



HM Government

Government response to the Committee on Climate Change

Progress on Preparing for Climate Change

October 2015



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for Climate Change

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

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Climate Change

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Contents

Executive summary	5
Background to the response	7
Chapter 1: The National Adaptation Programme	9
Chapter 2: The Built Environment	13
Chapter 3: Infrastructure	19
Chapter 4: Healthy and Resilient Communities	23
Chapter 5: Agriculture and Forestry	29
Chapter 6: Natural Environment	35
Chapter 7: Business	41
Chapter 8: Local Government	45

Executive summary

The Government is committed to increasing our resilience to the impacts of climate change and putting the country in a position to take advantage of any opportunities that may emerge. We published the first UK Climate Change Risk Assessment in 2012 which sets out risks and opportunities to the UK from climate change up to the end of the century, and the first National Adaptation Programme (NAP) report in 2013 which sets out how we are responding to the Risk Assessment.

The second Climate Change Risk Assessment will be published in 2017. The recommendations made by the Adaptation Sub-Committee (ASC) in their first statutory assessment of the first NAP report provide us with timely input to inform our ongoing work on climate change adaptation and the development of the next NAP report.

The Government takes seriously the risk of flooding, and the increased pressures climate change will add to this. We generally agree with the ASC's recommendations in this area or are confident that our current activity is sufficient to address their concerns.

The Adaptation Reporting Power provides a clear mechanism under which infrastructure providers, along with other organisations, consider their vulnerability to current and future climate change. Furthermore, the Strategic Defence and Security Review will consider infrastructure security and resilience.

Overheating in the built environment is a complex issue and we recognise the overall need to act identified by the ASC. There is a range of positive work ongoing in this area, including the development of underpinning research and understanding. The outcomes of this work will inform any future activity.

A broad range of activities are needed to increase the resilience of our agriculture and forestry sectors and our natural environment, addressing the pressures identified by the ASC. These include the protection and improvement of our soils and peatlands and of habitats and biodiversity. We are also considering how water is managed, when there is both too much and too little.

The Government also encourages businesses to increase their resilience, and the resilience of their supply chains, while also exploring the potential opportunities that climate change may bring.

Climate change will have an impact on all of us, in many different ways. The Government, business, local government, communities and individuals all need to work in tandem. The breadth of the ASC's report exemplifies this.

Background to the response

The most recent Assessment Reports from the Intergovernmental Panel on Climate Change state that the effects of climate change will be widespread and pose serious consequences if substantial action is not taken to reduce greenhouse gas emissions. Unmitigated climate change will bring great risks to human health, food security, and economic development.

However, even with significant global reductions in greenhouse gas emissions, climate projections suggest we are already committed to increases in temperature and other climatic changes over coming decades. As such there is a need for the UK to continue efforts to reduce emissions while also adapting and building resilience to the projected impacts of a changing climate that either cannot be avoided or are happening already.

Along with requirements for climate change mitigation, the Climate Change Act 2008 created a framework for building the UK's ability to adapt to climate change, by establishing:

- That a UK-wide Climate Change Risk Assessment (CCRA) must take place every five years;
- That a National Adaptation Programme (NAP) must be put in place to address the most pressing climate change risks and be reviewed following each CCRA;
- A mandate giving Her Majesty's Government (HMG) and the Welsh Government the power to require public

authorities and statutory undertakers to report on how they assess and address the risks to their work from climate change;

- The duty of HMG to publish a strategy outlining how this new power, the Adaptation Reporting Power, will be used, and the option to provide guidance on what reporting authorities need to do; and
- The Adaptation Sub-Committee (ASC) of the independent Committee on Climate Change (CCC) to assess progress on the Government's climate change adaptation programme. Their role includes advising on the CCRA and evaluating the NAP.

It is the first statutory assessment of the NAP produced by the ASC and published in June 2015 to which this document responds. The assessment of the NAP was accompanied by the CCC's annual assessment of progress on mitigation and a shorter overarching report that made 5 main recommendations to the Government.

The government response mirrors the format of the assessment reports. Alongside this document, a comparable mitigation document responds to the CCC's mitigation report and a shorter overarching response brings together the narrative on both adaptation and mitigation and addresses the CCC's 5 main recommendations to the Government.

Adaptation is embedded as a consideration across UK Government with coordination

from the Domestic Adaptation Board. The Defra Climate Ready programme chair the Domestic Adaptation Board and co-ordinate the UK Government's work on adaptation in England, and throughout the UK on a range of reserved matters. Some matters, such as Defence, are primarily addressed separately.

The NAP, and the ASC's assessment of it, are focused on England and reserved matters only. The same remit applies to this response. The ASC are providing a separate assessment of the Scottish NAP in 2016. They are not currently expected to assess adaptation in Wales or Northern Ireland at this time but could be requested to do so.

The following response follows the structure of the ASC's report, with a first chapter on the approach to the NAP itself, followed by seven chapters mirroring each of the first NAP report's thematic divisions. The response primarily addresses the 36 recommendations made by the ASC, though other issues and comments raised by the ASC are addressed where appropriate.

Chapter 1: The National Adaptation Programme

1.1 The National Adaptation Programme (NAP) is the Government's programme to increase our resilience to the impacts of climate change, to prepare and adjust for any change that is required and to seize the opportunities that emerge. The first NAP report published in July 2013 set out the Government's approach to addressing the risks in the first Climate Change Risk Assessment (CCRA) which was published in January 2012.

Policy Approach

1.2 The first NAP report was developed with over 250 different organisations and represents a significant success in the 'co-creation' of Government policy with stakeholders. This approach enabled the NAP to have broader influence beyond Government encouraging greater consideration of climate change impacts and solutions. Climate change is not just an issue for the Government to resolve; local government, industry, communities and individuals all have important roles to play.

1.3 The first NAP report focused on 4 main areas:

- Increasing awareness;
- Increasing resilience to current extremes;
- Taking timely action for long lead time measures; and
- Addressing major evidence gaps.

1.4 The Government will be considering the approach to the second NAP report, with the ASC's assessment report providing timely input. The development of the next NAP report will be informed by the views of the ASC, of stakeholders and of other experts in the area of climate change adaptation, by the lessons we have learnt and continue to learn from the implementation of the first NAP report, and by the findings of the second CCRA.

Response to recommendations

1.5 The ASC's recommendation for the overall approach to the next NAP report was divided into four parts. These parts are addressed below.

Recommendation 1a: Set clear priorities

Recommendation

The second National Adaptation Programme should set clear priorities for adaptation: to make sure the most important and urgent issues are being addressed. As well as this report, the next Climate Change Risk Assessment will help the Government identify the most urgent risks facing the UK from climate change, to provide a clearer focus for the next NAP.

Owner: Defra

Timescale: Next NAP report in 2018

1.6 We agree with the recommendation and fully intend to set clear adaptation priorities in the second NAP report.

1.7 The first NAP report responded to the risks identified in the first CCRA, with the majority of the 370 actions specifically tied to one or more CCRA risks. In the same way, the priorities identified in the second CCRA, for which the ASC have been tasked with producing the underpinning evidence report, will be the main determinant in the prioritisation of the next NAP report.

Recommendation 1b: Set specific, outcome-focused and measurable objectives

Recommendation

The second National Adaptation Programme should ensure objectives are specific, outcome-focused, and measurable: objectives should focus on priority outcomes, and what needs to be achieved in real-world terms, rather than describing processes and activities.

Owner: Defra

Timescale: Next NAP report in 2018

1.8 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. Where appropriate we will also ensure objectives are specific, measurable, and focus on clear outcomes.

1.9 However, along with establishing specific, measurable and outcome focused objectives to deliver the priority outcomes, the NAP has a role in embedding adaptation in the underlying processes which shape broader activity both in Government and beyond.

1.10 An example of this is the need to accommodate and adjust to inevitable change in the composition of our natural environment. Specific outcomes can be identified that will assist species in adapting to climate change but supporting a more fundamental adjustment in the way we all think about the future of the natural environment is another important element of the NAP.

Recommendation 1c: Focus on highest impact actions

Recommendation

The second National Adaptation Programme should focus on the core set of policies and actions that will have the biggest impact: each with specific goals, responsibilities and timing. It should be clear how each action helps address one or more of the risks identified as requiring urgent attention by the next CCRA.

Owner: Defra

Timescale: Next NAP report in 2018

1.11 The Government recognises the benefits of a tighter group of core policies and actions that are clearly owned, can be delivered to a set timescale and have a significant impact on our resilience to climate change. We will embed this in the development of the second NAP report.

1.12 However, we will also continue to support broader engagement and the benefits it brings. The ASC recognises the benefits of the first NAP report in successfully engaging a wide audience to commit to specific actions and also consider climate change impacts more broadly in their ongoing work.

1.13 We will therefore explore a two tier approach to adaptation actions. The first tier would focus on the highest impact and most needed policies and actions with clear timeframes, targets, monitoring and evaluation. The second tier would capture a summary of much broader activity across Government and beyond that supports our adaptation objectives.

1.16 The ASC have been directly involved in a process of monitoring and evaluating of the first NAP report for a number of years. The Government would be interested to hear lessons the ASC have learnt from the process so far, and more of their views on how a cost-effective monitoring and evaluation process could be best implemented.

Recommendation 1d: Introduce effective monitoring and evaluation

Recommendation

The second National Adaptation Programme should introduce effective monitoring and evaluation: that allows progress to be measured and reviewed so that policies can be strengthened and resources reallocated (including between departments) if need be, in order to ensure the objectives are being achieved.

Owner: Defra

Timescale: Next NAP report in 2018

1.14 We recognise the benefits of effective monitoring and evaluation of the real-world impact of adaptation actions. Detailed monitoring and evaluation of the first tier policies and activities referred to in our response to recommendation 1c will allow for a clear indication of the success and influence of each individual NAP report.

1.15 In addition to this, the iterative nature of the Climate Change Act already in place is an effective way of monitoring and evaluating progress. Each assessment of risks under the CCRA is informed by previous progress on adaptation, and each NAP report is in turn informed by that reassessment of the priority risks. It is through this process that success can be evaluated at regular intervals and policies and resource allocations can be reconsidered.

Chapter 2: The Built Environment

2.1 The main climate change impacts addressed in this section relate to flooding and drainage, which are affected by the large number of hard surfaces and density of people and assets in the built environment. Overheating is also a significant consideration for the built environment but is addressed in Chapter 4 – Healthy and Resilient Communities.

Policy Approach

2.2 The Government remains committed to increasing the UK's resilience to flooding and coastal erosion, and in doing so fully factor in the projected impacts of climate change.

2.3 In December 2014, the Government published its 6 year flood management investment programme. £2.3 billion has been planned to be spent on more than 1,500 schemes to improve defences through a pipeline of work up to 2021. This long-term plan will allow the Environment Agency and its partners to:

- Deliver efficiency savings of at least 10% over the life of the programme.
- Attract additional funding through partnership contributions, equivalent to at least 15% of the Grant in Aid spend, in line with the Government's Partnership Funding policy.
- Deliver increased protection to at least 300,000 households.
- Give communities a clearer view of when schemes will be built.

Response to recommendations

Recommendation 2: Publish flood risk strategy

Recommendation

Defra should take steps to address the increasing number of homes and other properties expected to be at high flood risk in the coming decades, publishing a strategy within a year of this report.

Full use should be made of the opportunities presented by the Flood Re subsidised insurance scheme to encourage households in high flood risk areas to take steps to reduce the potential for flood damage.

Owner: Defra

Timescale: Summer 2016

2.4 We agree that the Government should take steps to address the risks to homes and other properties expected to be at high flood risk in the coming decades.

2.5 The Environment Agency's Long Term Investment Scenarios (LTIS) model was designed to show overall returns for different levels of investment over time. The ASC's conclusion that it indicates that an additional 45,000 properties fall into the high risk category in the 2060s is taken from Figure 13 of the LTIS, which illustrates some risk scenarios at the halfway point of the economic appraisal period used in

the LTIS study. LTIS indicates a general downward trend over the longer term. The total number of properties at high risk at any one time could vary depending on local choices on timing of individual flood risk management investments. LTIS was never designed to be able to take this into account. The Environment Agency is leading further research into how LTIS can be enhanced, including the ability to test the effects of different timings of investment.

2.6 We are already developing strategic work in relation to floods. Significant activity in this area is already underway or planned. We are working with the Environment Agency to further understand how changes to timing of investment of flood risk management schemes can be reflected in LTIS to enhance our understanding of future flood risk. We also need to consider the impact from existing activities to increase uptake of property-level resilience, as well as find ways to address the behavioural barriers to action on flood resilience at an individual property and community level. Flood Re will provide some of the answer, although insurance will only ever be part of the wider solution.

2.7 We will be actively considering the Government's role in addressing residual risks, including enhancing property-level resilience, catchment wide opportunities, and in ensuring communities at highest risk have the right information available to understand their future risks.

2.8 We agree with the ASC that the level of take-up of property-level resilience needs to increase to address the number of properties at the highest level of risk for which investment in community-level defences is unlikely ever to be economic. We are already conducting a range of activities to drive take-up – from improving standards, to working with the relevant industries – and will consider the need to develop our strategic approach to bring together these work streams.

2.9 Our response on the role of Flood Re is set out further under recommendation 7.

Recommendation 3: Publish surface water flood risk action plan

Recommendation

Defra should (a) amend in this Parliament the 1991 Water Industries Act in order to remove or make conditional the current automatic right to connect new development to public sewers and (b) work with local government representatives to improve local flood risk management arrangements. Both elements should be part of an action plan to tackle surface water flood risk, to be published by Defra within a year of this report.

Owner: Defra

Timescale: Summer 2016

2.10 We agree with the recommendation for the Government to publish an action plan for improving the management of local flood risk within a year. Our intention is to do so alongside the publication of the evaluation report for the local flood risk elements of the Flood and Water Management Act 2010.

2.11 We recognise the need to reduce the call on the public sewer that the Pitt Review recommendation to remove the automatic right to connect to the public sewer was seeking to achieve. However, we are confident that the changes to planning policy put in place by the previous coalition Government to promote sustainable drainage systems (SuDS) as the first option for surface water drainage for new major developments will achieve this. We do not therefore think it necessary to implement the first part of the recommendation related to removing the automatic right to connect new development to public sewers.

2.12 National planning policy is clear that new development should only be considered appropriate in areas at risk of flooding where it gives priority to the use of SuDS. From 6th April 2015 the policy was strengthened to make clear the expectation that sustainable drainage systems will be provided in all new major developments,¹ unless demonstrated to be inappropriate.

2.13 Building regulations also give priority to SuDS in their hierarchy of arrangements for dealing with rainwater and there is no development size threshold. The Government remains committed to keeping the threshold under review.

2.14 The current arrangements for managing the risk of flooding from local sources including surface water have been in place for five years. Evidence from independent evaluation is clear that whilst some elements of the arrangements are working well there is scope for improvement in other areas. The new role for Lead Local Flood Authorities in providing technical advice on SuDS also completes the implementation of the new role for Local Authorities envisaged by Sir Michael Pitt and given shape in the legislation. An action plan at this stage is timely, and should help set the direction for the next five years.

Recommendation 4: Improve sustainable drainage planning process

Recommendation

DCLG should by the time of the ASC's next report in 2017 (a) make water companies statutory consultees on all planning applications that have implications for the public sewer network; (b) put in place a process for monitoring and evaluating the effectiveness of planning policy in (i) achieving a high uptake of SuDS in new development and (ii) limiting the paving-over of front gardens with impermeable surfaces.

Owner: DCLG

Timescale: Early 2017

2.15 This recommendation is presented in a number of parts which are addressed separately below.

(a) Making water companies statutory consultees on planning applications

2.16 We do not agree that this step is necessary because water and sewerage companies are already a statutory consultee on the preparation of local plans.² We believe that this is important for informing a local authority's planning strategy which, as set out in its local plan, provides the basis for determining planning applications. For individual planning applications, local authorities can already consult water and sewerage companies where they consider that the proposal may have planning implications for the public sewer network. National planning guidance encourages consultation with other bodies, including sewerage undertakers where a connection to a public sewer is proposed.

¹ 10 dwellings or more; or equivalent non-residential or mixed development.

² As required by The Town and Country Planning (Local Planning) (England) Regulations 2012.

(b) Put in place a process for monitoring and evaluating the effectiveness of planning policy in:

(i) Achieving a high uptake of SuDS in new development

2.17 The Government partially accepts this recommendation insofar as the previous coalition Government committed to keep the size threshold at which developments become subject to the new planning policy for SuDS under review and consider the need to make adjustments where necessary. We will be taking this forward and plans are underway to design a programme of long-term engagement with developers and drainage engineers; local government and planning professionals; academics and others with an interest.

2.18 National planning policy is clear that new development should only be considered appropriate in areas at risk of flooding where it gives priority to the use of SuDS. The Government's approach to reviewing the recent changes to planning policy for SuDS will focus on the major development size threshold to which those policy changes apply. This will be complemented by on-going engagement with key representatives for house-builders, and local government; also planning and drainage professionals, to gauge their views on the effectiveness of the changes to planning policy and the ease with which the changes are bedding in. We believe this is a time- and cost-efficient approach to delivering the commitment which will also satisfy the spirit of the ASC's recommendation.

(ii) Limiting impermeable paving of front gardens

2.19 While householders can pave their front gardens without having to make a planning application to their local council there are safeguards in place relating to surface water run-off so as to reduce the risk of flooding. The 'permitted development right' is only available for more than 5 square metres of hard surfacing where the hard surface is made of porous materials, or the run-off is directed to a permeable or porous surface within the curtilage of the house. Use of traditional materials, such as impermeable concrete, where there was no facility in place to ensure permeability, would require an application for planning permission.

2.20 Enforcement action is discretionary, and local planning authorities are encouraged to act proportionately in responding to suspected breaches of planning control. However, they can take action against an inappropriately implemented permitted development right and we are clear in national planning policy that effective enforcement is important as a means of maintaining public confidence in the planning system. Local planning authorities can also remove a permitted development right through, following consultation with the local community, an 'article 4 direction'. These directions can cover an area of any geographic size, from a specific site to a local authority-wide area and remove a permitted development right with temporary or permanent effect.

2.21 Any concerns about flood risk arising from the paving of front gardens can be addressed by local councils and because of the importance of local context are best considered locally including through appropriate monitoring. We do not therefore believe it is necessary to develop a national approach for monitoring and evaluation.

Recommendation 5: Implement SuDS reporting requirement

Recommendation

Ofwat should require each water company to report on the area of land where above-ground SuDS, including permeable paving, has been installed over the current Asset Management Plan (AMP) period to 2020, as part of delivering the industry-wide commitment to reduce sewer flooding incidents by 33%.

Owner: Ofwat

Timescale: 2020

2.22 Ofwat will be providing their response to the Adaptation Sub-Committee directly, and it is therefore not included here.

2.23 From the Government's perspective, we will look to support Ofwat's, water companies' and water customers' plans to reduce sewer flooding.

Recommendation 6: Publish new development flood risk assessment

Recommendation

DCLG and the Environment Agency should by the time of the ASC's next report in 2017 publish an assessment quantifying the impact of new development on long-term flood risk. The evidence from this assessment should be used to inform subsequent Environment Agency long-term investment scenarios.

Owner: DCLG

Timescale: Early 2017

2.24 The Government will work with the Environment Agency to ensure their long term investment scenarios are based on the best information we collectively hold about new development and flood risk. However, with the information already available, and published, we do not think it necessary to publish a new assessment in the form recommended, not least because the available data indicate that planning policy is being applied effectively. For example, the latest land use change statistics indicate 7% of new homes were built in areas of high flood risk in 2013/14. This is a new statistical series³ utilising a new methodology which means the data should not be directly compared with previous statistics. But it is worth noting that the last three years of the earlier series indicated 11% of new homes were built in areas of high flood risk in 2009, 9% in 2010 and 7% in 2011. This is in the context of around 10% of England being at high risk of flooding, including central London and cities such as Hull. Planning policy does not rule out development in these areas, but does aim to ensure it is safe and does not increase flood risk elsewhere.

2.25 The Environment Agency provides advice on the safety aspects of proposed developments in flood risk areas and on whether flood risk to and from the development would be adequately mitigated, in line with planning policy. In over 96% of cases where the Environment Agency has objected to planning applications on flood risk grounds, the final outcome (where known) is in line with Agency advice. Similarly, over 98% of new residential units in planning decisions notified to the Environment Agency where the Agency had objected to on flood risk grounds were decided in line with Agency advice.

³ The new series of land use change statistics is designed to produce more timely and robust statistics.

Recommendation 7: Incorporate flood risk alleviation into Flood Re transition plan

Recommendation

Flood Re's transition plan, required within three months of Flood Re Ltd. being formally designated the scheme administrator, should include clear proposals for how the scheme will promote flood risk alleviation amongst high risk households.

Owner: Flood Re Ltd

Timescale: Autumn 2015

2.26 We agree that Flood Re can play a role in encouraging households and insurers to take steps to reduce the potential for flood damage at individual property level. It's vital that Flood Re doesn't just deliver affordable flood insurance, but also provides the right incentives for households and insurers to put in place the necessary measures to become more resilient.

2.27 However, Flood Re is limited in what it is permitted by the financial regulators to do outside its role as a reinsurer. The first transition plan is therefore not likely to go as far as the ASC recommendation asks. Nevertheless, we are continuing to explore with the industry how people could be incentivised to take action to manage their flood risk. Flood Re has agreed to come up with proposals for this within 2 years of starting operations.

2.28 Whilst we agree that insurance could be an important driver of uptake for Property Level Protection, we believe that many of the barriers to adoption are behavioural rather than financial. Making use of the opportunities presented by Flood Re will only be part of the solution.

Recommendation 8: Manage household demand for water

Recommendation

Ofwat should continue to work with the Environment Agency and water companies to ensure that action is being taken to manage household demand for water. This will require ambitious demand reduction commitments in the next round of long-term water resources management plans, due in 2019, including ensuring sustained increases in metering and a continued reduction in average per person consumption.

Owner: Ofwat

Timescale: 2019

2.29 Ofwat will be providing a separate response on this recommendation to the Adaptation Sub-Committee directly.

2.30 From the Government perspective, we are working closely with Ofwat and the Environment Agency to develop a new guideline for the next round of water resources planning which will commence with consultation on company plans in 2018. The guideline will include the Government's policy priorities for water resources planning, including the role of both demand and supply measures to ensure a company plans for resilient supplies of water. The plans will set out how each water company intends to provide a secure supply of water for people and businesses over a 25-year period, while protecting the environment.

Chapter 3: Infrastructure

3.1 Risks to infrastructure include the effect of flooding on power generation, energy supply, strategic transport networks and sewer infrastructure and the availability of water for public supply and other sectors. The knock on effects caused by the loss or disruption of any of these services, and the combined effects of multiple service failures would have consequences for the effective functioning of organisations across the country. The most significant and urgent risks identified for transport are associated with increased precipitation and temperature.

Policy Approach

3.2 The Adaptation Reporting Power provides a clear mechanism under which infrastructure providers, along with other organisations, consider their vulnerability to current and future climate change and report to the Government on the actions they are taking to address these vulnerabilities. Almost all infrastructure operators are reporting voluntarily under the second reporting round. The cyclical nature of the Adaptation Reporting Power means infrastructure operators can revisit risks and actions every five years.

3.3 National Policy Statements shape nationally significant infrastructure projects and factor in the impacts of climate change and the need for adaptation. Meanwhile, the resilience of critical national infrastructure is supported through Sector Resilience Plans led by the Civil Contingencies Secretariat.

3.4 Work on the 2015 National Security Strategy, Strategic Defence and Security Review and the 2015 Spending Review are aligned and we expect to publish the report towards the end of the year.

3.5 The Strategic Defence and Security Review will build on the progress made since 2010 and will be informed by a refreshed National Security Risk Assessment. It will consider both traditional defence and security topics and a range of emerging risks and opportunities.

Response to recommendations

Recommendation 9: Assess systemic risk trends

Recommendation

In time for the ASC's next progress report in June 2017, the Department for Communities and Local Government should develop an approach to assess whether systemic risk is increasing or reducing as a result of individual decisions on the location of new national infrastructure assets. This should inform a decision on whether there is a need for an overarching National Policy Statement to guide decisions on the design and location of new assets.

Owner: DCLG

Timescale: Early 2017

3.6 Nationally significant infrastructure projects (NSIPs) are consented through the nationally significant infrastructure regime. Planning policies for NSIPs are set out in National Policy Statements, which includes policies on adapting to climate change, and are informed by an appraisal of sustainability. Where National Policy Statements have a spatial element, for example on Nuclear Power and Waste Water Treatment these spatial choices are strongly influenced by climate change considerations and, as with other national policy statements, are subject to Strategic Environmental Assessment as part of the appraisal of sustainability. Cumulative environmental impacts are considered as part of the appraisal of sustainability and environment impact assessment of individual projects.

3.7 We do not consider therefore that it is necessary to develop an approach for assessing whether systemic risk is increasing or reducing as climate change risk is taken account of both in the policy setting and consideration of individual projects. Additionally it would not be realistic to assess the suitability of every individual site for every potential development that might come forward in the future. The Government believes existing statutory and policy procedures are adequate. But if there were any concern about individual project examinations not paying proper regard to cumulative impact, we do not see how this would be usefully addressed by an overarching national policy statement. We therefore do not believe an overarching national policy statement is necessary.

Recommendation 10: Improve infrastructure reporting

Recommendation

The Cabinet Office should work with all infrastructure sectors as part of the next round of sector resilience plans in 2015 to develop consistent incident reporting, together with indicators of network resilience and performance, to allow improvements to be measured over time. The results should be presented by operators as part of their reports under the third round of the ARP. Reporting as part of the third round of the ARP should be made mandatory.

Owner: Cabinet Office

Timescale: Summer 2016

3.8 The National Risk Assessment (NRA) and Sector Resilience Plans (SRPs) identify key risks and vulnerabilities facing our Critical National Infrastructure (CNI). Climate Change is addressed as part of these processes, as a key driver of some of the risks. SRPs are effective indicators of network resilience and performance and allow improvements to be measured over time. A review of SRPs is underway and the inclusion of incident reporting will be considered as part of this.

3.9 The ASC raised concerns around two similar disruptive incidents resulting from the siting of power and IT facilities in both Gatwick and Port of Immingham. Airports and sea ports such as Immingham operate in environments where they are particularly exposed to weather events. Action taken in response is largely proportionate to the level of risk. There is nothing to suggest the siting of power and IT facilities in basements is commonplace. This was only the case for Gatwick Airport which, along with Immingham has since addressed these vulnerabilities.

3.10 Furthermore, the resilience of critical systems such as power and IT was picked up in the Transport Resilience Review. As a consequence, operators are reviewing this vulnerability as part of their contingency planning.

3.11 The ASC also note a potential lack of wider data on the resilience of ports and airports. Resilience of ports to tidal surge has been addressed in a series of workshops and discussions with the sector. This has resulted in changes to response and recovery plans, reducing the impact of any future event. Lack of evidence regarding resilience of our larger airports in particular can in part be attributed to their existing high level of resilience.

3.12 Under the Climate Change Act future strategies on how the Adaptation Reporting Power is used must be subject to full public consultation, this will include obtaining the views of current and potentially new reporting organisations. We will consider how the third round of reporting will be carried out, following a review at the conclusion of the current round, expected between 2016/2017 and the outcome of the consultation exercise.

Recommendation 11: Confirm critical national infrastructure service resilience

Recommendation

The Cabinet Office should confirm that the services provided by all critical national infrastructure are now resilient to a 1-in-200 year flood event. The Cabinet Office should agree, for a wider range of climate risks, sector resilience standards that are in the national interest and see that they are implemented. This process should inform the 2016 round of sector resilience planning.

Owner: Cabinet Office

Timescale: End of 2016

3.13 There is currently no national standard for flood resilience for critical national infrastructure assets. The Pitt Review 2007 raised this issue. The Review suggested a 1-in-200 year annual probability event was a reasonable starting point to protect critical national infrastructure from flooding. This was further reiterated in the 2011 'Keeping the Country Running' document, published by the Government, which stated this standard would be a useful benchmark but that it was for infrastructure owners, operators and regulators to decide the cost-benefit of doing this. A single homogenous standard would not capture the varying levels of criticality of assets to the system, and the differing levels of acceptable vulnerability for those assets. This vulnerability of Critical Sectors to all risks (including flooding) is generally monitored through the Sector Resilience Plans.

3.14 The ASC note the particular challenges faced by the rail sector. While the total rail asset is huge, Network Rail has demonstrated a reassuring level of commitment and efficiency in seeing that their actions from the Transport Resilience Review were carried out. There are a number of ongoing projects to improve sustainability of the rail network including a research project currently underway looking at embedding sustainability in future rail projects.

Recommendation 12: Facilitate resilience information sharing

Recommendation

Information on asset and network resilience should be shared between operators of interdependent assets, and with Local Resilience Forums. The Cabinet Office should facilitate the piloting of secure information sharing arrangements within a year of this report's publication. Based on the results, the Cabinet Office should consider introducing in this Parliament a legal duty to cooperate and share such information.

Owner: Cabinet Office

Timescale: Summer 2016

3.15 The Civil Contingencies Act 2004 already imposes a duty on Category 1 responders to put in place arrangements to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency. Under the Civil Contingencies Act, Category 1 and Category 2 responders also have a duty to share information with other local responders and co-operate with local responders to enhance co-ordination.

3.16 In addition, the new Valuing Infrastructure Spend Green Book Guidance provides tools to identify and manage interdependencies that affect resilience in projects.⁴

Recommendation 13: Conduct cross-sector review of reward and penalty regimes

Recommendation

The UK Regulators Network should ensure that proportionate and cost-effective approaches to increasing resilience and reducing climate change risks are in place for the economically-regulated sectors. A cross-sector review of reward and penalty regimes should be conducted in time for the ASC's next progress report in 2017, to ensure there are sufficient incentives in place for operators to manage severe weather incidents effectively and preserve services where possible.

Owner: UK Regulators Network

Timescale: Early 2017

3.17 The UK Regulator's Network will provide a response direct to the ASC in relation to how a review of reward and penalty regimes could be taken forward.

3.18 From the Government's perspective, the National Risk Assessment and Sector Resilience Plans, which identify key risks and vulnerabilities facing our Critical National Infrastructure, should contribute to proportionate approaches to increasing resilience over time. Reporting under the Adaptation Reporting Power should make transparent the actions economically regulated sectors are taking towards this goal.

⁴ <https://www.gov.uk/government/publications/green-book-supplementary-guidance-valuing-infrastructure-spend>

Chapter 4: Healthy and Resilient Communities

4.1 Climate change presents a significant threat to global public health over the coming century. The most pressing risks for health in the UK relate to overheating and the impact of extreme weather events, in particular flooding. Public awareness and appropriate building design and planning approaches are important for the first. For the latter, our capacity to respond to extreme weather and emergencies is integral.

Policy Approach

4.2 The Government recognises that steps taken to mitigate and adapt to climate change support our public health goals through promoting better health. For example, increased physical activity, active travel and greater use of green spaces can bring health benefits.

Response to recommendations

Recommendation 14: Include public awareness actions in next NAP

Recommendation

The next NAP, due in 2018, should contain a specific set of actions that aim to increase public awareness of climate change risks. Lead responsibility should be assigned to a single Government Department.

Owner: Defra

Timescale: Summer 2018

4.3 Public awareness is important for increasing uptake of adaptation activity in a range of specific areas, for example responding to heatwaves or reducing water use. However, we believe that this is better achieved and more effective through targeted messaging closely tied to individual climate threats rather than a blanket approach. We believe this will engage the public more readily by relating to tangible impacts with practical actions that they can take to increase their resilience and adapt.

4.4 There are a range of communication avenues and approaches that already exist related to major risks that will be exacerbated by climate change, such as flooding and overheating. In developing the next NAP report we will explore how this targeted approach can be reinforced through, for instance, embedding climate change impacts and adaptation more strongly as an inherent consideration within the existing awareness raising activities of individual departments. We wish to ensure there are strong, targeted and consistent messages on the individual issues. We think identifying a single lead Government Department for public awareness-raising would be inconsistent with that objective and as such we do not agree with the second part of the recommendation.

Recommendation 15: Evaluate evidence and introduce standard or regulation on reducing overheating

Recommendation

DCLG should, before the ASC's next report in 2017, evaluate the latest evidence and subsequently introduce a new standard or regulation on reducing the risk of overheating in new homes.

Owner: DCLG

Timescale: Early 2017

4.5 The Government will consider potential research to understand better what an overheating standard might look like and the options to help industry and others address the risks. The Government also needs to know what the associated costs and benefits are before a decision can be made on how best to reduce the overheating risk.

4.6 Zero Carbon Hub 'Overheating in Homes – The Big Picture' published on 16th June 2015 sets out causes, extent and evidence of overheating but acknowledges there is no accepted or agreed definition of overheating.⁵ The Government will consider the findings of the recent Zero Carbon Hub work and of potential research to explore strategies to help industry and others address overheating risks more successfully. In taking any work forwards the Government will be mindful of other commitments, for example to reduce net regulation on homebuilders.

Recommendation 16: Develop incentives for passive cooling uptake

Recommendation

DCLG and the Department of Health should develop incentives for the uptake of passive cooling in existing homes, hospitals and care homes and include new measures in the next NAP.

Owner: DH and DCLG

Timescale: Next NAP report in 2018

4.7 Overheating in buildings is a complex issue. Projected increases in UK temperatures will require greater cooling in homes, workplaces, hospitals, schools and elsewhere. The Government recognises that this recommendation is important if steps are to be taken to cool buildings and protect health while avoiding the path of widespread air conditioning and its multiple costs. Where mechanical cooling with refrigeration is required passive cooling can be less energy intensive and more cost-effective, thus helping to reduce energy demand and supporting the Government's mitigation objectives.

4.8 This recommendation focuses on a single technical solution. Dealing with overheating in existing buildings may require a range of different approaches, depending on the type of building, its configuration and location. Different approaches may also be required depending on tenure and occupancy. Incentives can offer one way to encourage action: but there are others, such as promoting better understanding of the issues and disseminating information. As noted above, the Government is looking at the findings of the recent Zero Carbon Hub work and other appropriate research in considering the way forward.

⁵ <http://www.zerocarbonhub.org/news/zch-release-overheating-homes-big-picture>

4.9 The Department of Health has recently published guidance to increase climate resilience of the healthcare estate⁶ and to make energy work in healthcare⁷ which includes recommendations on reducing mechanical cooling. There is also potential to explore behavioural, educational, duty of care and commissioning routes.

Recommendation 17: Reverse decline in urban greenspace

Recommendation

DCLG should adopt and deliver a goal of reversing the decline in urban greenspace, and work with local authorities to begin delivering an implementation strategy by the time of the ASC's next report in 2017.

Owner: DCLG

Timescale: Early 2017

4.10 While we appreciate the ASC's concern, the essence of this recommendation is already reflected in the strong national planning policy in place, local authorities' responsibilities for their areas and the tools available to communities to protect urban greenspace.

4.11 National planning policy is already clear about the importance of green space and green infrastructure and encourages its provision as part of new development. Additionally, we do not expect existing open space, including sports and recreational land, to be built on unless an assessment has been undertaken which clearly shows it to be surplus to requirements; or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; or the development is for alternative sports and recreational provisions, the need for which clearly outweighs the loss.

4.12 Our planning guidance on climate change⁸ underlines that when preparing Local Plans and taking planning decisions, local planning authorities should pay particular attention to integrating adaptation and mitigation approaches and looking for 'win-win' solutions that will support sustainable development. For example through the provision of multi-functional green infrastructure,⁹ which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle.

4.13 These policies must be taken into account in the preparation of local and neighbourhood plans and are a material consideration in the determination of planning applications. In addition, the National Planning Policy Framework enables communities to identify for special protection green areas of particular importance to them as Local Green Space, where they will be able to rule out new development other than in very special circumstances.

4.14 Many local authorities continue to apply for Green Flag awards for their parks. Over 1,500 flags were awarded in 2015, more than any year before. The Community Right to Bid in the Localism Act 2011 also gave people the chance to recognise the places that are important to their community, including parks, allotments and other green spaces. Over 2,000 of these assets have been listed already, including over 200 parks, recreation grounds and allotments.

⁶ Health Building Note: HBN 00-07, April 2014.

⁷ Health Technical Memorandum: HTM 07-02, March 2015.

⁸ <http://planningguidance.planningportal.gov.uk/blog/guidance/climate-change/>

⁹ http://planningguidance.planningportal.gov.uk/blog/guidance/natural-environment/biodiversity-ecosystems-and-green-infrastructure/#paragraph_015

Recommendation 18: Assess capability of the national emergency planning system and identify further needs

Recommendation

The Cabinet Office should, before the ASC's next report in 2017, undertake a quantitative assessment of the capability of the national emergency planning system to manage extreme weather events; and in light of the findings, publish a summary outlining where further capability may be needed.

Owner: Cabinet Office

Timescale: Early 2017

4.15 The Government's approach to responding to major civil emergencies is to plan for the common consequences of risks (e.g. high number of casualties and fatalities) rather than each individual risk. This is a proportionate and effective mechanism of ensuring UK preparedness. Very high risks, such as pandemic influenza, flooding and some malicious attacks are supplemented by bespoke plans.

4.16 The Government agrees with the ASC recommendation and already has work underway to undertake assessments, quantitative where possible, of capability to respond to the consequences of major risks, including extreme weather events.

4.17 The key organisations involved in response have been working as part of a coordinated programme to assess our capability both at the local and national tier to respond to the consequences of risk. These assessments are helping inform decision-making about where to best target resource to improve UK preparedness.

4.18 Releasing information about current response capability would divulge areas of vulnerability which could be exploited to cause harm to the UK: capabilities required

to respond to extreme weather are also needed to respond to other risks, including malicious attacks. It is for this reason that we do not intend to publish the findings.

Recommendation 19: Instigate system to assess local capabilities to respond to extreme weather events

Recommendation

DCLG should work with Local Resilience Forums to instigate a system that quantitatively assesses local capabilities to respond to extreme weather events, with the results to be made available in time for the ASC's next progress report in 2017.

Owner: DCLG

Timescale: Early 2017

4.19 Local Resilience Forums (LRFs) provide a flexible, locally adaptable structure through which organisations with statutory responsibilities under the Civil Contingencies Act 2004 are able to work collectively to prepare for, and respond to, emergencies. LRFs are not an accountable body, rather they provide a forum for accountable bodies (Category 1 and 2 responders) to determine their local risks and the capabilities required to mitigate the risks. Working together, local responders plan, train and exercise to improve their capability to respond to emergencies. Every two years, the Government runs a National Capability Survey which supports local responders to identify and build their capability to a wide range of threats and hazards.

4.20 The Civil Contingencies Act requires emergency responders in England and Wales to co-operate in maintaining a public Community Risk Register. The Registers are approved and published by the LRF and provide the public with information about priority risks in their local area.

Recommendation 20: Collect and publish data and review capacity for local flood recovery

Recommendation

Local authorities should routinely collect and publish data on flood recovery, including the length of time occupants have to wait until they are able to return to their homes after a flood event. DCLG should review the capacity of local authorities to support people physically and mentally in the aftermath of a flood, and publish its findings before the ASC's next report in 2017.

Owner: DCLG

Timescale: Early 2017

4.21 We agree that local authorities should collect data on aspects of flood recovery, but not necessarily that they should publish it routinely. The publishing of such data is a matter for local decision on a case by case basis and there may be sensitivities and data protection implications. The Government would, however, expect high-level data to be available on local authorities' websites if appropriate.

4.22 It is essential that both local and national government can understand the impacts of a flooding incident so that individuals, communities and businesses can be supported through the recovery stage. The regular collection of data allows for this.

4.23 During the recovery phase from the 2013/14 winter floods, DCLG set up an on-line Flood Recovery Data Portal. Local authorities reported fortnightly the numbers of people out of their homes and non-operational businesses. DCLG also appointed Recovery Government Liaison Officers to support local areas and to provide valuable intelligence on the impacts of the flooding, and to identify good practice and lessons learned.

4.24 The Government is implementing lessons learned from recovery from winter 2013/14 and this includes a refresh of the on-line data portal, considering how best to collect data on wider impacts, and the role of the Liaison Officers.

4.25 In the case of a future significant recovery exercise, the Government would publish as part of a wider report, summary data provided by local authorities via the on-line portal.

4.26 The effects of flooding on health are extensive and significant, ranging from mortality and injuries resulting from trauma to infectious diseases and mental health impacts. While some of these outcomes are relatively easy to track, quantification of the human impact of floods remains challenging. For this reason, Public Health England has established a cohort study following the winter 2013/14 flooding in England to investigate how communities were affected and the effects on people's health and daily living. The results from the study will help us plan for the impact on people of future severe weather events, so we can help communities recover more quickly.

Chapter 5: Agriculture and Forestry

5.1 Climate change can lead to benefits for UK agriculture in terms of increased production due to longer growing seasons, increased CO₂ levels for plant growth, and the potential for growing new crops.

5.2 However, climate change also presents limiting factors that will prevent these opportunities being realised and threaten UK agricultural capacity. The main three of these are reductions in soil productivity, reductions in water availability and the flooding or waterlogging of agricultural land. Extreme or unseasonal weather events are of particular importance. The impact of climate change on pests and diseases and animal welfare also needs to be considered.

Policy Approach

5.3 The Government is committed to supporting the UK farming and forestry sectors. The 25 year food & farming plan being developed with leading industry representatives seeks to increase competitiveness across the entire food chain, helping the UK to become one of the most innovative food nations in the world.

5.4 In addition to this, Defra set up the Sustainable Intensification Platform, which will study what can be done to increase both profitability and sustainability of the farming system. We have also made £140m available under the new Rural Development Programme for England to help farmers increase farming and forestry productivity through innovation and research, skills and

training, and collaboration and support for projects that help tackle environmental problems as well as improving agricultural productivity.

Response to recommendations

Recommendation 21: Review on-farm water efficiency

Recommendation

Defra should bring forward its planned review of water efficiency measures on farms to the summer of 2016, in line with the initial plans presented in the National Adaptation Programme.

Owner: Defra

Timescale: Summer 2016

5.5 The ASC have subsequently clarified that this recommendation relates to supporting the transition to abstraction reform, as well as managing water security risks to agriculture more widely. We agree with the need for review but not the timings proposed by the ASC.

5.6 We believe that irrigators and other abstractors will need to become more water efficient as water becomes scarcer. Abstraction reform will assist in this by providing better incentives. The Government is committed to abstraction reform and is finalising its policy approach in order to implement reform by the early 2020s.

5.7 We will consider the need for any review of current water efficiency advice working with the Environment Agency and the UK Irrigation Association, and update it if necessary. However, we believe any major changes to advice to improve practice and reflect abstraction reform will be more effectively targeted as part of abstraction reform implementation and as such will not bring forward the review.

5.8 We will work with the Environment Agency to integrate improved training and support to farmers into abstraction reform implementation.

Recommendation 22: Pilot integrated approaches to managing flood risk to agricultural land

Recommendation

Defra, in collaboration with the Environment Agency and others such as the National Farmers Union, the Country Land and Business Association, and the Association of Drainage Authorities, should pilot integrated approaches to managing the risk of flooding to agricultural land. Approaches should incorporate catchment management, best practice farming approaches, and appropriate land drainage and flood defences. This should be completed in time to inform wider dissemination of the lessons as part of the next NAP in 2018.

Owner: Defra

Timescale: Next NAP report in 2018

5.9 We welcome this recommendation. Integrated approaches to managing flood risk alongside other priorities such as improving soil and water quality are essential for cost-effectively securing the future of our agricultural productivity and protecting our environment.

5.10 Land management practices can play a vital role in managing flood risk at a local level. For example, the creation and restoration of wetlands and woodlands can reduce the level of flooding. These practices may also produce wider environmental benefits at a local level, including creating wildlife species habitats, reducing carbon emissions and improving water quality.

5.11 The ‘Synergies’ report¹⁰ identified the potential of multiple beneficial measures that might help manage flood risk alongside providing water quality and biodiversity benefits. We are working to implement the ‘Synergies’ report’s recommendations.

5.12 However, with the wealth of activity in this area we feel that new pilots are not necessary. A selection of this activity is outlined below.

Pilot Projects and action on the ground

5.13 A number of multi-objective flood management demonstration schemes have considered how agricultural measures can help manage flood risk. A total of nearly £1 million from Defra’s flood risk management budget was provided in the first phase (2009-2011) to help establish three projects and start work on making the necessary land management changes:

- ‘Slowing the Flow’ in Pickering – led by Forest Research in partnership with others; Defra contributed £247,000.
- The National Trust’s ‘Source to Sea’ Holnicote project in North Somerset; Defra contributed £473,000.
- ‘Making Space for Water’ in the Upper Derwent, Derbyshire, led by the Moors for the Future Project; Defra contributed £240,000.

¹⁰ <https://drive.google.com/folderview?id=0B9V3MFss6gRxT2dmZEUySThQdDQ&usp=sharing>

5.14 The second phase (2011-15), for which the Government is providing over £700,000, aims to secure the desired changes in land use and management, as well as monitor and evaluate the impacts on flood risk and other outcomes.

5.15 The farming sector already does its own work to manage flood risk. For example the NFU coordinated work on the River Perry in North Shropshire, where farmers recently tackled nearly four miles of the watercourse themselves. This helped prevent recurring flooding problems and bring maintenance of the stretch up-to-date. Other examples include the River Hull Integrated Catchment Strategy and wetland and pond creation in the upper catchment of the River Soar.

5.16 The Environment Agency ran a series of river maintenance pilots from October 2013 to March 2015. These pilots investigated how existing rules for getting consent to remove silt could be simplified to enable farmers to act to reduce flood risk while protecting the environment. Lessons learnt from the pilots are informing the development of the new flood defence consenting scheme.

5.17 The Environment Agency will continue to form new partnerships to apply catchment management approaches to build on the successful pilot projects it has launched to date which integrate approaches to manage the risk of flooding to agricultural land.

5.18 The Government recognises and supports the work undertaken by internal drainage boards (IDBs) to manage water levels and reduce flood risk, and has developed a close working relationship with the Association of Drainage Authorities (ADA), which is recognised as the national representative for IDBs. The Government meets with ADA on a regular basis to discuss policy issues and seeks their advice and input on IDB issues.

5.19 All IDBs manage water levels in their drainage districts for land drainage and flood risk management which benefits agricultural land and the environment. A number of IDBs, including Lindsey Marsh, and Witham Fourth, have created two stage channels to increase water storage capacity reducing the impact of intense or prolonged rainfall events expected from climate change.

5.20 Kings Lynn IDB completed a flood storage area at Hardwick Farm. The flood storage area will have a total capacity of around 130 million litres and is designed to allow the IDB to divert water from drains at times of high flows and store it temporarily before discharging excess water once levels in the watercourse are suitable. This will lessen the risk of flooding through Hardwick Industrial Estate, residential areas and to farmland upstream.

5.21 The Middle Level Commissioners are responsible for the drainage system within the central section of the Great Level of The Fens. They have a long term plan to optimise the capture and storage of winter water for use in the summer to top up their drains for environmental and navigation purposes with farmers encouraged to build winter storage reservoirs to increase the volume of agricultural winter storage abstraction licences. They also use an innovative text message service to inform local sluice and pump operators of main river flows which facilitates a moderation of water use to reduce demand.

Investment in flood protection

5.22 £2.3 billion has been planned to be spent on more than 1,500 flood schemes to improve defences through a 6 year programme of work up to 2021. This is forecasted to reduce the flood risk for up to 420,000 acres of agricultural land, avoiding more than £1.5 billion worth of direct economic damages to farmland.

5.23 Previously, the Government funded projects completed during the four years 2011/12 – 2014/15 have provided an improved standard of flood protection to more than 330,000 hectares (approx. 815,000 acres) of farmland.

5.24 The Government is also investing almost £400 million through our Countryside Stewardship scheme to help farmers reduce water pollution through land management and capital agreements. More than half of this is devoted to achieving integrated benefits for water quality, biodiversity and flood management for example through wetland options.

Reducing flood risk by protecting our soils

5.25 Soil can act a buffer for excess water, but when compacted, its capacity to store water is reduced. This can lead to increased surface run-off and potential flooding. Meanwhile, excessive water flow across the soil surface is a major cause of soil erosion. Farmers claiming the Basic Payment Scheme have to comply with soil protection measures under cross compliance. These measures should help to prevent possible downstream impacts, such as surface runoff and silting of rivers, and help alleviate soil erosion caused by exposed soil during winter months.

5.26 The Government's soils research programme includes a number of projects addressing these issues, and investigating the effectiveness of a variety of soil protection measures from a field to landscape scale. We have also funded research investigating the impacts of long-term flooding and waterlogging of soils and their ability to deliver ecosystem services. This research will inform future policy decisions on protecting soils.

Catchment Sensitive Farming

5.27 The Catchment Sensitive Farming (CSF) project jointly led by Natural England, the Environment Agency and Defra gives free advice to farmers in areas where reducing agricultural water pollution is a priority. Although water quality outcomes are the focus of CSF activity, flood risk mitigation is one of the other primary ecosystem services provided by the project. Around one-third of the measures implemented by farmers with CSF support have clear flood risk or soil erosion mitigation benefits.

5.28 Guided by local steering groups comprising farmers and other stakeholders, CSF has helped farmers adapt their cultivation practices, consider water movement across holdings and improve soil husbandry thereby improving their business and minimising runoff and soil erosion.

Catchment Partnerships

5.29 Since 2013, the Environment Agency has established over 100 partnerships across all of England's 87 (+3 cross-border) catchments. These voluntary partnerships are closely supported by the Environment Agency and enable all local stakeholders, including those specified in the ASC's recommendation, to take a catchment wide approach to consider the pressures on the local water environment; agree priorities; and, plan actions that all parties will undertake to tackle the pressures. While the primary focus of these catchment partnerships is to deliver the aims of the EU Water Framework Directive, they have the potential to support integrated measures that deliver flood risk management benefits. Independent evaluation highlighted that over three quarters of catchment partnership hosts saw flood risk management as the main or secondary focus for planning action within the catchment.

Recommendation 23: Publish action plan for sustainable soil management

Recommendation

Defra should take action to deliver its policy aspiration for all soils to be sustainably managed by 2030, publishing an action plan within a year of this report to describe how the goal will be achieved. The action plan should include proposals for establishing a scheme to monitor the uptake of soil conservation measures, with enforcement where soils are not being appropriately managed. The action plan should include specific proposals to reverse the on-going loss of lowland peat soils, and be developed in partnership with the farming sector.

Owner: Defra

Timescale: Summer 2016

5.30 We will be exploring soil protection issues as we develop our approach to the natural environment which is covered in more detail at the start of Chapter 6. We are considering how the development of the framework for the environment could support the implementation of this recommendation but are not able to make any announcements on this at this stage.

5.31 The Government recognises that soil is essential for providing a range of benefits, including food production, but also biodiversity, carbon storage and flood protection. We are working with Research Councils and funding research to improve our understanding of soil condition and resilience.

5.32 New cross-compliance soil rules came into effect on 1st January 2015.¹¹ These set requirements underpinning all basic payments claimed by farmers and land managers under the Common Agricultural

Policy. The soil rules require that claimants: limit erosion, maintain soil cover and protect soil carbon.

5.33 We will be monitoring the implementation of the new soil rules, but will take an outcome based approach rather than monitoring uptake of protection measures. This is a major improvement on the previous system which the ASC refer to, while also reducing administrative burdens on farmers.

Recommendation 24: Publish aggregate pest and disease metrics

Recommendation

Defra should use the information contained within the UK Plant Health Risk Register to publish aggregate metrics that enable the overall risk from pests and diseases to be monitored over time. This should be completed in time to inform the ASC's next progress report in 2017.

Owner: Defra

Timescale: Early 2017

5.34 The UK Plant Health Risk Register¹² records and rates risks to UK crops, trees, gardens and ecosystems from non-native plant pests and pathogens. It forms an agreed, evidence based framework for decisions on priorities for actions by the Government and plant health stakeholders.

5.35 The UK Plant Health Risk Register is published online and available to all: people are entirely free to download the data and aggregate it as they wish. We have no current plans to use the data within the Risk Register to develop and publish indicators. The Risk Register was not developed to report in this way.

¹¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/397046/CCSoilPS_2015_v1_WEB.pdf

¹² <https://secure.fera.defra.gov.uk/phiw/riskRegister/>

5.36 The Forestry Commission currently publish two annual indicators relating to tree health in the wider environment as Corporate Plant Performance Indicators: one on the area of woodland covered by plant health notices and the other on the number of tree pests and diseases established in England over the last 10 years. These indicators can be used to get a general impression of the level of risk from pests and disease over time.

5.37 The Risk Register can be interrogated in many different ways: for example, you can look at number of pests; type of pest; origin and distribution of a pest; the predicted relative impact of a pest with or without mitigating action; and the actions being taken. It is the multiple ways in which the Risk Register can be interrogated that make it valuable, as it can be used by a wide variety of people to answer a broad range of general or specific questions.

5.38 While the Risk Register is not designed to monitor changes arising from climate change and it is not sensitive enough to show the impacts of climate change on the risk from pests and diseases in the short term, any changes observed (positive or negative) would lead to assessments being updated and, where appropriate, the risk rating being adjusted. In the longer term this could be used to try to determine the impact climate change is having: for example, it would be possible to look at whether there is an increase in the number of outbreaks or establishments of pests originating in countries with hotter climates.

5.39 The Risk Register is an important screening tool to help assess threat levels and priority actions for new and revised plant health threats, which are identified through horizon scanning and by interceptions and outbreaks of plant pests and pathogens. By July 2015, there were over 750 entries on the Risk Register with more being added each month.

Recommendation 25: Publish evaluation of Agri-Tech Strategy impact

Recommendation

Defra should publish an initial evaluation of the impact of the Agri-Tech Strategy in time to inform the next NAP in 2018.

Owner: Defra

Timescale: Next NAP report in 2018

5.40 We accept this recommendation. Evaluation of the impact of the Agri-Tech Strategy was built in to the Strategy. In accordance with commitments within the Strategy, Defra set up a project to establish a baseline and advise on how to assess the success against that baseline. The Strategy is a long term one so the majority of results are expected over a 10 year or longer period. However, we would expect there to be some effects detectable by 2018 and some initial evaluation evidence available. The available evidence will inform the development of the National Adaption Programme.

5.41 The UK Strategy for Agricultural Technologies was published in July 2013. The Government is investing £160m to take innovation from the laboratory to the farm and to make the UK a world leader in agricultural technology, innovation and sustainability. Other elements of the plans are looking at promoting trade and investment in agri-tech and skills and training.

Chapter 6: Natural Environment

6.1 The intrinsic value of the natural environment is recognised by most and can justify its protection even without the benefits and services it directly and indirectly provides us with. A strong 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 can improve our mental and physical health.

6.2 Change is an inherent quality of the natural environment and one which cannot be avoided. However, the pace of change posed by climate change places unprecedented pressures on our natural environment and many of the services we take for granted may be diminished.

Policy Approach

6.3 The first NAP report captured a range of activities both to increase the resilience of our natural environment and to prepare to accommodate the changes that will inevitably occur.

6.4 The next NAP report will continue to increase the resilience of our natural environment, prepare both it and us for the changes that are to come, and value the benefits and solutions it can provide for adaptation more widely.

6.5 Our environmental assets – land, sea, water, air and wildlife – underpin our prosperity and wellbeing. The Government has committed to extend the life of the Natural Capital Committee out until at least the end of this Parliament and is developing refreshed Terms of Reference that will inform the next phase of the Committee's work. The Government will be working with the Committee to develop a framework for action on the environment that makes use of data, technology, valuing nature and market mechanisms among the means to achieve our ambitions. We will also use data and technology to establish a consistent understanding of the benefits provided by the environment so its value is fully recognised, and businesses and communities invest in UK environmental assets. Smarter use of technologies such as satellite monitoring and precision farming will allow us to address environmental issues more effectively than ever before, and offer British industries the chance to lead the world.

Response to recommendations

Recommendation 26: Publish action plan to deliver key Biodiversity 2020 goals

Recommendation

Defra and Natural England should continue to take action to deliver all of the outcomes in the England Biodiversity 2020 strategy and publish within a year of this report a plan setting out how they intend to deliver key goals important for adaptation, namely:

- improving the condition of priority habitats and protected sites (Outcome 1A);
- increasing the extent of priority habitats by 200,000 hectares (Outcome 1B); and
- ensuring that 15% of degraded ecosystems important for climate change adaptation and mitigation are being restored (Outcome 1D).

The action plan should also provide clarity on the interpretation of 'favourable ecological condition' in the context of climate change.

Owner: Defra/Natural England

Timescale: Summer 2016

6.6 As noted above, our framework for the environment will drive protection and enhancement of England's environmental assets, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.

Biodiversity 2020 Action Plan

6.7 The Terrestrial Biodiversity Group oversees delivery of Biodiversity 2020 outcomes for protected sites, habitats and ecosystems and species. The Group includes members from conservation NGOs, Defra,

Natural England, the Environment Agency, the Forestry Commission, the protected landscapes, groups representing farming and landowners, and local government.

6.8 The Group has already produced an action plan for the delivery of Biodiversity 2020 outcomes, which the ASC call for in this recommendation. It is for the Group to decide how, when and where to publish this action plan. Natural England chairs the Group but it is not for Natural England or the Government to decide to publish the plan without first gaining wider endorsement from other member organisations. Natural England will propose to the Group that the plan be published and suggest that the Group produce its own separate response to this recommendation.

Wider success

6.9 We have already made progress in protecting and improving England's biodiversity through the implementation of Biodiversity 2020.

- By 31st of March 2015 Natural England reached 95.98% of Sites of Special Scientific Interest (SSSIs) in favourable or recovering condition with 37.62% of SSSIs in favourable condition.
- 61% of priority habitats are in favourable or recovering condition as a result of Higher Level Stewardship (HLS) agreements under the Rural Development Programme, Forestry Grants, work on SSSIs and other activity from partner organisations.
- 67,000 ha have been placed under management for creation of priority habitat since the start of 2011 through HLS, green infrastructure and Forestry Commission grants.
- A further 38,000 ha is being restored from a degraded state to priority habitat

condition through HLS. This is in addition to any restoration on the SSSIs.

6.10 Natural England will continue to work to improve the status of England's biodiversity. The organisation is committed to working to improve the condition of the SSSIs, get the areas of priority habitat managed appropriately, create new areas of habitat to support ecological networks, improve the status of our wildlife and restore the degraded ecosystems. The first report on Outcome 1D of Biodiversity 2020 will be produced by March 2016.

6.11 Regarding the ASC's comments on the interpretation of "favourable ecological condition", Natural England is working on the definitions of favourable condition for the series of SSSIs. An aspect of this work is to take better account of the context of climate change. This is a complex issue and Natural England will produce a paper on this during the next year.

Recommendation 27: Publish action plan on restoration of degraded upland peat habitats

Recommendation

Natural England, in partnership with the Upland Stakeholder Forum, should take further action to deliver the widespread restoration of degraded upland peat habitats. An action plan should be published within a year of this report that includes: (a) a programme for reviewing consents for burning on protected sites; and (b) an assessment of the extent to which agri-environment schemes are being used to fund damaging practices on peatland habitats.

Owner: Natural England

Timescale: Summer 2016

6.12 We are already undertaking a series of measures to protect our upland peatlands. These include: the pilot Peatland Code, negotiating the implementation of management objectives in designated areas for peatland restoration through agri-environment schemes, and over £3m of investment into peat related research between 2010 and 2015. The exploration of soil protection issues during the development of our approach to the natural environment will take this recommendation into account.

6.13 Natural England has been working with the Uplands Stakeholder Forum and its subgroup the 'Best Practice Burning Group' (now replaced by the broader focused Uplands Management Group) on improving the condition of blanket bogs. The group adopted an outcomes focused approach and identified 5 core objectives to improve health and functionality of deep peat on moorland so it:

- Delivers good water quality including associated biodiversity and drinking water;
- Keeps stored carbon locked up and locks up more through peat creation;
- Supports characteristic blanket bog plant communities;
- Supports sustainable agricultural grazing; and
- Supports sustainable grouse shooting.

6.14 A Blanket Bog Restoration Strategy developed by Natural England was produced in March this year and has since been endorsed by the Uplands Stakeholder Forum and agreed by NE's Board. This strategy recognises the goals of the landowner and other stakeholders alongside the potential to deliver ecosystem services and the need to meet conservation objectives.

6.15 With regards to the ASC's concerns around consents for burning on protected sites, Natural England has already provided to the EU an outline timetable for reviewing burning consents as part of its wider statutory programme to review all consents on Natura 2000 sites. Any required amendments to consents will be implemented within the outcomes approach to planning with landowners as above.

6.16 With regards to the ASC's concerns around funding damaging practices, a payment has been used on blanket bog to secure changes, usually extensions to burning rotations and management which delivers environmental gains. It is not used as a payment to support ongoing damaging practice. NE will be producing and publishing formal guidance and information as part of ongoing work which is likely to address the Committee's comments.

6.17 Agri-environment schemes are not being used to fund damaging activity; they are used to secure improved management. As agreements are reviewed and replaced, the required management will be updated in light of any new evidence and understanding of the relevant habitats' condition. Any new agreements will reflect the required actions and measures for progress to favourable condition on designated sites.

6.18 The review of consents which is already underway, together with the broader restoration strategy, will help us address the action plan recommended by the ASC.

Recommendation 28: Publish report on steps to deliver Restoring Sustainable Abstraction programme and press ahead with abstraction reform

Recommendation

The Environment Agency, Defra and water companies should continue to take action to ensure that water bodies are managed in ways that will increase resilience to the changes in water availability, quality and temperature expected with climate change. To deliver this (a) the Environment Agency should publish within a year of this report the steps it will take to ensure full delivery of the Restoring Sustainable Abstraction programme by 2020, and (b) Defra should press ahead with reforms to the abstraction regime early in this Parliament.

Owner: Environment Agency/Defra

Timescale: Summer 2016

6.19 We support the recommendation to publish details of the steps being taken to deliver by 2020 under the Restoring Sustainable Abstraction programme. The Environment Agency will publish this information by summer 2016.

6.20 The Environment Agency and Natural Resources Wales have identified a number of abstractions under the current water abstraction licensing system that are having an impact on the environment or could potentially damage the environment. They are working with water companies and other abstractors such as farmers to review, vary or revoke where necessary, as many of these abstractions as possible, prior to implementation of any broader reform to the abstraction management system.

6.21 The Environment Agency has already made significant progress addressing unsustainable abstraction through the Restoring Sustainable Abstraction programme. To further limit environmental

damage, the Agency encourages fast track action through voluntary change for unsustainable abstractions where the licence holder will immediately see a reduced abstraction charge if the licensed volume is reduced.

6.22 The Government is committed to the reform of the current abstraction licensing system. We want to reform how water abstraction is regulated to create a better and fairer approach that will reduce water waste, cut red tape and protect the environment. We are finalising our policy approach in order to implement reform by the early 2020s.

Recommendation 29: Establish Countryside Stewardship monitoring scheme

Recommendation

Natural England should establish within a year of this report a monitoring scheme to assess the extent to which the new Countryside Stewardship scheme will help to deliver coherent ecological networks, and more broadly reduce the vulnerability of farmland wildlife to environmental pressures, including climate change.

Owner: Natural England

Timescale: Summer 2016

6.23 Countryside Stewardship delivers complementary benefits for soil, water quality, flooding and biodiversity, with climate change as an overarching objective. Monitoring and evaluation has been, and continues to be, a core element of agri-environment and forestry scheme delivery, gathering evidence of effectiveness against environmental objectives and scheme design

6.24 This recommendation is already being addressed through an existing programme of agri-environment scheme monitoring delivered by Natural England on behalf of Defra. Part of this is focused on landscape

scale considerations beyond individual agreements, including the contribution of the scheme to ecological networks.

6.25 Natural England is currently leading a project to evaluate the extent to which the Environmental Stewardship Scheme has contributed to climate change adaptation, develop an approach to monitoring this and make recommendations about future monitoring of Countryside Stewardship. This project will report within the next year and we will then consider next steps.

6.26 Together with other studies this will help us to assess the contribution of Countryside Stewardship to landscape connectivity and ecological networks. This work will help to evaluate the impact of the scheme in the context of improved resilience of farmland biodiversity to environmental pressures.

Recommendation 30: Implement programme to ensure no net loss of internationally protected coastal habitats

Recommendation

The Environment Agency should continue to take action to ensure there is no net loss of internationally protected coastal habitats by 2025 as a result of coastal squeeze and publish within a year of this report a programme of habitat creation projects they have identified to deliver this goal. The Agency should also report on the progress being made with the implementation of the habitat creation programme in time to inform the ASC's next statutory report in June 2017.

Owner: Environment Agency

Timescale: Summer 2016

6.27 We agree with this recommendation. The Environment Agency are working with the Government on the provision of figures for reporting a portfolio of habitat creation projects.

6.28 There are a total of 45 possible flood defence schemes that might create up to 2007ha of intertidal habitat. This includes schemes currently scheduled for 2025/26 and beyond. Of the 2007ha, 953ha is planned to be created in the six years 2015/16 to 2020/21. The capital programme (including environmental outcomes) is currently under review and being refreshed, so these figures may change.

Chapter 7: Business

7.1 Climate change will increase the risk of financial loss and damage to UK businesses through damage to infrastructure, operations, assets and the disruption of supply chains at both the national and international level. A changing climate also offers a wide range of opportunities for new products and services. Businesses that are able to protect themselves from the risks and, where appropriate, seize the opportunities will be more competitive in the long run.

Policy Approach

7.2 Increasing businesses resilience to climate change supports the Government objectives by safeguarding improvements in growth and productivity. However, while many businesses are demonstrating resilience to a changing climate, the level of action taken will depend on an individual business' appetite for risk. Meanwhile, the new market opportunities presented by climate change can create jobs and increase overseas trade. The Government's role therefore is to encourage businesses to increase resilience and maximise opportunities from a changing climate.

7.3 The Climate Ready Support Service, provided by the Environment Agency, supports and encourages businesses to increase their resilience and take advantage of emerging opportunities. In 2014/15 the service took a specific focus on the food and drink sector, working with a number of major organisations such as Nestle, Greencore, ASDA and M&S and produced tools and guidance to support all businesses,

particularly SMEs through the FSB. The Climate Ready Support Service has also been supporting businesses through feeding into the development of resilience qualifications and the development of business standards, such as the updated ISO14001, the new British Standard on Organizational Resilience BS65000 and Smart Guide,¹³ (which supports the use of a business continuity management system, with a focus on the current ISO standard, in adapting to climate change).

Response to recommendations

Recommendation 31: Evaluate impact of Climate Ready Support Service tools and guidance

Recommendation

The Environment Agency should evaluate the impact of the adaptation tools and guidance it has published, including the Climate Ready support service, in time for the ASC's next progress report in 2017. The results of this should be used to identify to what extent businesses at most risk are using the tools and whether there is a need to amend them to better reflect user needs, particularly for SMEs.

Owner: Environment Agency

Timescale: Early 2017

¹³ <http://www.bsigroup.com/LocalFiles/en-GB/iso-22301/resources/BSI-sustainability-report-adapting-to-climate-change-using-your-business-continuity-management-system-UK-EN.pdf>

7.4 The Government and the Environment Agency agree with this recommendation. The Climate Ready Team currently collects metrics on the dissemination of its main adaptation tools and guidance. The team is working with climate change teams in the met office and academia, and with climate change teams in the UK Government administrations, to develop a clear approach to measuring the uptake and implementation of adaptation tools and guidance. This will focus on measuring effectiveness at the Climate Ready programme level, supplemented where possible, by evaluation at the individual project level.

Recommendation 32: Evaluate ‘Repair and Renew’ grant scheme

Recommendation

Defra should evaluate the ‘Repair and Renew’ grant scheme within a year of this report and develop new policies in time for the next NAP due in 2018, to encourage businesses in high risk areas to improve their resilience to flooding and fit property-level flood protection measures where appropriate.

Owner: Defra

Timescale: Next NAP report in 2018

7.5 The Government agrees with the principle of the recommendation and are meeting it through our ongoing work. Business impacts of flooding are not confined to the damage caused by flood water and these can have longer term impacts on the local economy. We recognize the need to do more work in this area. However, a good start has been made. For example the Environment Agency Climate Ready Support Service has worked with businesses, including SMEs, through Business in the Community and Lloyds Bank advisors to encourage businesses to take action to increase their flood resilience. In addition,

currently 56,854 businesses in England and Wales are signed up to Flood Warnings Direct. The Repair and Renew Grant was a one off scheme offered in response to the extreme weather of 2013/14. As with all good policy making, the Government is learning from the scheme by analysing both the outcomes and our routine engagement with those that were involved with the delivery of the scheme. This learning is being applied to all relevant future policy including that on property level protection, market stimulation and accreditation, and ownership and responsibility for flood risk management at an individual property level. This will also feed in to any work undertaken on recovery packages and support to communities in the event of flooding.

Property Level Protection

7.6 We are already undertaking a range of activities to encourage take-up of property-level protection, including conducting research into low-cost resilience measures, planning to roll out the learning from the Flood Resilience Community Pathfinder projects (several of which included property-level protection measures) and identifying what steps would be needed to develop a cohort of independent surveyors to support householders to make informed choices.

Recommendation 33: Assess case for listed companies adaptation reporting

Recommendation

The Department for Business, Innovation and Skills should assess the case for regulatory and non-regulatory measures and take action to encourage all listed companies to report on their exposure to risks from climate change, and how those risks are being managed. This assessment should be completed in time to inform the next NAP due in 2018.

Owner: Department for Business, Innovation & Skills

Timescale: Next NAP report in 2018

7.7 We thank the committee for their recommendation. However, we would be cautious about promoting climate change above other risks faced by listed companies. The current reporting framework and an upcoming EU Directive on non-financial reporting require companies to report material risks faced by the business.

7.8 There are a number of legislative requirements for businesses to report on the risks they face. The current UK narrative reporting framework includes a requirement for companies to disclose the principal risks and uncertainties facing the company. If the business is a listed company, it must include the main trends and factors likely to affect the future development, performance and position of the company's business.

7.9 Meanwhile, the transposition of the EU "non-financial reporting directive" (2014/95/EU) will also require companies to disclose principle risks related to environmental matters linked to the company's operations. Included in this disclosure should be how the company manages those risks. These mechanisms would allow sufficient flexibility to report company specific information, including the principle risks faced by the company.

7.10 It is for the investors, the ultimate owners of the business, to hold directors to account for their management of the risks to the company, including those presented from climate change.

Recommendation 34: Undertake research to better understand climate change risks to the finance sector

Recommendation

The Bank of England should undertake research to better understand the potential systemic risks from climate change to the finance sector, building on the forthcoming report under the Adaptation Reporting Power by the Prudential Regulatory Authority. The research should be completed in time to inform the next NAP, due in 2018. The third round of ARP reporting should be extended to cover all areas of the finance sector.

Owner: Bank of England

Timescale: Next NAP report in 2018

7.11 The Prudential Regulation Authority of the Bank of England has provided the following response to this recommendation:

7.12 On 29th September 2015, the Prudential Regulation Authority (PRA) submitted its Climate Change Adaptation Report to Defra. The report focuses on the impact of climate change on the UK insurance sector, and is publicly available on the PRA's website. The Bank of England and PRA will continue to undertake further analysis and research on the potential systemic risks from climate change to the financial sector, partly through the Bank's research agenda, as published in February 2015. This work is currently being scoped, and the initial phase will be completed in time to inform the next National Adaptation Programme, due in 2018.

7.13 From the Government's perspective, inclusion of new reporting organisations during the next round of reporting will be subject to a full public consultation as required by the Climate Change Act.

Recommendation 35: Develop options to encourage industry water efficiency

Recommendation

Defra should develop options in time for the next NAP, due in 2018, to encourage industry to improve water efficiency particularly in water stressed areas. This will help companies to make the transition to the likelihood of tighter restrictions and higher prices for water use during times of water scarcity, under abstraction reform.

Owner: Defra

Timescale: Next NAP report in 2018

7.14 Population growth and climate change mean that there will be less water available in the future for abstraction and the environment. Abstraction reform itself will not drive increased scarcity or higher prices but water scarcity could. Abstraction reform would put in place a system that allows abstractors to make better use of water when it is scarce by better managing the water that is available in water-stressed areas and facilitating trading between abstractors where there is a demand.

7.15 The Government already has a number of initiatives in place which will allow industry to improve its water efficiency. The next NAP report will be informed by these initiatives. For example, the Enhanced Capital Allowance Scheme for Water provides tax relief for businesses who purchase equipment and machinery that meets published water saving criteria. Further opportunities for improved water efficiency will be provided through the opening up of the retail market. The Water Act 2014

introduced reforms that will allow all business customers to choose alternative water supply and sewerage service providers from April 2017. These reforms will stimulate markets for water efficiency goods and services.

7.16 Practical support for water efficiency is already available from water companies and other sources through water audits, tool kits and on line resources. In addition, the recently established UK Water Partnership aims to foster cross-sector collaboration to promote innovative technology and to commission and apply high quality research that will help drive efficiency.

Chapter 8: Local Government

8.1 The impacts of climate change and severe weather conditions will vary from location to location and are thus best managed at the local level. There is a clear role for Local Government in taking the lead on local resilience measures.

Policy Approach

8.2 The Government's approach to the local government should be considered in the context of the Localism Act 2011 and the Cities and Local Government Devolution Bill 2015-16 which gives local government new functions, freedoms, and flexibilities as well as responsibilities and governance.

Response to recommendations

8.3 The Government welcomes the observation that understanding, knowledge and application of adaptation by local authorities is improving, and that most authorities are undertaking climate change risk assessments and helping to reduce the climate change risks with various activities.

8.4 The Government agrees that local governments have a vital role to play in adaptation, and welcome the ASC's recognition of the work of the Local Adaptation Advisory Panel and Local Government Association's Climate Local initiative.

Recommendation 36: Introduce cost-effective and proportionate assessment of local authority adaptation progress

Recommendation

Defra and DCLG should introduce a cost effective and proportionate way of assessing the progress being made by local authorities in taking action to reduce the vulnerability of their communities to the impacts of extreme weather. This could be by including local authorities in the next round of the Adaptation Reporting Power.

Owner: Defra/ DCLG

Timescale: Summer 2016

8.5 The Government considers that responsibility lies primarily with local authorities to be accountable to their electorate on the steps they are taking to reduce local vulnerability to the impacts of extreme weather. In doing so, they can use the communications tools at their disposal to inform people what they are doing. The Government nonetheless recognises the importance of keeping an overview of local action. We consider that the least burdensome way of doing so would be to use existing methods of data collection which could be used to take a snapshot of a sample of authorities' risk assessments and collect data on incidents and responses in real time. For instance, Northamptonshire County Council's flood tool kit helps homeowners, businesses, landowners and communities to assess flood risk and

provides advice on how to deal with it. In addition, Kent County Council has produced a Severe Weather Impact Monitoring System. The council collects data about how the services provided by its partners, including Kent Police, the district and borough councils and the Environment Agency, are affected during severe weather events. This allows it to understand the impact of these weather events and to plan better for the future.

8.6 It is also necessary to consider the burdens that a reporting requirement would place on local authorities, such as through the Adaptation Reporting Power. Inclusion of new reporting organisations during the next round of reporting will be subject to a full public consultation as required by the Climate Change Act. Furthermore, in line with the localism agenda it is for local authorities to take a view on the progress they are making in increasing resilience and reducing their communities' vulnerability to the impacts of extreme weather.

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