Federation of Builders), to increase their level of engagement with members regarding climate change, and to improve the training, guidance and professional accreditation they offer; and

- raising awareness amongst the general public including through community groups and national membership organisations such as the National Trust, the Royal Horticultural Society, and the RSPB.

Owner: Defra

Timing: next NAP report in 2018

1.11 We agree that increasing awareness of risks and the actions that can be taken to manage those risks is important to stimulate action and to reduce vulnerabilities. A range of communication avenues and approaches already exist relating to major risks, such as flooding and overheating, that will be exacerbated by climate change.

1.12 Across a range of specific issues such as responding to heatwaves or reducing water use targeted messaging is closely tied to those individual risks. This enables those affected to relate tangible impacts with practical actions that they can take to adapt and increase their resilience.

1.13 In developing the next NAP we will be exploring how this can be reinforced through, for example, embedding climate change impacts and adaptation more strongly as an inherent consideration within a broader range of awareness raising activities.

1.14 We will continue to work with a wide range of professional bodies to help them identify the risks that they and their members face and to identify actions they can take to increase resilience and reduce vulnerability.

Chapter 2: Natural Environment

2.1 The natural environment is widely valued, both for its own intrinsic worth and also the vital benefits and services it provides. A vibrant and healthy natural environment keeps our air and water clean, stores carbon, underpins the provision of the food we eat, provides significant opportunities for tourism and recreation and significant positive impacts upon our mental and physical health.

2.2 Change is an inherent quality of the natural environment. A rapidly changing climate, however, places unprecedented pressures on our natural environment that threaten the services we take for granted if we do not take adequate action.

2.3 Climate change can benefit UK agriculture through longer growing seasons, increased CO₂ levels for plant growth, and the possibility of growing novel crop varieties. It can also threaten existing UK agricultural capacity and the stability of habitats through reductions in soil productivity, changes in soil moisture levels and periods of both flooding and increased aridity.

2.4 The 2013 NAP captured a range of activities aimed at increasing the resilience of our natural environment and agriculture and to prepare to accommodate the changes that will inevitably happen. The next NAP will build upon this work to increase the resilience of our natural environment, preparing both it and us for the changes that are underway.

2.5 The government will continue work to develop a long-term framework for action on

the environment that makes comprehensive use of data, technology, valuing nature and market mechanisms among the means to achieve our ambitions. This 25 Year Environment Plan will be underpinned by natural capital principles and through this approach we will help everyone understand the true value of our natural assets and how better decisions can be made about their use.

Response to Recommendations

Recommendation 5: Long-term plan for the natural environment

Recommendation

A critical part of the next National Adaptation Programme should be a long-term plan for the natural environment that takes climate change into account, builds on the level of ambition of current EU policies and is consistent with the framework developed by the Natural Capital Committee. In line with the ASC's previous advice, there should be associated targets, actions, and a monitoring and evaluation framework.

Owner: Defra

Timing: By 2019

2.6 The government agrees with this recommendation. We are committed to be the first generation to leave the environment in a better state than we inherited it. That

is why we have made the commitment to produce a comprehensive 25 Year Environment Plan.

2.7 A comprehensive long term plan for the natural environment will build on the ambition of current EU policies to drive environmental improvement, tailored to the needs of our country. It will address all aspects of the environment including: air, water, land, wildlife, marine, waste and resources and how we better manage them. In line with The Natural Capital Committee's (NCC) recommendation, our plan will be underpinned by a natural capital approach. This will facilitate a holistic understanding of the true value of our natural assets and how better decisions can be made about their use.

Recommendation 6: Priority habitats and species

Recommendation

Action should be taken to enhance the condition of priority habitats and the abundance and range of priority species. This action should maintain or extend the level of ambition that was included in Biodiversity 2020. An evaluation should be undertaken of Biodiversity 2020 including the extent to which goals have been met and of the implications for resilience to climate change.

Owner: Defra
Timing: by 2021

2.8 The government agrees that action should be taken to enhance the condition of priority habitats and the abundance and range of priority species, both on protected sites and in the wider countryside; and that we should continue to take action for these habitats and species. Our approach to enhancing these most important habitats and threatened species is set out in *Biodiversity*

2020, our strategy for England's Wildlife and Ecosystem Services and is supplemented by our National Pollinator Strategy. Priority species and habitats are those listed as species and habitats of principal importance under section 41 of the Natural Environment and Rural Communities Act (2006).

2.9 We have two main approaches. First, we are taking action to reduce wildlife's vulnerability to climate change by protecting, managing, restoring and creating priority habitats. We do this primarily through the designation and management of protected sites on land and at sea, through our agri-environment schemes, or by supporting voluntary action. Second, we are taking action to reduce other sources of pressure on our priority species and habitats such as water quality or air quality.

2.10 We are making progress with enhancing important wildlife habitats through the implementation of Biodiversity 2020. For example, the total extent of land and sea protected in England through national and international protected areas increased from 1.2 million to 2.3 million hectares between 1999 and 2016; an increase of 94%, the bulk of which has been through designation at sea with the area of protected marine sites within the 12 nautical mile limit increasing from 295,000 to over 1.3 million hectares between 2011 and 2017.

2.11 On land and in our freshwaters we have continued to take action to put the right management in place on over 1 million hectares of protected sites to restore and maintain their condition or value for wildlife. Across the country there has been an overall increase of around 5,000 hectares of SSSIs achieving 'favourable' condition in the year between April 2016 and April 2017. The past year has seen significant improvement for habitats and wildlife across a number of SSSIs. These include Colony Bog and Bagshot Heath in Surrey; South Dartmoor in

Devon; the New Forest in Hampshire; and Gouthwaite Reservoir in Yorkshire. At Colony Bog and Bagshot Heath for example, more than 700 hectares of heathland and mires are now in favourable condition following improved management and action to reduce the risk of uncontrolled fires, restoring habitat for important bird species such as nightjar, woodlark and Dartford warbler.

2.12 Nonetheless, we acknowledge that our biodiversity indicators paint a mixed picture and that achieving all of the outcomes on species and habitats in full will be challenging. We therefore agree that action needs to be sustained. We will continue to take action through our protected sites policy, agri-environment schemes, Marine Strategy and our partnerships with environmental organisations and other public bodies. We agree that we should evaluate Biodiversity 2020 to inform the priorities for future action. Biodiversity 2020 is, however, an overarching strategy delivered through a range of measures, some of which have their own evaluation programme (for example there is already published information on the outcomes of protected site and agri-environment policy). We have already established a set of indicators that are published annually and show progress with our outcomes. We will nonetheless open discussions with our stakeholders over the coming months, to discuss how existing information can be brought together in an overarching evaluation.

2.13 In determining future action, we will also need to take account of the long-term ambition for biodiversity and wider natural capital that will be set out in our 25 Year Environment Plan, as well as international agreements on post-2020 biodiversity goals and any scientific assessments of the contribution of different actions to our ambitions to secure more resilient ecosystems. We envisage increasingly

integrated approaches to habitat action, for example by developing an England Peatland Strategy with a range of partners which will focus action on upland and lowland peat habitats as well as securing benefits for wildlife, water and the climate.

Recommendation 7: Risks from rising sea temperatures

Recommendation

Research on the risks to the marine food chain and ecosystem from rising sea temperatures, deoxygenation and ocean acidification should be undertaken over the course of the next National Adaptation Programme period, to inform future marine and fisheries policies. The research should assess the extent to which adaptive actions could increase the resilience of marine habitats and species to climate change.

Owner: Defra
Timing: by 2022

2.14 We agree in principle with the ASC's recommendation and several initiatives are complete or under way to better understand the resilience of marine species and habitats to climate change.

2.15 Defra is a member of the G7 Future of the Seas and Oceans Working Group (coordinated by BEIS). This group will identify the additional actions needed to enhance and refine routine ocean observations including ocean acidification. The aim of the G7 Initiative is to increase the scientific knowledge necessary to inform more coordinated and appropriate policies.

2.16 We continue our work to conserve the marine environment off the coast of the UK. Keeping our seas clean, healthy, safe, productive and biologically diverse ensures we can improve the state of our marine environment, whilst supporting sustainable fisheries and growing our marine industries.

- Defra co-funds the Natural Environment Research Council (NERC) Marine Ecosystems Research Programme. This programme is advancing our understanding of the processes that drive the dynamics of marine ecosystems, and in particular marine food webs, and how they are affected by climate change.
- We regularly engage with experts through the Ocean Processes Evidence Group (OPEG) as part of our UK Marine Strategy and the Marine Strategy Framework Directive.
- Defra also funds the £10.5 million UK Shelf Seas Biogeochemistry Programme with NERC. The aim of the programme is to reduce the uncertainty in our understanding of nutrient and carbon cycling within the shelf seas, and of their role in global biogeochemical cycles.
- The UK government is working with the UK seafood industry authority and the UK Marine Climate Change Impacts Partnership to ensure that emerging evidence of climate change impacts reaches commercial stakeholders.
- Defra is initiating research this year on the long-term impacts of climate change on the distribution and abundance of fish stocks.

2.17 We will continue to engage with research councils to investigate the need and availability of funding for future research programmes.

Recommendation 8: Common Fisheries Policy and indicators of sustainable management

Recommendation

Goals and actions to achieve sustainable yields by 2030 should be included in new policies that will replace the Common Fisheries Policy. Indicators of sustainable management should also be reviewed to ensure they take account of changing distributions of fish species due to climate change.

Owner: Defra

Timing: by 2019

2.18 Government is in broad agreement with this recommendation. We are committed to managing fish stocks sustainably and hence achieving Maximum Sustainable Yield as soon as possible. A high proportion of commercially important stocks are already being managed sustainably, but it is important to recognise the complexities of managing mixed fisheries. Fisheries surveys will help show how and where different stocks are adapting and changing their habitat ranges.

2.19 The UK government is working with the UK Seafood Industry Authority and the UK Marine Climate Change Impacts Partnership to ensure that emerging evidence of climate change impacts reaches commercial stakeholders.

2.20 Defra is also initiating research this year on the long-term impacts of climate change on the distribution and abundance of fish stocks.

2.21 The UK government commissioned a SWOT analysis to inform its Operational Programme which sets out how the European Maritime and Fisheries Fund (EMFF) will be spent. Table 9.2 of that

Programme indicates which of the funding articles supported in the UK through EMFF will contribute to climate change objectives, estimating that these articles represent approximately 15% of the EMFF budget, or €36 million over the programme period (2014-2020).

2.22 The approach in the marine environment has been to improve its resilience by reducing pressures from human activities, for example moving towards fishing mortality maximum sustainable yield (FMSY) and setting up marine protected areas. We have already made considerable progress towards sustainable fishing. For 2017, 29 stocks that are of interest to the UK and that are maximum sustainable yield (MSY) assessed will be fished at or below their MSY compared to 25 in 2016. Over the same period the number of stocks with full analytical MSY assessments has also increased, from 35 to 45. The government is committed to make further progress towards MSY as soon as practicably possible and EU Exit provides an opportunity for a better alignment of fishing opportunities to changing distribution in fish stocks.

2.23 The government intends to introduce inshore vessel monitoring for the English under 12 metre fleet as well as under 10 metre vessel catch reporting. This will greatly improve the government's ability to understand fishing patterns, catch levels and stock sustainability in order to effectively manage and protect stocks in the future.

Recommendation 9: Agricultural land management policies

Recommendation

New agricultural land management policies should take account of the need to improve water quality and the condition of habitats and soils, in order to build resilience to climate change. Targets should be set that focus on outcomes, and monitoring undertaken to understand if these targets are being met.

Owner: Defra
Timing: by 2020

2.24 Existing measures to protect habitats, soils and the health of our water environment are delivered as part of the CAP and water legislation and will be part of the exercise to roll forward existing EU legislation into UK law under the European Union (Withdrawal) Bill. This will provide a consistent policy approach whilst we develop our longer term vision for agriculture, land management and the environment.

2.25 Improving the health of our water environment and the condition of habitats and soils, in order to build resilience to climate change, will be a key part of our long term vision for the environment and our food and farming sectors. As we develop the 25 Year Environment Plan and future agriculture and land use policies building resilience and addressing climate change will be important considerations.

Recommendation 10: Sustainable management of soils

Recommendation

To support adaptation efforts, a plan should be put in place to deliver the aspiration for all soils to be managed sustainably by 2030. The plan should include a scheme to monitor uptake of soil conservation measures and specific proposals to reverse the ongoing loss of lowland peat soils in order to provide mitigation and adaptation benefits.

Owner: Defra

Timing: by 2019

2.26 We are exploring soil health issues as we develop our 25 Year Environment Plan and how this could support the implementation of this recommendation. We have also now completed a significant four year soils research programme committed to in 2011 and are currently analysing the results.

2.27 Soils are currently protected through outcome-based cross-compliance soils rules and the UK Forestry Standard's Forests and Soils Guidelines funding is provided to protect soil and water through the Countryside Stewardship scheme.

2.28 The ASC originally made this Recommendation in 2015 and the 2017 report acknowledges the government position that soil protection would be considered as part of the 25 Year Environment Plan. Defra has also begun to develop an England Peatland Strategy, with this work also playing a key part of our long term vision for the environment.

Recommendation 11: Restoring upland blanket bog habitats

Recommendation

A target for restoring all designated upland blanket bog habitats to favourable condition by 2030 should be adopted in order to contribute to both adaptation and mitigation efforts.

Owner: Defra

Timing: by 2018

2.29 Government agrees in principle that, where appropriate, upland blanket bogs should be restored and will set out our plans in the 25 Year Environment Plan and England Peatland Strategy.

2.30 The current target is set at 50% of Sites of Special Scientific Interest in favourable condition by 2020, and 95% by area in favourable or recovering condition.

2.31 We are continuing to take action to improve the condition of our upland blanket bogs and other peat habitats. For example, we have funded an additional £1.3 million of peat restoration via our agencies in 2017, mostly focused on improving the condition of designated sites, and in July 2017 we launched a £10 million grant scheme to restore peatlands in England.

Chapter 3: People and the Built Environment

3.1 The first NAP focused on 5 key areas – flood and coastal erosion risk management, spatial planning, increasing adaptive capacity in the sector, making homes and communities more resilient and longer term implications. Over the last few years there have been a number of major flood events, and flooding has the ability to significantly impact on people’s lives. Additionally, overheating in buildings is becoming a major problem.

3.2 The ASC report recommendations cover diverse areas within the built environment sector. These include capacity in drainage systems, delivery of Sustainable Drainage Systems (SuDS), managing flood risk and reviewing Shoreline Management Plans. There are also recommendations on overheating in some buildings, specifically the introduction of standards or regulations, and risks, and Local Resilience Forums.

3.3 Modification of existing buildings is a vital element in adapting to extreme climate change events, and ensuring longevity. There needs to be recognition that there are long term benefits from investing to save now. New builds need to be designed with safety and comfort of people in mind, and with adaptive qualities.

3.4 The objective of national planning policy is to ensure the planning system helps to deliver sustainable development. As part of this, the National Planning Policy Framework makes clear that planning plays a key role in minimising vulnerability and providing resilience to the impacts of climate change. The Framework, supported by the government’s Planning Practice Guidance, includes policies to protect people and property from flooding, taking the impacts of climate change into account. These policies apply to all sources of flooding, including from surface water. Local Planning Authorities must consider the Framework when preparing their local plan and in taking decisions on planning applications.

Response to Recommendations

Recommendation 12: Capacity in drainage systems

Recommendation

More and better co-ordinated action is needed to manage the lack of capacity within drainage systems to cope with possible increase in the frequency and severity of heavy rainfall. Defra and the National Infrastructure Commission should initiate a comprehensive assessment to quantify the need for investment and other policy actions to manage surface water flood risk, including, but not limited to, retrofitting SuDS. Urgent investments need to be considered by water companies and Ofwat as part of the 2019 price review, and the comprehensive assessment should be in place to inform local planning policy and major investment decisions in the 2024 price review.

Owner: Ofwat

Timeline: 2019 Price Review and 2024 Price Review

3.5 We agree that, as a result of a growing population, urbanisation and climate change, the risks of surface water flooding are increasing.

3.6 In response to this, the government is implementing a commitment in the National Flood Resilience Review to consider the issue of surface water this year.

3.7 This cross-government work is underway and will focus on strengthening the implementation of the current framework including reviewing current practice and looking at the capability and capacity of delivery bodies. Although completion of this work will not be until 2018, we will provide an update on progress by the end of the year.

3.8 Issues around the management of surface water are complex and often involve more than one risk management authority. All authorities, such as Lead Local Flood Authorities (county and unitary authorities) (LLFAs), water companies and highways authorities need the capacity and capability to plan and invest to manage flood risk. Our surface water management work will look at these issues for the range of organisations involved.

3.9 Under the Flood and Water Management Act 2010 LLFAs have responsibility for local flood risk management ensuring flooding from local sources, which includes surface run-off, is identified and managed as part of a local flood risk management strategy. LLFAs have to consult the public and other Risk Management Authorities (RMAs) in their area on the strategy, which would include the local water company. The strategy must for example include an assessment of the local risk, the objectives for managing the risk, and the measures proposed to achieve the objectives. In addition to managing local sources of flood risk effectively LLFAs have to work in partnership with other RMAs and have the flexibility to form informal partnerships. The act also requires RMAs to co-operate and exchange information.

3.10 Water companies, in particular, have duties to provide, maintain and improve a public sewer system to drain effectually their area. The government's strategic policy statement to Ofwat makes it clear that we expect the regulator to challenge water companies to improve planning and investment to meet the wastewater needs of current and future customers, while protecting the environment. This could include promoting, adopting or maintaining SuDS or co-investing in flood risk management as a means of effectually draining an area. Ofwat's draft methodology for the 2019 price review

(PR19) encourages water companies to engage with stakeholders and to ensure that they bring forward well developed, long term wastewater plans to support their business plans.

3.11 The Water UK led 21st Century Drainage Programme, including Defra, the water industry and its stakeholders across the UK, has recently re-focused its work to enhance the long term planning of drainage, by providing companies with new tools to support the use of the Drainage Strategy Framework (DSF) and water company Drainage Strategies as well as developing a new long term planning methodology known as Drainage and Wastewater Management Plans (DWMPs). DWMPs will build on DSFs by creating standardised, long-term and transparent drainage and wastewater plans which provide a clear framework for engagement and consultation with key stakeholders and represent a key step forward for the sector. This set of tools will help inform investment decisions within PR19 and set the foundation for even greater benefits for customers and the environment at the 2024 price review and beyond.

3.12 Within the National Flood Resilience Review there was also a commitment to work together with the Environment Agency (EA), HM Treasury and the National Infrastructure Commission (NIC) to consider long term investment needs and funding options. We are discussing this work as part of the analysis for the first National Infrastructure Assessment, due in 2018.

Recommendation 13: SuDS

Recommendation

Policy is needed urgently to address the outstanding barriers to deliver high quality, effective SuDS in new development that achieve the full range of potential environmental co-benefits. In particular there is a need for:

- More comprehensive and ambitious national standards for SuDS.
- The automatic right to connect new development to the existing sewerage network to be made conditional on the national SuDS standards being met.
- A clear policy on who should maintain and adopt SuDS by default.

Owner: DCLG

Timing: 2020

3.13 The National Planning Policy Framework sets out a clear policy approach to sustainable drainage systems (SuDS) in new development:

- When determining planning applications, local planning authorities should ensure that flood risk is not increased (by any new development) and, in areas at risk of flooding, that priority is given to the use of SuDS in new developments.
- This policy has been strengthened to make clear the expectation that SuDS will be provided in all new major developments, regardless of location, unless demonstrated to be inappropriate.
- Local planning authorities should ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance of SuDS over the lifetime of the development.

- Planning Practice Guidance supporting the application of these policies explains why SuDS are important and sets out the multiple benefits they can provide (mitigating flood risk, improving water quality and supply, amenity and biodiversity).
- The guidance clearly sets out a hierarchy of drainage options, with infiltration into the ground being the most preferable and discharge to a sewer the least preferable.

3.14 The government has been carrying out a review of the effectiveness of the above planning policies on the provision of sustainable drainage in new developments – including the strengthened policy for major developments, introduced in 2015. Findings from this review will be published in due course and will inform the government’s consideration of its policy approach to SuDS in new development.

3.15 The government’s planning practice guidance clearly sets out a hierarchy of sustainable drainage options that favours non-sewer solutions. Particular types of sustainable drainage systems may not be practicable in all locations, so in this context removing the right to connect to an existing sewer does not offer clear benefits over current arrangements. It is likely to add costs and delay to the planning process; and could encourage the deployment of SuDS components in areas where their use is inappropriate.

3.16 The guidance also explains that the local planning authority will want to be satisfied that there are clear arrangements in place for ongoing maintenance of sustainable drainage systems. It is for developers in the first instance to set out future maintenance and adoption arrangements. This provides the flexibility for developers and local planning authorities to identify and agree the most appropriate arrangements for the development and surface water management

in question, in the particular circumstances pertaining.

3.17 Water and sewerage companies (via WaterUK) are developing a UK-wide adoption standard for SuDS, which will provide clarity and certainty for developers on design principles and long term maintenance.

Recommendation 14: Managing flood risk

Recommendation

Defra should develop a long-term strategy to manage flood risks down to tolerable levels in each part of the country (as we first recommended in 2015), so that as Flood Re is withdrawn properties can remain insurable at reasonable cost. This should include:

- Monitoring the impact of the actions adopted following the Bonfield Review to achieve, in five years’ time, an ‘environment where it is standard practice for properties at high risk to be made resilient’.
- Actively communicating risk and possible adaptation actions to households and communities that are expected to remain or become at high flood risk by the 2030s.
- Ensuring that Flood Re incentivises households to take up property-level resilience measures, which insurers should allow to be implemented during post-flood repairs.

Owner: Defra

Timing: 2020

3.18 Government is continuing to invest £2.5 billion to better protect the country from flooding. This includes over 1,500 flood defence schemes, which will better protect more than 300,000 properties by 2021.

3.19 Between 2015 and 2020 we will be spending over £1 billion on the maintenance of flood defence assets. This is a real terms increase in spending compared to the £812 million spent in the previous five years.

3.20 Defra is supporting the work of the Property Level Resilience (PLR) roundtable and its task groups as they start to find ways to implement the recommendation in the 'Bonfield report'. This will go a long way to embed the approach in the professional and commercial sectors and normalise PLR. The roundtable group has set off a number of work-streams and early progress with these is good. One area that we are particularly focusing on is behaviour change/informing the public. This is cross-cutting task and an area where there have been a range of business, voluntary sector and government initiatives over the years. The roundtable offers an opportunity to develop a holistic approach combining the best of these.

3.21 By the time Flood Re transitions, the aim is that the risk will have been sufficiently managed to leave a minimal number of properties at risk.

3.22 EA Area teams regularly engage with communities and local flood action groups both in response to flooding but also to help build resilience within communities. The public and communities can view EA flood maps online to understand their flood risk, sign-up to flood warnings and prepare a flood plan. All of this information is available via gov.uk. The EA promotes an annual flood campaign which encourages action and aims to improve community understanding of flood risk.

3.23 Defra funded a two year Community Pathfinder Project which has informed how some local authorities, EA and the National Flood Forum provide their local flood resilience services and work with communities. The materials and learning

from these Pathfinders have been made available through a resource page on the National Flood Forum website. Government will be conducting a follow up impact study to see whether and how change has been embedded.

3.24 Defra will continue to support the work of the business led PLR Roundtable and its five year vision. The membership includes Flood Re and others from across the professional and technical flood resilience landscape. There will be immediate outputs over the next two to three years. A Property Flood Resilience Code of Practice is being developed for the sector (including Risk Management Authorities, local planning authorities, the construction industry and flood professionals) is due in 2019, but the behaviour change element will take longer.

3.25 Action through insurance may not be the only approach: the high costs of adaptation relative to insurance costs make the figures seem out of proportion to consumers. Focusing on lending and property investment may bear fruit as the costs are more proportionate in comparison to property values. Flood Re is currently developing its evidence base about the best methods it can use to incentivize households.

Recommendation 15: Shoreline Management Plans

Recommendation

The Environment Agency, with Coastal Groups, should review the ambition within, and progress being made in implementing, the Shoreline Management Plans (SMPs), and prepare communities for the coastal adaptation that will need to take place between now and the middle of the century.

Owner: EA

Timing: 2020

3.26 The government agrees with this recommendation. Coastal erosion risk management depends upon local circumstances and is therefore devolved to Local Authorities. Local authorities also have an important role helping people in these areas adapt to local circumstances and to the risk of coastal change. However, the government sets the overall policy and the EA retains a strategic overview to ensure a consistent national approach.

3.27 Coastal Groups (partnerships between coastal local authorities and the EA which will often include other interested parties) are responsible for developing Shoreline Management Plans (SMPs). The EA has strategic oversight for the production and quality control of SMPs.

3.28 SMP delivery is monitored annually, and key achievements and challenges reported to government within the EA's annual report on progress delivering the National FCERM Strategy under section 18 of the Flood and Water Management Act (2010).

3.29 The EA is planning to support Coastal Groups (to undertake a light touch review of all SMPs to ensure they are fit for purpose, deliverable, sustainable and that the recommendations are based upon the latest evidence. The light touch national review is planned for 2018/19 for the 20 English SMPs.

3.30 Some of the Coastal Groups have already begun to review actively and update the SMPs. The NW Regional Flood and Coastal Committee (RFCC) has funded a post to review and improve the existing NW and North Wales SMP using Local-Levy. In the South West, the Coastal Group has also used local authority funds to undertake a very high level review of the Cornwall and Isles of Scilly SMP. East Suffolk, North Norfolk, Waveney and Great Yarmouth Councils have

merged their coastal teams to provide better support to the local SMP.

3.31 The EA has also updated the Terms of Reference of Coastal Groups to reflect SMP maintenance as a key role for the Groups. It is also reviewing online hosting and accessibility of SMPs, with a view to making the information within them more digestible to the general public as well as specialists. Coastal Groups are being asked to produce short summary documents highlighting the key features of their SMP as part of this.

3.32 Defra and the EA are continuing to actively gather evidence to improve policy delivery through their joint research programme to improve future decision making and policy delivery. There are three coastal projects in the 2017/18 programme: a study to test and benchmark existing coastal models; a study into understanding of both short term and longer term response to estuary flood risk to improve flood incident management and adaptation planning for major estuaries; and, a project on coastal squeeze reviewing existing evidence to improve calculations around projected inter-tidal habitat loss.

3.33 Defra is leading work with the LGA Coastal Special Interest Group and EA to enable and encourage local authorities to lead on adaptation to coastal change by working more effectively with people and communities at risk. In 2015 planning guidance was published that had been developed by East Riding of Yorkshire Council, based on the lessons from local authorities taking part in the Defra Coastal pathfinder scheme.¹

¹ <https://lgacoastalsig.com/resources/coastal-guidance-and-manuals/>

Recommendation 16: Overheating standards or regulations

Recommendation

As recommended in our 2015 report, a standard or regulation should be put in place to reduce the risk of overheating in new homes.

Owner: DCLG

Timing: 2020

3.34 In response to the ASC's recommendation in 2015, DCLG is currently undertaking research into overheating in new homes. This is being informed by an expert working group including CIBSE, architects, house-builders, academics and Public Health England and it is investigating evidence of health, energy and productivity impacts of overheating. The outputs of this research will help to determine what further measures should be put in place, if necessary, by 2020.

Recommendation 17: Risks of overheating in existing buildings

Recommendation

Further action should be taken to assess and reduce the risks of overheating in existing buildings, with the priorities being hospitals, schools, care homes and prisons. This could be undertaken for example through the relevant standards agencies such as the Care Quality Commission and Ofsted.

Owner: DH, DfE, MoJ

Timing: 2020

3.35 Government accepts the ASC recommendation on overheating in prisons and will continue its programme to review and to introduce measures to mitigate against the risk of overheating on the existing prison estate.

3.36 The Ministry of Justice (MoJ) designs, constructs and maintains prisons aimed at providing a decent, safe and secure environment for staff and prisoners. The MoJ keeps the design of prisons under continual review, looking to improve its provision by incorporating emerging best practice. This review includes identifying what can be done to mitigate the risks of overheating in prison buildings. MoJ existing prison estate allows control of temperature to guard against overheating by both natural and mechanical means.

3.37 In support of an estate transformation programme expected to deliver up to 10,000 new prisoner places on a new for old basis, MoJ has undertaken research on the design, construction and maintenance of prisons which has included looking at current and future temperature levels in prison buildings.

3.38 The measures include providing upgraded building management systems where ventilation is by mechanical means and installing modern windows which are safe, secure and which offer effective control over temperature ventilation for prison cells.

3.39 The MoJ anticipate that a number of new features will be incorporated into the final designs of new prisons addressing the risk of overheating.

3.40 Lessons from the research will be applied to the maintenance and development of its current buildings.

3.41 Government accepts the recommendation on overheating in hospitals and care homes and the Heatwave Plan for England provides advice on this. The Heatwave Plan also provides advice to medical professionals, the public and what to do to help vulnerable people in settings inside and outside the health and social care system

3.42 Department for Health has funded an independent evaluation of the Heatwave Plan for England which will report in 2018 and findings will be used along with other inputs to determine improvements in the Plan.

3.43 Government also recognises the importance of maintaining appropriate summertime temperatures in schools. Department for Education design standards published in 2013 are aligned with the Chartered Institute of Building Services Engineers (CIBSE) TM52 'The Limits of Thermal Comfort: Avoiding Overheating in European Buildings' and ensure appropriate temperatures in new or rebuilt schools. Ofsted inspections, however, focus on the quality of education and inspectors would not have the necessary building surveying expertise to assess the likely summertime performance of teaching spaces.

Recommendation 18: Local Resilience Forums

Recommendation

The Cabinet Office should, in consultation with Local Resilience Forums:

- Commission an independent review of the planning scenarios underpinning local Risk Registers to ensure i) they are consistent with plausible worst case scenarios, and ii) use the results to help LRFs assess the resources needed to manage these events.
- Strengthen the Emergency Planning Guidance to clarify and test responsibilities for coordination amongst Category 1 and Category 2 responders, as well as between neighbouring LRFs.

Owner: Cabinet Office

Timing: by 2020

3.44 The Cabinet Office supports consistent risk assessment, planning and preparedness activity by providing the local level with guidance on how to approach risk assessment and information about national risks. This approach is an appropriate way of encouraging consideration of the reasonable worst case scenarios that the UK might face whilst preserving local autonomy in planning and preparing according to the local context.

3.45 On that basis, government does not agree with the ASC recommendation of commissioning an independent review of the planning scenarios underpinning Local Risk Registers.

3.46 There is no plan to review Emergency Planning Guidance as the framework set out in existing guidance is deliberately scalable to account for local structures and to incorporate likely changes to current risks.

3.47 Given existing levels of engagement with Local Resilience Forums (LRFs), along with assurance products that further clarify roles and expectations, resilience standards, and validated training and exercising, it is felt that the strengthening of Emergency Planning guidance would be a disproportionate response. Other mechanisms already being deployed are considered appropriate to achieve the objective.

3.48 Local Risk Management Guidance is developed by the Cabinet Office to assist LRFs with risk management, such as by identifying plausible worst case scenarios and conducting contextually-specific local risk assessment. National-level assessments are also made available to LRFs through the National Risk Assessment, which provides comprehensive detail on potential scenarios and their consequences, and encourages consistency in understanding and approach. The Cabinet Office reviews and updates these assessments every two years to take account of the latest evidence and expertise.

3.49 In the majority of cases, LRFs do not assess resource requirements on the basis of specific risks, but instead plan to a series of 'common consequences'. These consist of generic consequences that would arise from many different risks, such as transport disruption or the need to clear rubble and debris. Capability and resource requirements are primarily assessed against these common consequences.

3.50 The common consequences approach allows for more efficient and proportionate allocation of finite resources, as many capabilities will apply to multiple risks. In addition the full scope of potential risks is enormous, and by planning against expected generic consequences we ensure a degree of readiness even for unexpected or unforeseen risks.

3.51 The Civil Contingencies Act (CCA) 2004 provides a framework for responder agencies, as categorised under the Act, to deliver appropriate emergency planning, response and recovery. Responsibilities for coordination within and between LRFs is clearly set out in Emergency Preparedness (practical framework for civil protection taken from the CCA 2004).

3.52 The responsibilities set out in the Emergency Planning Guidance are regularly tested by LRFs and their constituent responder organisations through a schedule of testing and exercising in order to validate capability and provide assurances to government.

Chapter 4: Infrastructure

4.1 Infrastructure operators are vulnerable to a range of climate impacts, as set out in the CCRA and outlined from recent weather events, such as the National Flood Resilience review of events following the storms and floods of 2015-2016, and the Transport Resilience Review following the weather events of 2013-2014.

4.2 A number of different mechanisms are in place to assess and address risks and implications from climate change, from the price review processes overseen by the regulators to the Sector Security Resilience Plans, for which the Cabinet Office provides guidance. The Adaptation Reporting Power (ARP) also plays a role in helping reporting organisations understand and take action to address climate related risks.

Response to Recommendations

Recommendation 19: Adaptation reporting guidance

Recommendation

Defra should review and strengthen its guidance for ARP3 to elicit more comparable data and conclusions about the adaptation of infrastructure. Use of consistent incident reporting and indicators of network resilience will allow performance to be tracked over time. Reporting protocols should be developed in partnership with sector organisations, the Cabinet Office, the National Infrastructure Commission, and the new National Infrastructure Resilience Council.

Owner: Defra

Timing: 2018

4.3 Defra is working with reporting organisations, including from the water, rail, energy and communications sector, on how future adaptation reporting may be carried out, reflecting on the evaluation carried out assessing successes and lessons learnt from previous cycles of reporting. As required by the Climate Change Act, the Secretary of State is required to lay the government's strategy on future reporting under the ARP no later than the next NAP. The government's strategy for future reporting will be subject to a consultation, and we are already working in close collaboration with reporting

organisations on designing approaches for future reporting. As part of this process we will consider what guidance is needed and how it will be made available.

4.4 Aspects of future reporting under the ARP are being developed and will be subject to consultation. As part of this work Defra will consult the Cabinet Office (in consideration of developments of its guidance on 'Sector Security Resilience Plans), the NIC and the National Infrastructure Resilience Council (NIRC).

Recommendation 20: Participation in Adaptation Reporting

Recommendation

Defra should ensure that all major infrastructure operators in the digital and ICT sector take part in the third round of the ARP. This will ensure that the sector has considered risks, and that operators, individually and collectively, have developed risk management plans.

Owner: Defra

Timing: 2019

4.5 In the telecoms sector industry chiefly considers climate change issues within individual companies, but also collectively via the industry led resilience group, the Electronic Communications – Resilience and Response Group. The EC-RRG leads on resilience and the sector's emergency plan. DCMS, as the lead government department for the telecoms sector, facilitates this group. Government works closely with the telecoms sector on resilience as part of the EC-RRG and confirms that industry has extensive risk management plans and processes in place which take account of a wide range of risks – including severe weather and climate change related risks – which are likely to impact on their operations. These strategies are updated regularly and there is regular testing of emergency processes at both individual

company level and collectively as part of EC-RRG.

4.6 The government is developing aspects of reporting for future rounds of the ARP. As part of this the government will consider the range of organisations which should be proposed to take part in view of the risks set out in the 2017 CCRA. EC-RRG is committed to producing regular reports on climate change adaptation in the sector and to ensuring it is embedded in ongoing risk management undertaken by the member companies. Whether this work will continue under the ARP will be subject to public consultation. The data centre trade association (Tech UK) have already voluntarily reported in the second round of Adaptation Reporting. The government will continue discussions with both telecoms and data centre sectors to ascertain involvement in future reporting and will seek to set out the proposed approach to be taken by these sectors in our strategy.

Recommendation 21: Information sharing and cooperation

Recommendation

To assist with the assessment and management of interdependencies the Cabinet Office should review information sharing arrangements between infrastructure operators, as well as between operators and Local Resilience Forums. Further steps may be necessary to ensure that the legal duties within the Civil Contingencies Act are being fulfilled in practice, including the duty for Category 1 and category 2 responders to cooperate and share information.

Owner: Cabinet Office

Timing: 2018

4.7 Government agrees in part with this recommendation.

4.8 Information sharing is a crucial element of civil protection work, encompassing multi agency co-operation.

4.9 Under the Civil Contingencies Act 2004 (CCA) and the Contingency Planning Regulations, Category 1 and 2 responders have a duty to share information with other Category 1 and 2 responders and do so as part of a collaborative working culture, sharing information in real time on a secure web-based information sharing platform: ResilienceDirect.

4.10 Guidance on part 1 of the CCA 2004, its associated regulations and non-statutory arrangements, is available on gov.uk. A specific chapter on 'Formal Information Sharing' (revised 2012) is available to download.

4.11 Some of the work recommended by the ASC in relation to the review of information sharing arrangements is already being addressed during the coming 12 months:

- The Cabinet Office Civil Contingencies Secretariat is actively engaging with the resilience community to set 'Resilience Standards' that can be held up as best practice. One of these standards looks at sharing of information. The recommendation to review information sharing arrangements would be covered by this activity. The Resilience Standards workstream for information sharing will supersede current guidance, published in 2012 (available on gov.uk), taking into account lessons learned from previous incidents and the emergence of new capabilities such as the ResilienceDirect web-portal.

- The recently created lessons learning tool for all responder agencies 'Joint Organisational Learning Online', hosted on ResilienceDirect, enabling responder organisations to securely capture and share lessons and notable practice from all elements of resilience (planning response and recovery).

4.12 The Civil Contingencies act is designed to allow Category 1 and Category 2 responders to determine an appropriate level of information sharing, without becoming too prescriptive. In light of recent major incidents, Cabinet Office will write to Category 1 and Category 2 responders and remind them of the need to share information during planning, exercising, response and recovery.

4.13 Linked into the future publications of the Resilience Standards, the Cabinet Office will highlight best practice and offer engagement through a series of workshops, with assurances in respect of key concerns such as security.

4.14 In addition, the NIRC, set up in response to the National Flood Resilience Review, drives consistent cross-sector information sharing between infrastructure operators on planning for and responding to specific incidents. NIRC aims to ensure lessons are learnt by individual sectors and are widely shared. It also aims to identify areas to strengthen in terms of planning and response processes; and develop cross-sector proposals for industry, regulators and government.

Chapter 5: Business

5.1 The CCRA's have expanded our understanding of the likely impacts on businesses from climate change. There are many examples of good practice from the private sector when it comes to assessing and addressing the challenges from climate change. The responsibility for taking action on climate risks is seen by many private enterprises as sitting within the wider corporate approaches to corporate risk management. Consideration of climate risks and actions needed to address them is therefore within the corporate domain.

Response to Recommendations

Recommendation 22: Disclosure of climate change risks

Recommendation

The government should promote voluntary disclosure of climate change risks by both large and small companies, including the risks in relation to supply chains.

- The investment community should further emphasise the need for meaningful disclosure of how companies assess and manage climate change risks, in line with the recommendations of the Task Force on Climate-related Financial Disclosures.
- The Financial Reporting Council's UK Stewardship Code should ask investors to consider company performance and reporting on adapting to climate change.
- As a form of disclosure, the government should promote corporate natural capital accounting and reporting, as recommended by the Natural Capital Committee.

Owner: Defra/BEIS

Timing: by 2020

5.2 Government agrees all companies, large medium and small, should be encouraged to disclose climate change risks voluntarily. Public disclosure and increased transparency can provide a reputational advantage for organisations which actively manage their climate change risk exposure, and can provide incentives for other organisations to increase their engagement with climate change risks. Transparency increasingly informs investment decisions, drives competition, and gives businesses the opportunity to celebrate and publicise their 'green' action and achievements. Meaningful standardised disclosure can enable investors to evaluate effectively an organisations exposure to climate risk allowing financial markets to function more effectively, as investors and insurers are better able to assess risks. This can lead to financial markets being less exposed to climate change risk and can divert investment towards low carbon companies. The UK has implemented the EU Non-Financial Reporting Directive and has formally endorsed the recommendations from the Task Force on Climate-related Financial Disclosures.

Recommendation 23: Information and advice to businesses

Recommendation

The government should consult on the measures needed in the next NAP to provide appropriate information and advice to support adaptation activity by businesses in England. For example, the government could work with bodies such as the Confederation of British Industry, the Institute of Directors, the Federation of Small Businesses, Local Enterprise Partnerships, local chambers of commerce, and key individual sector associations, to promote use of the guidance and tools that were developed by the Environment Agency and Climate UK before their closure.

Owner: Defra/BEIS

Timing: 2018

5.3 In consideration of the risks set out in the 2017 CCRA 2 the government will assess if there are any information gaps and needs for businesses, and how they might be met, drawing on existing support materials. Adaptation activity and how it is pursued is something which businesses should determine, in view of their own exposure and vulnerability to impacts.

5.4 Government already engages with Local Enterprise Partnerships on the implementation of the European Structural and Investment Funds (ESIF) programme. Defra will continue to engage with colleagues in DCLG and BEIS on engagement with LEPs, particularly in relation to any future programmes of work to address the most urgent climate risks.

Recommendation 24: Public procurement rules

Recommendation

The government should examine how public procurement rules could be used to promote the disclosure and management of climate change risks including within supply chains. For example, the Crown Commercial Service could require companies tendering for contracts to explain how risks have been considered and addressed both within tenders, and by their overall business.

Owner: Defra/Crown Commercial Service

Timing: by 2020

5.5 Since 2011, sustainable development has been the mainstreamed responsibility of all government departments.

5.6 Defra reports publicly on departments' sustainable procurement practices under the Greening Government Commitments programme. Under this programme, departments are required to 'buy more sustainable and efficient products and services with the aim of achieving the best long-term, overall value for money for society'; to 'report on the systems they have in place and the actions taken to buy sustainably'; and to 'understand and reduce supply chain impacts and risks'.

5.7 The Greening Government Commitments also require government departments to report transparently on the actions they are taking in relation to climate change adaptation, as part of its focus on leading by example in sustainable operations and procurement. The Greening Government Commitments, in line with the principle of mainstreaming sustainable development within departments' practices, require departments to make decisions about pursuing sustainability as appropriate to their own operations and procurement.

5.8 Government agrees that supply chain management offers opportunities to manage climate change disruptions and departments are encouraged to bear in mind the implications for climate change in their approach to supply chain management.

Chapter 6: Local Government

6.1 The impacts of climate change and severe weather conditions will vary from location to location and are thus often most effectively managed at a local level. As the ASC points out, local authorities are key partners in delivering many aspects of the National Adaptation Programme. They are responsible for a significant number of risks and areas relating to climate change including flood management, civil contingencies and planning. As such and as the ASC points out, many of the Recommendations in previous chapters of the ASC's assessment are also relevant to local authorities.

6.2 The government's approach to local government should be considered in the context of the Localism Act 2011 and the Cities and Local Government Devolution Act 2016 which gives local government functions, freedoms and flexibilities as well as responsibilities and governance. They support the move towards giving local councils more power to decide how to spend public money in their areas so they can meet local people's needs. At the same time, the government is helping to make sure Council Tax payers get value for money by making councils more transparent and accountable.

Response to Recommendations

Recommendation 25: Ensuring access to guidance and tools

Recommendation

The government should set out in the next NAP how it will ensure local authorities have access to the technical expertise, guidance, and practical tools they need following the closure of the Environment Agency's Climate Ready Support Service, Climate UK, and Climate Local. There is potential for professional bodies such as the Royal Town Planning Institute and the Chartered Institution of Water and Environmental Management to take a greater role in providing information, training and advice.

Owner: Defra/DCLG

Timing: 2018

6.3 We note the ASC's concerns regarding the need to maintain momentum and to assess the level of progress being made.

6.4 Currently government engages on adaptation with councils, including the availability of tools and guidance, via different forums, or groups. These include the Local Adaptation Advisory Panel, the Core Cities group and the Local Government Association. This will continue with the development of the second NAP. The government wants to work with these groups, in particular Core Cities, to understand issues around access to advice,

guidance and tools (strategic and operational), any gaps in this knowledge base, and how it is hosted and disseminated.

6.5 Online tools and best practice for councils are available through the sites of delivery agents, such as Climate UK/London Climate Change Partnership, to enable councils to improve and develop their ability to adapt to climate change. For instance, there is a template business case available for councils.²

6.6 The Royal Town Planning Institute (RTPI) provides information, training and best practice on climate change targeted at professional planners. This includes an online training module on climate change which is open to all through its Learn portal. In 2018 it will launch a new climate change programme, providing practical advice and support to planning professionals, and others, on mitigation and adaptation. This Better Planning programme demonstrates how planning can be part of the solution to major social, economic and environmental challenges. The Chartered Institution of Water and Environmental Management also has expertise at its disposal to develop appropriate best practice and training packages on adaptation for councils.

Recommendation 26: Reporting under the Adaptation Reporting Power

Recommendation

To stimulate activity and improve monitoring and evaluation, local authorities should be included within the scope of the third round of reporting under the Adaptation Reporting Power. Defra should identify the most efficient and effective means for local authorities to report on the action they are taking and the progress being made to prepare communities for climate change.

Owner: Defra

Timing: 2018

6.7 Following a public consultation, local councils were considered outside the scope of the second round of adaptation reporting as part of the Adaptation Reporting Power.

6.8 The government's approach to adaptation reporting in the third round, including which parties will be invited to participate and how they will report will be subject to consultation. However, we will be mindful of the need to minimise burdens to local councils in the context of their current responsibilities for addressing climate risks.

² <https://www.local.gov.uk/sites/default/files/documents/climate-ready-councils-bu-351.pdf>

Recommendation 27: Sub-national approaches to climate change adaptation

Recommendation

The next NAP should develop stronger sub-national approaches to climate change adaptation that promote business and infrastructure resilience, healthy communities, and investment in natural capital. For example, there is the opportunity to build on current arrangements and work with London and the core city regions, the metro mayors, and the Local Enterprise and Local Nature Partnerships.

Owner: Defra

Timing: 2018

6.9 In consideration of the risks set out in the 2017 CCRA the government will assess the need for sub-national approaches and how they might be taken forward, drawing on existing support materials and resources. We are engaging with Core Cities, the Greater London Authority and London Councils/the London Environment Directors Network to consider developing sub-national approaches which are necessary due to the local spatial scale of climate impacts, managing resources, and local priorities.

Recommendation 28: Effectiveness of the land use planning system

Recommendation

The government should review the effectiveness of the land-use planning system in achieving reductions in greenhouse gas emissions from buildings and transport, and enhancing the resilience of communities and the built environment to the impacts of climate change. The review should consider both strategic and local land-use allocation, and building and infrastructure design.

Owner: DCLG

Timing: 2019

6.10 The government agrees that the planning system has an important role to play in meeting the challenge of climate change. However, it does not agree that it is necessary to carry out a specific review of this nature. Planning policy and legislation already sets a clear expectation that local planning authorities will take account of climate change and seek to mitigate and adapt to its impacts.

6.11 There is a statutory requirement under section 19(1A) of the Planning and Compulsory Purchase Act 2004 for local planning authorities to include policies in their local plan designed to contribute to the mitigation of, and adaptation to, climate change.

6.12 In addition, the National Planning Policy Framework sets out how, through both local plan-making and decision taking, planning authorities should support the transition to a low carbon future in a changing climate and minimise vulnerability to the impacts of climate change. These are considerations when a local plan is examined and before it can be adopted. Once adopted, the local plan provides the primary basis (subject to other material planning considerations) for planning decisions in the local authority's area.

6.13 We have already reviewed national planning policy more broadly and earlier this year, the previous government consulted through its housing white paper, 'Fixing Our Broken Housing Market'. This included proposals to strengthen the existing policy by providing increased clarity on the role of local planning authorities in considering climate change factors in plan-making and supporting measures for the future resilience of communities and infrastructure. We are considering how the proposals in the white paper for amending national planning policy should be taken forward in the light of the responses to this consultation and aim to revise the National Planning Policy Framework by spring 2018.

Glossary

Acronym	Definition
ARP	Adaptation Reporting Power
ASC	Adaptation Sub-Committee of the Committee on Climate Change
BEIS	Department for Business, Energy & Industrial Strategy
CAP	Common Agricultural Policy
CCA	Civil Contingencies Act 2004
CCC	Committee on Climate Change
CCRA	Climate Change Risk Assessment
CIBSE	Chartered Institution of Building Services Engineers
DCLG	Department for Communities and Local Government
Defra	Department for Environment, Food and Rural Affairs
DfE	Department for Education
DH	Department of Health
DSF	Drainage Strategy Framework
DWMP	Drainage and Wastewater Management Plans
EA	Environment Agency
EC-RRG	Electronic Communications – Resilience and Response Group
EMFF	European Maritime and Fisheries Fund
ESIF	European Structural and Investment Funds
EU	European Union
FCERM	Flood and Coastal Erosion Risk Management
FMSY	Fishing Mortality Maximum Sustainable Yield
G7	The Group of 7 (G7) is a group consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
ICT	Information and Communications Technology
LEPs	Local Enterprise Partnerships

LGA	Local Government Association
LLFAs	Lead Local Flood Authorities
LRFs	Local Resilience Forums
MoJ	Ministry of Justice
MSY	Maximum Sustainable Yield
NAP	National Adaptation Programme
NCC	Natural Capital Committee
NERC	Natural Environment Research Council
NIC	National Infrastructure Commission
NIRC	National Infrastructure Resilience Council
Ofsted	Office for Standards in Education, Children's Services and Skills
Ofwat	The Water Services Regulation Authority
OPEG	Ocean Processes Evidence Group
PLR	Property Level Resilience
PR19	Price Review 2019
RFCC	Regional Flood and Coastal Committee
RMA s	Risk Management Authorities
RSPB	Royal Society for the Protection of Birds
RTPI	Royal Town Planning Institute
SMP s	Shoreline Management Plans
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
SWOT analysis	Strengths, Weaknesses, Opportunities, and Threats. This is a structured planning method that evaluates these four elements.
UK	United Kingdom
UKCP18	United Kingdom Climate Projections 2018
UKRI	United Kingdom Research and Innovation

