



Adaptation preparedness scoreboard:

Draft country fiche for United Kingdom

Disclaimer

This draft country fiche was prepared in the context of the implementation of the EU's Strategy for Adaptation to Climate Change (EUAS). The indicators were developed and agreed with experts from the Member States (MS). This draft version of the fiche is published as background information to the public stakeholder consultation about the evaluation of the EUAS running from early December 2017 to early March 2018. It constitutes work in progress, a particular stage of information collection and dialogue between the Commission and the Member States. It presents a snapshot of the status in the country as of September or October 2017. The fiches are planned to be finalised and published as an annex to the strategy's evaluation report in the fourth quarter of 2018, before which they will be further updated and modified. Should you have any specific comments on the draft fiche, please send it to the mailbox CLIMA-CLIMATE-CHANGE-ADAPTATION@ec.europa.eu

Please note that the assessments (yes/no/in progress) need to be read in conjunction with the narrative that accompanies them. They assess the state of play *within* each country. While all effort has been made to ensure the coherence across fiches in the assessment of the same indicator, it should not be directly compared across the MS. Two countries with a "yes" on the same indicator could have a different national situation leading to that assessment. For a more detailed explanation of what each indicator means and how its value is determined please refer to the description of the scoreboard, a document published alongside the country fiches.

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POLICY FRAMEWORK

Adaptation strategies

A1. National adaptation strategy

In the United Kingdom, a national adaptation strategy for building the UK's ability to adapt to climate change is framed by the Climate Change Act¹, which came into force in 2008.

The Act establishes: a climate change risk assessment (CCRA) to be carried out every five years, a national adaptation programme (NAP) to address the priority risks identified in the CCRA, a reporting mandate, and an independent Adaptation Sub-Committee (ASC) of the Climate Change Committee (CCC), to provide advice and assistance in relation to the implementation of the Act.

A2. Adaptation strategies adopted at subnational levels

The Climate Change (Scotland) Act 2009² requires the Scottish Government to develop an Adaptation Programme to address the risks identified for Scotland in the CCRA.

The Climate Change Act requires Welsh Ministers to lay from time to time a report before the National Assembly for Wales on the objectives, actions and future priorities of Welsh

¹ http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf

² <http://www.gov.scot/Topics/Environment/climatechange/scotlands-action/climatechangeact>

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Ministers around the impact of climate change. Wales has recently strengthened the legislative requirements to build resilience in Wales to the impacts of climate change through the Wellbeing of Future Generations (Wales) Act 2015 and Environment (Wales) Act 2016³.

The Climate Change Act requires Northern Ireland Departments to prepare an adaptation programme to address the climate change risks to Northern Ireland, as soon as reasonably practicable after the laying before Parliament of the CCRA, and to review them every five years. Reports on the adaptation programme and subsequent progress are required to be made to the Northern Ireland Assembly.

Adaptation action plans

B1. National adaptation plan

UK adaptation actions are framed by the UK government NAP, plus the adaptation work carried out by the devolved administrations (DAs) of Scotland, Wales and Northern Ireland for devolved policy issues: Scottish Climate Change Adaptation Programme, Northern Ireland Climate Change Adaptation Programme, Climate Change Strategy for Wales and the Welsh government's Sectoral Adaptation Plans.

In July 2013 the UK government published the first national adaptation programme (NAP)⁴. The NAP sets out actions and commitments from the UK government, industry, local authorities and civil society to build up UK resilience to climate change. The NAP is primarily for England, but also covers reserved, excepted and non-devolved matters in the full UK territory, as required by the Climate Change Act (2008). It covers the implementation of commitments made in the Climate Change Act and other legislation. The second NAP is expected in 2018.

The NAP focuses on the highest order risks identified in the first CCRA (2012)⁵ and those highlighted in subsequent consultation with Defra partners. Prioritisation in the first NAP was guided by the magnitude, confidence, and urgency scores assigned during the analysis which underpinned the CCRA.

B2. Adaptation plans adopted at sub-national level

B3. Sectoral adaptation plans

The 2013 NAP is split between 6 thematic chapters on the Built Environment, Infrastructure, Healthy and Resilient Communities, Agriculture and Forestry, the Natural Environment and Business. There is a seventh cross cutting chapter on Local Government while considerations such as flooding and water scarcity are considered throughout the various chapters. Policies, initiatives and actions to support adaptation for each theme are outlined in each NAP chapter.

³ <http://gov.wales/topics/environmentcountryside/climatechange/climate-change-future-generations-act/?lang=en>

⁴ Defra 2013. The National Adaptation Programme. Making the country resilient to a changing climate. See: <https://www.gov.uk/government/publications/adapting-to-climate-change-national-adaptation-programme>

⁵ <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-government-report>

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The individual Devolved Administrations are developing their own programmes and the UK government is working with them to share areas of common interest, to ensure a consistent approach in the shape and focus of all the programmes:

Scotland: The first Scottish Climate Change Adaptation Programme (Climate Ready Scotland, SCCAP)⁶ was adopted in May 2014, to address the risks identified for Scotland in the CCRA. The SCCAP comprises three themes:

- Climate Ready Natural Environment - a Scotland with a productive, healthy and diverse natural environment which is able to adapt to change
- Climate Ready Buildings and Infrastructure Networks – a Scotland with well-managed, resilient infrastructure and buildings providing access to necessary amenities and services; and
- Climate Ready Society – a Scotland with strong, healthy resilient communities which are well informed and prepared for a changing climate.

Wales: The Climate Change Strategy for Wales (2010)⁷ sets out an adaptation framework; an Adaptation Delivery Plan (2011)⁸ describes the actions that will fulfil the objectives of the Adaptation Framework. Within its framework, the Welsh Government is developing Sectoral Adaptation Plans across 5 sectors: Natural Environment, Infrastructure, Communities, Business and Tourism and Health. As of June 2017, workshops and consultations began in 2015, and Health is the only completed sector action plan. In light of the new legislative context in Wales, and new evidence on risks to sectors in Wales identified by the UK Committee on Climate Change, the Welsh Government is developing a new adaptation plan for Wales.

Northern Ireland: The Northern Ireland Climate Change Adaptation Programme (NICCAP)⁹, laid in the Northern Ireland Assembly in January 2014, sets out the Government actions to address the risks and opportunities identified in the UK's Climate Change Risk Assessment (CCRA). It provides government action in four areas: flooding, water, natural environment, agriculture and forestry. It is divided into two parts: 'Setting the Scene', and 'The Adaptation Programme'. The latter sets out the strategic direction and objectives, and establishes a range of adaptation activities and actions (policies and proposals) for the next five years.

In addition, 7 UK cities¹⁰ are now signatories to the EU Covenant of Mayors for Climate and Energy for the adaptation commitment. Of these seven cities, all except Greater Manchester have submitted adaptation action plans and are now in the monitoring phase.

⁶ <http://www.gov.scot/Publications/2014/05/4669>

⁷ <http://gov.wales/docs/desh/publications/101006ccstratfinalen.pdf>

⁸ <http://gov.wales/docs/desh/publications/101006ccstratdeliveryadaptationen.pdf>

⁹ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Northern%20Ireland%20Climate%20Change%20Adaptation%20Programme.pdf>

¹⁰ As of 14th June 2017: Aberdeen City, Birmingham, Edinburgh, Glasgow, Greater Manchester, Leicester, Newcastle upon Tyne, Stirling. See:

http://www.covenantofmayors.eu/about/signatories_en.html?q=Search+for+a+Signatory...&country_search=gb&population=&date_of_adhesion=&status=&commitments2=1

SCOREBOARD

Step A: preparing the ground for adaptation

1. Coordination structure

1a. A central administration body officially in charge of adaptation policy making

Yes / No

Responsibility for climate change adaptation is split between the four countries of the United Kingdom, with national governments in Northern Ireland, Wales and Scotland responsible for adaptation in all devolved policy areas. Her Majesty's Government (HMG) is responsible for adaptation in England and reserved matters for the UK. In some initiatives, a UK-wide approach has been adopted.

England & reserved matters: Whilst adaptation is embedded within key policy areas across UK government, the Department for Environment, Food and Rural Affairs (Defra) co-ordinates the UK government's work on adaptation in England, and throughout the UK on a number of reserved matters including cross-cutting action required under the Act.¹¹ Some reserved matters, such as defence, are primarily addressed independently of this coordination.

Scotland

Lead devolved responsibility for climate change policy in Scotland rests with the Minister for Environment, Climate Change and Land Reform¹². A Cabinet sub-committee on climate change¹³ ensures that delivery is coordinated across portfolios and that climate change considerations are reflected at the very highest level of the Scottish Government.

Wales

Responsibility for ensuring adaptation and resilience across Wales in areas of devolved responsibility sits with Welsh Ministers. A cross-Government response to climate adaptation is co-ordinated by the Department for Environment and Rural Affairs. The Well-being of Future Generations Act¹⁴ has established a Future Generations Commissioner¹⁵ for Wales' who has a specific remit around providing advice or assistance on climate change to public bodies, including the Welsh Government.

Northern Ireland

The Climate Change Unit in the Department of Agriculture, Environment and Rural Affairs¹⁶ is responsible for the co-ordination of the cross Departmental work on adaptation. It leads on development, implementation and monitoring of the NICCAP¹⁷, though responsibility for action on the Northern Ireland climate change risks is shared with all government departments.

¹¹ Reserved matters are: [the constitution, international relations and defence, national security, nationality and immigration, nuclear energy, broadcasting, the UK tax system, employment and social security \(except Northern Ireland\)](#)

¹² <https://beta.gov.scot/about/who-runs-government/cabinet-and-ministers/cabinet-secretary-environment-climate-change-land-reform/>

¹³ <http://www.parliament.scot/parliamentarybusiness/CurrentCommittees/environment-committee.aspx>

¹⁴ <http://gov.wales/topics/environmentcountryside/climatechange/climate-change-future-generations-act/?lang=en>

¹⁵ <https://futuregenerations.wales/>

¹⁶ <https://www.daera-ni.gov.uk/contacts/climate-change-unit>

¹⁷ <https://www.daera-ni.gov.uk/publications/northern-ireland-climate-change-adaptation-programme>

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1b. Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities

Yes / In progress / No

Adaptation is embedded within key policy areas across the UK governments of England, Wales, Scotland and Northern Ireland. The NAP sets out the roles of the different Departments of Government, including their delivery bodies and partners. The Domestic Adaptation Board, chaired by Defra, is the horizontal coordination body. It oversees cross-Government action and has members from most government departments, the Devolved Administrations and the Environment Agency (EA). The overarching role of the DAB is to provide strategic, high level input and direction to the statutory programme of work delivering the UK's 5 yearly Climate Change Risk Assessment (CCRA) and National Adaptation Programme (NAP). Specifically this means:

- Providing senior-level leadership to the statutory CCRA and NAP, helping to develop and maintain a clear vision and direction;
- Highlighting upcoming policies in their departments which can support adaptation outcomes and capacity building in key sectors;
- Promoting effective collaboration across government departments and key agencies and managing interdependencies with other issues such as climate change mitigation and resilience agendas;
- Monitoring overall progress with the CCRA and NAP. Assist in identifying risks and removing barriers and do horizon scanning;
- Monitoring overall progress on adaptation delivery and identifying gaps or opportunities.
- Considering key sources of challenge and insight (e.g. outputs from key research projects such as the Economics of Climate Resilience and the latest reports and advice from the ASC).

For descriptions of horizontal coordination in Devolved Administrations, see indicator 1a.

1c. Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.

Yes / **In progress** / No

England: The Local Adaptation Advisory Panel for England, established by Defra in 2011, provides a forum to champion adaptation activity across local government, identifying best practice for adaptation at the local level. Although the LAAP is not comprehensively representative of the views of all Local Government, it was instrumental in providing council views on the NAP prior to it being published. The NAP contains a cross-cutting chapter that focuses on Local Government and contains a 'Cities Commitment' from the 9 largest cities across England.¹⁸ The LAAP operates on an ad hoc basis and maintains an online knowledge hub¹⁹,

¹⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263042/DOC031213-03122013115022.pdf

¹⁹ <https://khub.net/web/laapcommunity>

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Scotland: No clear information could be found to show vertical coordination exists formally. The Convention of Scottish Local Authorities (COSLA)²⁰ acts as the representative voice of Scottish Local Government at national and international level, and has an environment and economy team responsible for a wide range of policy and council services, including climate change. COSLA contributed to the European Commission consultation on the Preparation of the EU Adaptation Strategy²¹.

Wales:

The Well-being of Future Generations Act established Public Service Boards (PSBs)²² in Wales to replace the voluntary Local Service Boards in each local authority area. Each board is required to assess the state of economic, social, environmental and cultural well-being in its area and set objectives that are designed to maximise the PSBs contribution to the well-being goals²³.

The PSBs are required to consider climate change impacts in their well-being assessments. Additionally, PSBs must take account of future trends in climate change, alongside other trends set out in the annually updated Future Trends Report²⁴, in the preparation of local well-being plans.

The Statutory Members of each PSB are:

- The local authority
- The Local Health Board
- The Fire and Rescue Authority
- Natural Resources Wales

In addition to the statutory members each PSB will invite the following people to participate:

- Welsh Ministers
- Chief Constables
- The police and crime commissioner
- Certain Probation Services
- At least one body representing relevant voluntary organisations

PSBs will also be able to invite other public service organisations to participate.

The Adaptation Framework established support mechanisms to work with local businesses and communities. Local authorities, Local Service Boards, Spatial Plan Area Groups and the Climate Change Commission for Wales are central to helping their local stakeholders adapt to climate change.

Northern Ireland: While the Climate Change Unit in the Department of Agriculture, Environment and Rural Affairs is responsible for the co-ordination of the cross Departmental work on adaptation, it is not clear whether a vertical coordination mechanism exists within Northern Ireland.

Climate UK²⁵, until the end of 2016, operated for 5 years as a sub-national network of climate change partnerships to support local organisations to manage their climate risks

²⁰ <http://www.cosla.gov.uk/about/how-we-work/environment-and-economy>

²¹ http://www.cosla.gov.uk/sites/default/files/documents/eu_adaptation_strategy_-_cosla_consultation_reponse.pdf

²² <http://gov.wales/topics/improving-services/public-services-boards/?lang=en>

²³ <http://gov.wales/docs/dsjlg/publications/150623-guide-to-the-fg-act-en.pdf>

²⁴ <http://gov.wales/docs/statistics/2017/170505-future-trends-report-2017-en.pdf>

²⁵ <http://climateuk.net/>

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and respond to opportunities. The network covered England, Wales, Scotland and Northern Ireland. It shared knowledge and lessons learned about tackling the consequences of climate change in the UK. Although Climate UK Community Interest Company (CIC) will cease operations, the informal Climate UK network, which existed for more than 10 years prior to the establishment of the CIC, will continue. Other local partnerships and networks have been brought into the fold, and opportunities for knowledge sharing and collaboration continue.

2. Stakeholders' involvement in policy development

2a. A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies

Yes / No

The first NAP was drawn up by the government, industry and other non-government organisations working together. The UK Government, in developing the first NAP, ran a series of workshops with around 700 organisations and held 2 informal consultations. Businesses, local councils and community groups were involved. These helped identify the most important areas for action, and allowed stakeholders from across the sectors concerned to comment on the draft objectives of the NAP report.

The first UK NAP identified the many stakeholders that need to be involved in developing the national adaptation response. It also identified actions and their owners. Key stakeholder engagement remains a crucial component of the policy approach in the ongoing development of the second NAP.

England and Reserved Matters

The NAP was developed in close collaboration with around 270 stakeholder organisations including NGOs, civil society and private sector.

Scotland

A Key Stakeholder Group, representing social, economic and environmental interest groups are involved throughout the planning process, and in particular the Sector Action Plans developed under the Climate Change Adaptation Framework and the Climate Change Delivery Board²⁶.

Adaptation Scotland continues to support organisations, business and communities to adapt to the impacts of climate change through connecting science and practice and building strong partnerships for planning and action.²⁷

Wales

A number of stakeholder groups were in the preparation of the Climate Change Strategy. There will be an internal cross-Government group and external reference group established in the preparation of the new adaptation plan for Wales to ensure interested groups are represented during its development.

Northern Ireland

²⁶ <http://www.gov.scot/Publications/2009/12/08130513/5>

²⁷ <http://www.gov.scot/Publications/2017/05/3941/6>

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Climate NI²⁸ is a partnership of external and government stakeholders from a range of key sectors who provide advice and support to Government with the aim of increasing the understanding of the impacts of climate change, sharing best practice and promoting action to address the impacts of climate change.

2b. Transboundary cooperation is planned to address common challenges with relevant countries

Yes / No

The UK Government and the Devolved Administrations for Scotland, Wales and Northern Ireland work together to co-ordinate cross-boundary adaptation issues and areas of common interest within the UK. Each devolved administration has developed its own adaptation programme.

The NAP and the Climate Change Act do not contain any elements supporting transboundary cooperation with other neighbouring countries (e.g. Ireland).

The Natural Environment Research Council (NERC) is currently developing an Environmental Evidence for the Future (EEF) initiative which seeks to bring together future challenges in environmental policy from across the UK nations. Climate and energy is one of the programme themes, and may potentially incorporate transboundary adaptation issues.

Step B: assessing risks and vulnerabilities to climate change

3. Current and projected climate change

3a. Observation systems are in place to monitor climate change, extreme climate events and their impacts

Yes / In progress / No

The UK's National Meteorological Service (the Met Office)²⁹ holds the nation's weather and climate records. These are summarised in the annual State of the UK Climate report³⁰, which provides an accessible, authoritative and up-to-date assessment of UK climate trends, variations and extremes.

Systematic observations in the UK and its overseas territories are made by many national agencies and organisations. The Met Office is the lead agency for making and collecting meteorological and atmospheric observations³¹. Observations are also made by others, including the Natural Environment Research Council (NERC) research centres and other Delivery Partners. Collection of oceanographic and marine observations is widely distributed throughout the UK, with many institutions involved. Terrestrial observations are made or coordinated by NERC, the Environment Agency (EA), Natural Resources Wales (NRW), the Scottish Environment Protection Agency (SEPA), the Northern Ireland Environment Agency (NIEA), the Forestry Commission and others.

²⁸ <http://www.climatenorthernireland.org.uk/>

²⁹ <http://ukclimateprojections.metoffice.gov.uk/>

³⁰ <http://www.metoffice.gov.uk/climate/uk/about/state-of-climate>

³¹ The [Met Office Hadley Centre](#) Climate Programme provides world-leading climate science and led the production of the latest UK Climate Projections ([UKCP09](#)). UKCP09 gives projections of future changes to the climate in the UK to the end of this century.

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The Environmental Observations Forum (EOF) is a LWEC (Living With Environmental Change) Partnership programme founded in 2008 to support better communication and sharing of information across the observations community. LWEC has since been reformed as the Research & Innovation for our Dynamic Environment (RIDE) Forum. The EOF has prepared the reports: *Coordinating Climate Science and Risk Assessment Observations* and *Consultation Responses to the GCOS Implementation Plan*, to assist in the task of gaining a national overview of systematic observation activities.

Another important coordination mechanism is the Marine Science Coordination Committee (MSCC) which was formed in 2008 to develop and implement a Marine Science Strategy for the UK, and to improve UK marine science co-ordination.

The Government Chief Scientific Advisor's Environmental Observations Committee was set up in 2013. Its aim is to ensure that appropriate funding mechanisms are in place for priority programmes and that a coherent and robust environmental monitoring infrastructure exists to meet national needs, including to secure sustained funding for long-term observation activities.

The Met Office National Climate Information Centre (NCIC) keeps track of all UK records which also notes extremes and exceptional weather in each year, producing case studies. These case studies also feature in the Met Office annual State of the UK Climate reports (which are produced as part of the Met Office Hadley Centre Climate Programme). NCIC has also completed an analysis of recent UK extreme weather events (which concluded there had been a marked increase in the number of heat and heavy rainfall related extremes). Additionally, the National Flood Resilience Review published in September 2016 to assess how the UK can be better protected from future flooding and extreme weather events, recommended a long term action to improve modelling of flooding from all sources, which the EA and Met Office have picked up.

3b. Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments)

Yes / In progress / No

The Met Office Hadley Centre (MOHC) Climate Programme provides advanced climate science and led the production of the current UK Climate Projections (UKCP09)³². UKCP09 gives projections of future changes to the climate in the UK to the end of this century. Projections are provided on a 25km spatial scale for a range of climate variables, providing several indicators relevant for climate change evaluations (e.g. seasonal and daily averages, daily maxima). They also include an assessment of uncertainty, making them suitable for risk based assessments. Other organisations such as the English Environment Agency supported the development of UKCP09 in technical review, by funding marine scenario work that provided projections of storm surge and sea level rise for UK waters and in providing case studies to show how UKCP09 can be used in decision making.

One of the key outputs of the MOHC Climate Programme will be an updated set of UK Climate Projections in 2018 (UKCP18). These will update the UKCP09 projections of climate change over UK land areas and projections of sea-level rise. They will provide greater regional detail, further analysis of both national and global climate risks and more information on potential extremes and impacts of climate change. UKCP18 will support the preparation of the third CCRA. The new projections will also be an important

³² <http://ukclimateprojections.metoffice.gov.uk/>

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source of information for UK organisations that need to ensure that their assets and operations are resilient to future climate and weather extremes.

There is some experience of using scenarios to test and direct the suitability of future actions and strategies. For example in England the Environment Agency used simplified screening assessment of organisational duties against a climate impact scenario. This was used to advise and direct adaptation commitments in their statutory report to government under the Government's Adaptation Reporting power.

3c. Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making

Yes / In progress / No

Based on UKCP09, the first CCRA for the UK was published in January 2012. It identified over 700 risks and opportunities to the UK from a changing climate over the next century, under three different emissions scenarios and focused on around 100 of them in further detail.

The second CCRA was laid before Parliament in January 2017. It is informed by an underpinning evidence report prepared independently by the ASC and published in July 2016. The evidence report analyses around 60 key present-day climate risks and opportunities and current levels of adaptation, and assesses how climate and socio-economic change may alter those risks and opportunities in the 2020s, 2050s and 2080s. The evidence report has taken a policy-focused approach to presenting the results, using the concept of urgency to prioritise the risks and opportunities. It considers where additional action is needed in the next five years, taking into account current and planned policies, and identifies six priority risk areas of flooding, water scarcity, overheating, impacts on natural capital, food security, and pests and diseases. The evidence report considers impacts on a number of large sectors including infrastructure, people and the built environment, and business and industry. Within these a range of sub-sectors is considered – for instance, the business sub-sectors for which impacts of climate change are more relevant are given as: engineering and consulting, tourism, insurance and other finance products, agriculture, and food and utilities.³³ Evidence summaries were also produced for England, Wales, Scotland and Northern Ireland to describe the risks and opportunities specific to each part of the UK.

3d. Climate risks/vulnerability assessments take transboundary risks into account, when relevant

Yes / In progress / **No**

As noted under 2b above, the NAP and the NAS/Climate Change Act do not contain any elements supporting transboundary cooperation with neighbouring countries (e.g. Ireland). The latest CCRA (2017) contains a chapter on the international dimensions of climate change – addressing both risks and opportunities³⁴.

³³ UK Climate Change Risk Assessment 2017, July 2016, <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Synthesis-Report-Committee-on-Climate-Change.pdf>

³⁴ <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Chapter-7-International-dimensions.pdf>

4. Knowledge gaps

4. Work is being carried out to identify, prioritise and address the knowledge gaps

Yes / In progress / No

England and Reserved Matters

The NAP recognises the importance of further research to shape UK adaptation activity. Research activity identified in the NAP includes:

- Living with Environmental Change³⁵ (LWEC) report cards: LWEC brought together 22 public sector organisations that fund, carry out and use environmental research and observations. Since its inception, LWEC has evolved into the Research & Innovation for our Dynamic Environment (RIDE) Forum. Partners include the UK Research Councils, government departments with environmental responsibilities, devolved administrations and government agencies.. Private sector stakeholder input is sought on an issue-by-issue basis, rather than a formalised standing business board. The Partnership has among its two core objectives the alignment of research agendas, i.e. work such as road mapping, co-ordination of funding partners, co-design of innovative cross-disciplinary programmes, developing and implementing national research strategies.
- The UK Marine Climate Change Impacts Partnership³⁶ (MCCIP) report cards³⁷: MCCIP is a forum that involves the major marine science funding Departments, the Devolved Administrations, the key marine science providers and independent members, and defines as a priority areas 'responding to climate change and its interaction with the marine environment'. The reports cards look looks at climate change and marine biodiversity legislation, with a focus on the legislation used to establish various types of marine protected areas.
- Adaptation research produced by the Adaptation and Resilience in the Context of Change³⁸ (ARCC) Network: managed by UKCIP, and hosted by the Environmental Change Institute, University of Oxford. The network supports the creation of robust built environment and infrastructure sectors within the UK.

The UK Met Office³⁹ undertakes core research into climate science, observations, projections and impacts in support of practical decision-making. This includes assessments of the potential impact of climate change both globally and regionally.

Scotland

The Scottish Government is embedding climate change adaptation into the development of a robust evidence base, including £1m annual funding to the ClimateXChange⁴⁰ adaptation research programme.

³⁵ <http://www.lwec.org.uk/>

³⁶ <http://www.mccip.org.uk/>

³⁷ http://www.mccip.org.uk/media/1611/mccip_special_topic_report_card_-2015.pdf

³⁸ <http://www.arcc-network.org.uk/>

³⁹ <http://www.metoffice.gov.uk/services/climate-services>

⁴⁰ <http://www.climateexchange.org.uk/>

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Wales

One of the key themes of the National Research Network for Low Carbon Energy & Environment (NRN – LCEE) focuses around the impacts of climate change focusing specifically on coastline and agriculture ecosystem resilience.

The Welsh Government is currently assessing suitable research routes to ensure it addresses the evidence gaps identified in the second CCRA evidence report.

Northern Ireland

The latest UK Climate Change Risk Assessment identified a number of gaps in evidence for Northern Ireland climate change risks. Work is ongoing across all government departments to address the gaps in evidence. Climate NI have recently commenced an exercise to provide information about non-government work and research that is completed, underway or scheduled which could help address the priority risks facing NI, as identified by the UK Climate Change Risk Assessment.

5. Knowledge transfer

5a. Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means)

Yes / In progress / No

Until the end of March 2016, UK Government funded its Environment Agency to provide a Climate Ready Support Service (CRSS) for England which supported organisations in adapting to climate change. By 2016 the majority of NAP actions to which the CRSS Service was contributing were either complete or ongoing without the need for support from the service. The CRSS produced or supported a range of tools and products to help organisations in preparing for climate change, but these are no longer supported through a central web portal, but can be found on a number of organisation's' websites, which are now embedded within the Climate-ADAPT UK page⁴¹.

Climate projections for the UK are offered to all kinds of potential users through a specific and dedicated website⁴². It offers information on climate projections that can be consulted tailored to different profiles, levels of expertise, etc. The website contains abundant guidance material and tools to help users find the information and use it. Updated and improved climate projections are due to be released in 2018 via UKCP18.

The UK Met Office offers comprehensive information about climate and climate change through its website⁴³. A Climate Guide section provides comprehensive information about climate, climate change and climate science. The Met Office also hosts the National Climate Information Centre, which holds national and regional climate information for the United Kingdom, summarized in tables, maps, figures and summaries. Information is available on averages, extremes, climate anomalies, etc.

⁴¹ See 'b. Adaptation capacity, dissemination, education, training': <http://climate-adapt.eea.europa.eu/countries-regions/countries/united-kingdom>

⁴² <http://ukclimateprojections.metoffice.gov.uk/>

⁴³ <http://www.metoffice.gov.uk/climate-guide>

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The Met Office website also contains 'Climate Services'⁴⁴ and 'Climate Service UK'⁴⁵ sections, where consultancy training services are offered to help national and international users accurately interpret the available climate information. It aims to provide business and society with a range of products and services that provide the vital information, tools and advice needed to help manage climate variability and change, and build capacity in developing countries.

The Environment Agency provides a website with specific advice and support to key sectors to help them build resilience to climate change, in particular on water resources and environment, coastal erosion, floods⁴⁶.

UKCIP's website⁴⁷ offers a wide set of tools, information, and other contents to support organisations, sectors and governments adapt to the changing climate through practice-based research, and by providing support and advice.

Scotland:

Adaptation Scotland offers free access to the best quality data on climate trends and their impacts in Scotland as well as access to tools, guidance and advice on adapting to the impacts. **Sniffer**, a third sector organisation, delivers the **Adaptation Scotland Programme** offering free access to the best quality data on climate trends and access to tools, guidance and advice on adaptation.

5b. Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated

Yes / In progress / No

Several initiatives in the UK contribute to build capacity in the UK amongst a range of audiences and actors.

England and Reserved Matters

Until the end of March 2016, UK Government funded its Environment Agency to provide a Climate Ready Support Service (CRSS) for England which supported organisations in adapting to climate change. By 2016 the majority of NAP actions to which the CRSS Service was contributing were either complete or ongoing without the need for support from the service. The CRSS produced or supported a range of tools and products to help organisations in preparing for climate change.

Natural England and the Royal Society for the Protection of Birds, in partnership with the CRSS and the Forestry Commission published the 'Climate change adaptation manual: evidence to support nature conservation in a changing climate' to support conservation practitioners in adapting to climate change.

UK Government supported LWEC to develop Climate Change Impact Report Cards. There are report cards on Biodiversity, Water, Agriculture & Forestry, Health and Infrastructure, with more in development. The cards provide a summary of the latest

⁴⁴ <http://www.metoffice.gov.uk/services/climate-services>

⁴⁵ <http://www.metoffice.gov.uk/services/climate-services/climate-service-uk>

⁴⁶ <http://evidence.environment-agency.gov.uk/FCERM/en/Default/FCRM.aspx>

⁴⁷ <http://www.ukcip.org.uk/>

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scientific research on the impacts of climate change on the UK. This work is now taken forward by LWEC's successor, the Research and Innovation for our Dynamic Environment (RIDE) Forum.

The NAP recognizes long-term investors' concern, such as pension and insurance providers, with an insufficient understanding of the effects of climate change risk on future economic growth. The NAP therefore plans to work with these investors to explore further research needs around how investments and insurance sectors may take into account climate risks and what opportunities exist to support the sectors in managing them, from 2015.

The NAP also recognizes a government's role in helping businesses to understand the potential risks and opportunities through capacity building, awareness raising, developing and disseminating tools and guidance, and encouraging businesses to review their strategic frameworks and models.

Scotland

Although there is no direct evidence available on its use for capacity building activities, Adaptation Scotland offers free access to the best available data on climate trends and their impacts in Scotland as well as access to tools, guidance and advice on adapting to the impacts. Adaptation Scotland provide the latest information to support adaptation planning and action, including past climate trends and future climate projections.

Wales

The Welsh Government's Knowledge Transfer Programme is a key exchange process between the Welsh Government and its key stakeholders in Wales. It aims to build resilience against the impacts of climate change through the exchange of knowledge, skills and resources, whilst understanding stakeholder's needs and requirements to enable effective action against the impacts of climate change.

The programme has focused on how to embed adaptation within organisations and developing tools and resources to help sectors and organisations adapt to the impacts of climate change.

Northern Ireland

The Climate Change Unit in the Department of Agriculture, Environment and Rural Affairs works with Climate NI to build adaptation capacity through information dissemination workshops and seminars.

Step C: identifying adaptation options

6. Adaptation options' identification

6a. Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts

Yes / No

England and Reserved Matters:

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The NAP sets out actions that leading businesses, councils and communities, as well as government, are taking to tackle climate threats and take advantage of new opportunities. It aligns the risks identified in the CCRA to actions being undertaken or to be undertaken and the timescales according to each theme. This covers buildings and infrastructure, health and emergency services, the natural environment, businesses and the agriculture and forestry sectors. Geographical issues are considered, for instance in relation to agriculture and fisheries.

Scotland:

Scotland's first statutory Climate Change Adaptation Programme (SCCAP, May 2014) aims to increase the resilience of Scotland's people, environment and economy to the impacts of climate change. Over 130 impacts for Scotland have been identified. While the majority of these represent potential threats for Scotland, some present potential opportunities. The impacts vary in character and whilst some have been quantified, others have had to rely on expert elicitation or a narrative based on literature. This information and other information where available, has been used to inform those impacts that the Scottish Government considers to require early adaptation action⁴⁸. The Scottish Government published a non-statutory Adaptation Framework in 2009, accompanied by 12 Adaptation Sector Summaries, followed by updated Sector Action Plans in 2011.

Wales:

The Adaptation Delivery Plan⁴⁹ sets out the specific policies and programmes expected to be implemented in delivering the Adaptation Framework. There were 24 actions in the first edition of the Delivery Plan addressing the following categories:

- Strategic actions
- Natural environment
- Infrastructure
- Communities
- Health
- Business and tourism

In light of the evidence on risk contained in the second CCRA, and the new legislative framework established by the Well-being of Future Generations Act, a new Adaptation Plan for Wales is being developed.

Northern Ireland:

To take account of cross cutting issues to the climate change risks and opportunities being brought forward in the Adaptation Programme, four primary areas for action were identified:

- Flooding;
- Water;
- Natural Environment; and
- Agriculture and Forestry.

DAERA is currently working on obtaining NI adaptation information and data that could be used, along with the findings of the CCRA NI Summary, in the development of the

⁴⁸ <http://www.gov.scot/Resource/0045/00451392.pdf>

⁴⁹ <http://gov.wales/docs/desh/publications/101006ccstratdeliveryadaptationen.pdf>

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next Northern Ireland Adaptation Programme, which is due to be laid in the NI Assembly in 2019.

6b. The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks

Yes / No

England and reserved matters

The NAP addresses the risks identified as most urgent. The NAP document is supported by the economic annex 'Economics of the NAP'⁵⁰, which builds on the CCRA and the Project 'The Economics of Climate Resilience'⁵¹. This annex outlines the roles of society/government in adaptation efforts, the challenges of uncertainty, the costs and benefits of climate change and the impacts of climate change on productivity and growth. It also provides recommendations on where future economic research work should focus attention.

Within the work on the Economics of Climate Resilience⁵² an analytical framework for assessment was developed. The work was advised by an expert panel and benefited from input collected through around 200 semi-structured interviews with stakeholders across industry, the voluntary sector, the health service, local authorities, scientists, policy-makers, Non-Government Organisations, Non-Departmental Public Bodies, academia, researchers, trade associations and regulators, among others.

Scotland

Assessment of options included an economic assessment of adaptation options to those risks highlighted by the CCRA.

Wales

The Adaptation Framework states that the guidance provided is not prescriptive to a specific methodology for assessing risk or of developing a programme of adaptation measures. It seeks to inform to Reporting Authorities about adapting to the changing climate and to support related planning processes. The guidance is intended to help Reporting Authorities develop a structured approach to adaptation.

Northern Ireland

Stakeholder consultations with all departments and external stakeholders (through CNI) has identified the priority adaptation options for NI brought through from the UK CCRA.

6c. Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies

Yes / In progress / No

⁵⁰ <https://www.gov.uk/government/publications/adapting-to-climate-change-national-adaptation-programme>

⁵¹ <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=18016>

⁵² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209867/pb13942a-nap-annex-economics.pdf

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The NAP's chapter 4 'Healthy and resilient communities' defines a series of objectives (11 to 14) to develop mechanisms to further link and coordinate DRM with adaptation, through an assembly of actions aiming at enhancing the preparation of communities and individuals to cope with severe weather events and other impacts of climate change, and the resilience of emergency services and local capability to be resilient to a changing climate. This chapter, explicitly linked to other NAP elements (chapter 2 on the built environment and chapter 6 on the natural environment), aims at improving the prevention, preparedness and emergency management capacity against weather and climate events, including the consideration of a shifting in their frequency and intensity.

Health risks from changing weather patterns, extreme events (extreme temperatures, wildfires, drought, cold snaps, floods), and a focus on the most vulnerable communities, are the pillars of this chapter. Actions to achieve them involve the health sector, a Cabinet Office-chaired cross-government Communities Prepared National Group, the Local resilience Forums, the communities and civil society groups, the emergency planning and civil protection institutions and the emergency services (ambulance, fire and rescue services).

Flood insurance is recognized as a key tool to help households and private businesses manage the potential consequences of extreme events linked to climate change. According to this, the government is committed to ensuring the continued availability and affordability of flood insurance to high risk households. There is a specific NAP action which aims to secure new arrangements for flood insurance beyond 2013, which was followed up by a number of recommendations in the first ASC progress report of the NAP in 2015. This included future strategies and recommendations on Flood Re, the recent public private initiative that became operational. Flood Re could potentially become more relevant to incentivising climate change adaptation in the future.

The HO2020 PLACARD project (PLATform for Climate Adaptation and Risk reduction) 2015-20 aims to support the coordination of CCA and DRR communities. By

- 1) providing a common 'space' where CCA and DRR communities can come together, share experiences and create opportunities for collaboration;
- 2) facilitating communication and knowledge exchange between both communities; and
- 3) supporting the coordination and coherence of CCA and DRR research, policy and practice.

UKCIP are one of the one of the original proponents of PLACARD, with a commitment to second the lead proponent (FFCUL) and play a leading or key role in a number of the work packages:

- WP 1: Setting up an interchange platform for multi-stakeholder dialogue involving researchers, policy-makers and practitioners in CCA and DRR – shaping the CCA and DRR research and innovation agenda (UKCIP led); supporting CCA and DRR institutions and networks (UKCIP led)
- WP 5: Reflecting on, evaluation and learning from the PLACARD project – evaluation and learning (UKCIP led)
- WP 6: Includes developing and evaluating the PLACARD communication and dissemination plan (UKCIP led)

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The Adaptation Sub-Committees' first report to Parliament on the NAP in 2015⁵³ summarised the following regarding risks:

- There are plans in place and action is being taken to address the risk of future water scarcity. Significant decisions in terms of new water storage, treatment and supply infrastructure will need to be taken. Reforming the water abstraction licencing regime also remains an urgent priority.
- Flooding remains one of the most serious current and future risks to the UK from climate change. Investment in flood and coastal defence assets will need to steadily increase in the future. Concerted efforts will also be needed by local authorities and partner organisations to improve the management of catchments, the coast, and urban areas in ways that alleviate the potential for flooding.
- Impacts on health from higher temperatures are likely to increase in the future due to climate change combined with a growing, ageing population. Action is needed to begin to adapt the UK's built environment, so that homes and other buildings can be comfortable and safe in higher temperatures. Recent losses in urban green space should also be reversed.
- Key indicators of environmental quality continue to move in the wrong direction, putting at risk vital ecosystem goods and services such as clean air, clean water, and carbon storage. Harmful land management practices persist, particularly on sensitive peat habitats in the uplands. Some of the most productive agricultural land in England is at risk of becoming unprofitable within a generation due to soil erosion and the loss of organic carbon. Without further action, farmers may not benefit from the opportunities of longer growing seasons, and the natural environment will be severely harmed by climate change.

The recommendations made in the ASC progress reports shall be taken into consideration when undertaking the design of the second National Adaptation Programme.

7. Funding resources identified and allocated

7. Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action

Yes / In progress / No

The government is providing funding for developing the UK Climate Projections, the national climate change risk assessment, the maintenance of the Adaptation Subcommittee, the climate services websites, and other research and cross-cutting actions needed to implement the NAP and coordinate action nationally.

It should be noted that the budget for the second CCRA evidence report was about a third of the budget that was allocated for CCRA1 (approx. £1 million as opposed to £3 million). As a result, large amounts of novel research were not planned. Instead the approach consisted of a comprehensive literature review supported by a small number of research projects⁵⁴.

⁵³ https://documents.theccc.org.uk/wp-content/uploads/2015/06/6.736_CCC_ASC_Adaptation-Progress-Report_2015_FINAL_WEB_070715_RFS.pdf

⁵⁴ <https://documents.theccc.org.uk/wp-content/uploads/2014/12/CCRA-METHOD-V1-0.pdf>

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Almost £1.5 million was spent on CCRA2. Adaptation strategies adopted at subnational levels

CCRA2 was carried out by the Adaptation Sub-Committee of the UK Committee on Climate Change, an independent expert body advising the UK Government on adaptation. This, along with lessons learned from the first CCRA1, brought considerable efficiencies and savings compared to CCRA1 delivering much greater value for money. CCRA2 focused on a smaller number of prioritised key risks. The innovative urgency framework used in CCRA2 to prioritise risk and opportunities and translate into recommendations for government was found to be a more useful and effective way to communicate results than CCRA1. National adaptation strategy

The research carried out was funded largely by an additional contribution from the Natural Environment Research Council of £400k.

Scotland:

The Scottish Government currently funds adaptation through:

- the development of a robust evidence base, such as Government research programmes;
- programmes to develop adaptive capacity, such as funding to the Scottish Climate
- Change Impacts Partnership; and
- policy-specific actions, such as the development of River Basin Management Plans through Scottish Environment Protection Agency (SEPA).

Wales:

The Welsh Government's funding of climate change adaptation is distributed across portfolio areas. Flood and Coastal Risk Management is a priority area for investment with the Welsh Government investing over £54 million across Wales during financial year 2017-18. The 4 year capital funding allocation for flood risk management will allow us to plan more effectively, providing certainty of funding from one year to the next. We are planning for future coastal risk by working alongside local authorities to develop a programme of capital investment in coastal risk management commencing in 2018/19. The Coastal Risk Management Programme provides the opportunity for local authorities to invest up to £150 million in the coastal infrastructure protecting our coastal communities, adapting to the challenge of climate change and sea level rise and achieving wider benefits.

Step D: Implementing adaptation action

8. Mainstreaming adaptation in planning processes

8a. Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments

Yes / No

Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment ('the EIA Directive') sets the framework by which Member States are required to assess the environmental impact of proposed public and private projects which are likely to have a significant effect on the environment The Directive

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includes assessment of the direct and indirect significant effects of a project on climate. The Directive was amended in 2014 by Directive 2014/52/EU. The amendments to it clarified that the impact of a project on climate could include the nature and magnitude of greenhouse gas emissions and the vulnerability of the project to climate change. The transposition of Directive 2014/52/EU is a devolved matter in the UK and each of the devolved administrations is responsible for preparing its own regulations. For example, Wales has revised its regulations on environmental impact assessment with considerations of climate change adaptation⁵⁵.

8b. Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections

Yes / No

The Civil Contingencies Act, from 2004, has not been modified to address the effects of climate change, but other disaster risk related frameworks have been revised to integrate them. The Health and Social Care Act (2012) focuses on local planning and decision-making for setting and delivering local health priorities. Some basic tools include the Joint Strategic Needs Assessments (JSNAs) and subsequent strategies produced by health and wellbeing boards. The Statutory guidance on JSNAs and JHWSs produced by the Department of Health demands to consider the impacts of climate change when preparing them.

Two key risks identified for the UK are specifically addressed through national frameworks. The Heatwave Plan for England (2004) was revised in 2014 to better address the risks of climate change, including preparedness, alert and readiness. It has continued to be reviewed every year since 2014. The Flood and Water Management Act 2010 demands the preparation of national and local strategies for flood risk management, which have to consider the risks of climate change. The National Flood and Coastal Erosion Risk Management Strategy includes long-term planning, avoidance of inappropriate development in high risk areas, improved flood management infrastructure, increased public awareness and improved flood detection/warning.

The NAP also comprehends several measures to reduce risks, complementary to the main DRM regulations, to reduce climate risks, including spatial planning (see 8c), housing design, or the maintenance of performance of flood defences in the light of climate change impacts within the UK National Infrastructure Plan.

8c. Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change

Yes / No

Support for the transition to a low carbon future in a changing climate is one of the core land use planning principles set out in the National Planning Policy Framework (NPPF) for England, which are⁵⁶ expected to underpin both plan-making and decision-taking. Local authorities are expected to adopt proactive strategies to mitigate and adapt to climate change in their Local Plans in line with the provisions and objectives of the Climate

⁵⁵ <http://www.assembly.wales/laid%20documents/sub-ld11027/sub-ld11027-e.pdf>

⁵⁶ <https://www.gov.uk/guidance/national-planning-policy-framework/10-meeting-the-challenge-of-climate-change-flooding-and-coastal-change>

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Change Act 2008. They should co-operate with neighbouring authorities and other bodies to deliver cross-boundary strategic priorities including climate change mitigation and adaptation. The Local Plan will need to reflect these requirements and enable the delivery of sustainable development in accordance with the policies in the NPPF, if it is to be found 'sound' at examination and before it can be adopted by the local authority. Neighbourhood plans must be in general conformity with the strategic policies of the Local Plan and should help achieve the sustainable development needed in their local area.

In addition to the statutory requirement to take the NPPF into account in the preparation of Local Plans, there is a statutory duty⁵⁷ on local planning authorities to include policies in their Local Plan designed to contribute to the mitigation of, and adaptation to climate change. This complements the sustainable development duty on plan-makers. The NPPF recognises that responding to climate change is part of the economic, social and environmental dimensions of sustainable development⁵⁸.

Guidance to Local Enterprise Partnerships (LEPs) were also developed to ensure that adaptation is embedded in local strategies⁵⁹.

8d. National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas where adaptation is mainstreamed in EU policies

Yes / In progress / No

On energy, transport and water management, the UK government has taken measures to take into account the need to consider climate risks and build resilience. Some examples: in the energy sector, Ofgem incorporates the need to build climate resilience into its current transmission and distribution price control review guidance for network companies. In addition, Ofgem is reviewing its guidance on impact assessment to ensure climate resilience is reflected in its decision making; the regulatory framework for transport is already taking into account the need to consider climate risks; on water management, Defra's Strategic Policy Statement and Social and Environmental Guidance to Ofwat sets out the principles for adaptation in the regulatory framework and how regulatory policies are helping to remove barriers to action.

Other actions are planned in the NAP (e.g. guidance, incorporation of climate change in legislative changes).

England and reserved matters

The NAP promotes sectoral adaptation. The national government policy has been to embed adaptation consideration into all relevant policies, and the NAP sets out the roles of the key government departments and their respective delivery bodies and partners. There, the most relevant policy instruments are identified, and the ways they already promote adaptation (or actions to ensure that they will in a near future) are described. Adaptation is embedded as a consideration across UK Government with coordination from the Domestic Adaptation Board. The Defra Climate Ready programme chaired the Domestic Adaptation Board and co-ordinated the UK Government's work on adaptation in

⁵⁷ <https://www.gov.uk/guidance/climate-change#statutory-duty-on-Climate-Change>

⁵⁸ <https://www.gov.uk/guidance/climate-change>

⁵⁹ http://climateuk.net/sites/default/files/CUK%20Resilient%20Growth%20-%20Information%20Note_0.pdf

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England, and throughout the UK on a range of reserved matters. Defra policy officials continue this role.

Scotland

A senior cross-government Climate Change Delivery Board and Sector Action Plans assist in mainstreaming adaptation across policy areas. By providing co-ordination across boundaries of organisations' responsibilities, this encourages both private and public action and can ensure a long-term approach to public goods, such as natural resource protection. Co-ordination is provided through:

- development of key national strategies, such as the Land Use Strategy and the National Planning Framework
- establishment of forums such as the Rural Land Use Study; and
- support of consistent public sector advice⁶⁰.

Wales

Adaptation to climate change is a key consideration in the emerging National Development Framework for Wales⁶¹ which will set out a 20 year land use framework for Wales and will replace the current Wales Spatial Plan.

In light of the evidence presented in the second CCRA, the Welsh Government is working with partners to frame a new adaptation policy for Wales.

The Well-being of Future Generations (Wales) Act 2015 establishes the framework for integrating considerations of climate change into policy development and delivery. During policy development, there must be a consideration of future climate trends, alongside other significant national and global trends identified in the Future Trends Report. Policies should be designed to maximise their contribution to the national well-being goals, thereby incorporating climate resilience into policy design.

Northern Ireland

The NICCAP outlines that the "2011-2015 Programme for Government committed the Executive to a target of increasing the drawdown of competitive EU funding by 20% over the lifetime of the current Assembly. One of the four thematic groups established to help achieve this target was the 'Climate Change and Energy' group, led by the DAERA but operating cross-departmentally with representative from DARD, DETI, DRD and DSD.

One of the key aims of the group is to encourage the development of projects which help address climate change mitigation and adaptation issues. The intention is to try to obtain financial support through the submission of projects - targeted at EU elective funding streams.

8e. Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention

Yes / **No**

⁶⁰ See page 25: <http://www.gov.scot/Resource/Doc/295110/0091310.pdf>

⁶¹ <http://gov.wales/topics/planning/national-development-framework-for-wales/?lang=en>

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Adaptation is not yet mainstreamed into insurance or other policy instruments incentivising investments in risk prevention, but the NAP contains significant elements that will facilitate integration in the short term. On incentives, one of the key declared drivers of the NAP is that, while it is important for the government to help remove barriers to action, policy should be developed in such a way that does not crowd out private investment in adaptation and keeps a clear focus on cost-effectiveness.

Flood insurance is recognized as a key tool to help households and private businesses manage the potential consequences of extreme events linked to climate change. According to this, the government is committed to ensuring the continued availability and affordability of flood insurance to high risk households, and one of the NAP actions with this aim is **securing new arrangements for flood insurance beyond 2013, which was followed up by a number of recommendations in review of the NAP progress by ASC in 2015.**, including future strategies and recommendations on Flood Re, the recent public private initiative that became operational⁶².

Flood Re is an important instrument, but not convincingly considered to incentivise adaptation. As part of Flood Re's transition plan, there are proposals to encourage households to better protect their properties so that the chance of needing to make a claim is reduced. **The aim is to allow insurance to remain available and affordable without the need for ongoing subsidies**⁶³.

9. Implementing adaptation

9a. Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents

Yes / In progress / No

The NAP defines policies and measures to be implemented at several levels and identifies the actors to implement each of them. The NAP has a time horizon of 5 years (2013-18), and provides tables identifying the timing for every action. According to the NAP, many of its actions have been or are being implemented already (some were in place before the NAP adoption). The UK's reporting power obliges the different Government Depts. to report on the measures implemented.

England

The Flood and Water Management Act 2010 demands the preparation of national and local strategies for flood risk management, which have to consider the risks of climate change. The National Flood and Coastal Erosion Risk Management Strategy includes long-term planning, avoidance of inappropriate development in high risk areas, improved flood management infrastructure, increased public awareness and improved flood detection/warning.

Scotland

According to the 2016 ASC review of the SCCAP:

⁶² See pages 13, 14 and 18: https://www.theccc.org.uk/wp-content/uploads/2015/10/DECC_CCC_Adaptation.pdf

⁶³ See page 87: <https://www.theccc.org.uk/wp-content/uploads/2016/09/Scottish-Climate-Change-Adaptation-Programme-An-independent-assessment-CCC-September-2016.pdf>

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"Across the three themes of the SCCAP, policies and plans are generally in place and, other than in a few isolated cases, actions are taking place. However, evidence of progress being made is mixed."

Furthermore, the review noted that "Objectives in support of climate change adaptation are established in each of the SCCAP's three themes, and almost all of the 148 policies and proposals mentioned in the programme are reported to be completed or "on track"."⁶⁴

Wales

The second UK Climate Change Risk Assessment evidence report provides an overview of risks specific to Wales, but to date there has not been an independent assessment of its resilience to climate risks.

Northern Ireland

An evaluation of the progress made to date will be carried out in the coming months and the report will be included in NI's next Adaptation Programme due for publication in 2019.

9b. Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)

Yes / No

The NAP identifies and describes actions and proposals that are the responsibility of the government and of other institutions outside the government such as local government, industry, communities and civil society. It also identifies actions where several institutions have to be involved.

The UK facilitates regional coordination through several initiatives including Core Cities. This group represents the UK's 10 core cities, excluding London, and aims to unlock their full potential to create a stronger, fairer economy and society. Sub-nationally, Core Cities are active around adaptation. Core Cities collaborate at officer level [the Climate Resilience and Adaptation working group] and feed activity and learning up into the Core Cities Climate Low Carbon, Energy and Resilience Policy Hub and ultimately to the cabinet and chief executive levels. There have been some good examples of progress against NAP actions (and core cities principles) within Core Cities, and there are differences sub-nationally in areas where Core Cities operate more as city regions or as individual entities themselves.

As an example of city-level partnerships, the Leeds Climate Commission is a city wide partnership with membership drawn from over 30 key public, private and third sector organisations. Led initially by the University of Leeds and Leeds City Council, its aim is to bring people and organisations together to shape the transition of Leeds to a low carbon, climate-resilient city and to mirror the strategic priorities of the government's advisory Committee on Climate Change (CCC) at a city scale.

Scotland:

⁶⁴ See Key Messages and Executive Summary for overview: <https://www.theccc.org.uk/wp-content/uploads/2016/09/Scottish-Climate-Change-Adaptation-Programme-An-independent-assessment-CCC-September-2016.pdf>

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Through the Adaptation Framework, the Scottish Government work with partners to address Scotland's vulnerability to climate change. These include organisations that deliver public services, that manage Scotland's natural environment and that develop social and economic policy.

The Adaptation Framework also establishes support mechanisms to work with local businesses and communities. There are also Community Planning Partnerships⁶⁵ and the Scottish Climate Change Impacts Partnership (SCCIP), which help local stakeholders in local adaptation planning.

Wales:

The Welsh Local Government Association's Sustainable Development Framework provides practical guidance at both a corporate and service level to local authorities on delivering sustainable development. This is now replaced by the Future Generations Act that also applies to Local Government and the wider public sector and establishes Public Service Boards to foster a collaborative approach to addressing local priorities⁶⁶.

Northern Ireland:

The Adaptation Programme encourages adaptation responsibilities throughout society, including district councils.

9c. Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green infrastructure

Yes / No

Through its Climate Ready support service the Environment Agency worked with partners to provide targeted advice, helping key sectors increase their resilience to all major climate risks and impacts. The guidance and tools were developed and road-tested with leading companies before being rolled out as a wider scheme. The Agency worked with a range of businesses/sectors (including land use/management planning sectors, such as forestry, agriculture or the water sector) to provide tools and guidance ranging from a simple business resilience health check tool through to full risk assessment methods for more complex aspects, such as understanding supply chain impacts:

- Guidance on resilient local highways⁶⁷, business continuity⁶⁸, a resilient built environment⁶⁹, making the case for adapting the built environment⁷⁰, tackling overheating⁷¹, adaptation for health and social care⁷², the paper and pulp

⁶⁵ Community Planning Partnerships are operating in all 32 local authority areas and are responsible for developing and delivering a local development plan for its council area.

⁶⁶

<http://www.senedd.assembly.wales/documents/s30083/WFG%2069%20Welsh%20Local%20Government%20Association%20WLGA.pdf>

⁶⁷ <http://climateuk.net/localhighways>

⁶⁸ <http://www.bsigroup.com/en-GB/forms/Adapting-to-Climate-Change-using-your-Business-Continuity-Management-System/>

⁶⁹ <http://climateuk.net/resource/building-resilient-environment-%E2%80%93-sector-tools-and-resources>

⁷⁰ <https://connect.innovateuk.org/web/climate-change-adaptation/article-view/-/blogs/guidance-for-making-the-case-for-climate-change-adaptation-in-the-built-environment>

⁷¹ <http://www.zerocarbonhub.org/current-projects/tackling-overheating-buildings>

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sector⁷³, chemicals businesses⁷⁴, and the food and drink sector⁷⁵, resilient supply chains⁷⁶, farm business resilience⁷⁷, business opportunities⁷⁸, and climate-proofing health and wellbeing strategies⁷⁹, adaptation in the natural environment⁸⁰, and a quick guide for small and medium-sized businesses⁸¹.

- Tools to better understand social vulnerability and climate change⁸², monitor impacts of severe weather⁸³, assess climate impacts on businesses⁸⁴, business resilience⁸⁵ and farm business resilience⁸⁶, analyse the costs and benefits of adaptation⁸⁷, project climate change impacts on wetlands⁸⁸, assess the climate resilience of catchment management methods⁸⁹, and develop a practical action plan to increase resilience⁹⁰.

In addition, the UKCIP has produced a range of guidelines over the years⁹¹.

The NAP details actions from the Institute of Environmental Management and Assessment (IEMA) aiming at ensuring that climate change implications will be given consideration in all infrastructure works to be implemented from 2013 to 2016, including reviews of IEMA's online hub on EIA and climate change, updating advice resources (information pages and advice notes) and other communication and awareness campaign (e.g. webinars), providing guidance on integrating climate change and biodiversity into the EIA and SEA process⁹².

The NPPF supports the use of green infrastructure. The Local Government Association (LGA) has recently issued reference guides and resources to help local authorities plan for and provide green infrastructure in developing their local environment, to reduce and manage climate change impacts in urban areas.

⁷² http://www.sduhealth.org.uk/documents/publications/adaptation_guidance_final.pdf

⁷³

<http://www.paper.org.uk/documents/EA/Climate%20Ready%20Adaptation%20Guidance%20paper%20and%20Opulp%20final%20181113.pdf>

⁷⁴ http://www.cia.org.uk/portals/0/documents/climatechangeadaptationguidance2015_final.pdf

⁷⁵ <http://www.fdf.org.uk/publicgeneral/Climate-Ready-FDF-Adaptation-Guide.pdf>

⁷⁶ <http://climateuk.net/resource/supply-chains-adaptation-guidance>

⁷⁷ <https://vimeo.com/123620498?lite=1>

⁷⁸ <http://www.acclimatise.uk.com/login/uploaded/resources/EA%20report.pdf>

⁷⁹ [http://www.sduhealth.org.uk/documents/publications/2015/09032015 - Under the weather - Climate Ready - version 2 - Final Master.pdf](http://www.sduhealth.org.uk/documents/publications/2015/09032015_-_Under_the_weather_-_Climate_Ready_-_version_2_-_Final_Master.pdf)

⁸⁰ <http://nepubprod.appspot.com/publication/5629923804839936>

⁸¹ <http://www.greensuffolk.org/assets/Greenest-County/Business/General-Files/Be-Climate-Ready-Guide.pdf>

⁸² <http://www.climatejust.org.uk/>

⁸³ <http://climateuk.net/resource/severe-weather-impacts-monitoring-system-swims>

⁸⁴ <http://climateuk.net/resource/bacliat>

⁸⁵ <http://www.businessresiliencehealthcheck.co.uk/>

⁸⁶ <http://www.farmbusinessresilience.co.uk/>

⁸⁷ <http://www.fdf.org.uk/publicgeneral/cost-benefit-analysis-methodology.pdf>

⁸⁸ <http://www.ceh.ac.uk/news-and-media/news/new-tool-helps-project-impacts-climate-change-wetlands>

⁸⁹ <http://cascadeconsulting.co.uk/projects/catchment-management-and-ecosystem-services/>

⁹⁰ <http://climateuk.net/resource/adaptation-wizard>

⁹¹ <http://www.ukcip.org.uk/publications/>

⁹² <https://www.iema.net/news/news/2015/11/12/new-eia-guidance-will-speed-up-planning-and-bring-down-costs/>

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9d. There are processes for stakeholders' involvement in the implementation of adaptation policies and measures

Yes / No

The NAP establishes processes for the involvement of a number of stakeholders. Each action identifies the relevant actors to implement them. The UK NAP leaves the responsibility for adaptation in the hands of stakeholders, and aims to provide them with due advice and support, through the Climate UK which covers England, Scotland, Wales and Northern Ireland (see indicator 1c.) Although Climate UK Community Interest Company (CIC) will cease operations, the informal Climate UK network, which existed for more than 10 years prior to the establishment of the CIC, will continue.

According to the NAP, the government is also supporting the building of networks of organisations that may share common risks (and quotes as example the Infrastructure Operators Adaptation Forum).

Another mechanism to involve stakeholders in the implementation of adaptation policies is through the *reporting authorities'* initiative mentioned in 10b.

The Local Adaptation Advisory Panel for England provides a forum to champion adaptation activity across local government, identifying best practice for adaptation at the local level.

Step E: Monitoring and evaluation of adaptation activities

10. Monitoring and reporting

10a. NAS/NAP implementation is monitored and the results of the monitoring are disseminated

Yes / No

According to the Climate Change Act, each report of the UK's Committee on Climate Change (CCC) must contain an assessment of the progress made towards implementing the objectives, proposals and policies set out in the programmes laid before Parliament under the section 'adaptation to climate change'. Reporting needs to address the array of actions carried out at all levels and by different actors, and is supported by the UK's reporting power, this ensuring a comprehensive reporting of actions from all relevant stakeholders.

Monitoring of adaptation action and sectoral integration is embedded in the monitoring scheme of the NAP, as it contains priority sectoral activities and actors responsible for their implementation. The Adaptation Sub-Committee (ASC) developed an adaptation indicator framework, consisting of performance indicators for climate change adaptation, which will build on a series of annual progress reports.⁹³

Work is carried out across government to track the implementation of the first NAP report on a regular basis. Additionally the ASC has a statutory duty to assess the progress in implementing the NAP, reporting to Parliament in June 2015 and every two years thereafter. The ASC assesses all actions in the NAP report, including those for councils and other local public bodies, business, and civil society as well as central government.

⁹³ <http://www.theccc.org.uk/publications/>

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The ASC's first report⁹⁴ to UK Parliament on the implementation of the NAP was published in June 2015. The government's response⁹⁵ to the assessment was published in October 2015. In June 2017, the ASC published their second and final progress report on the first NAP. An official government response was due for publication in October 2017.

10b. The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated

Yes / No

Monitoring of adaptation action and sectoral integration is embedded in the monitoring scheme of the NAP, as it contains priority sectoral activities and actors responsible for their implementation. The Act enables the government to direct reporting authorities in England to prepare reports on how they are adapting to climate change. Reports include an assessment of climate change risks faced by the reporting authority, and a programme of measures to address the risks and opportunities presented. In the first reporting round (2010-2011) over 100 organisations from the water, energy, transport and public sectors submitted reports. In 2013 the government published a strategy for the second round of reporting, with just over 100 organisations invited to report on a voluntary basis for the second round between 2014 and 2016. The ASC provides advice to the Government on the Adaptation Reporting Power (ARP)⁹⁶. New advice was published in March 2017⁹⁷. The Government will lay its third strategy for adaptation reporting mid 2018 following discussions with reporting organisations and a public consultation.

10c. Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated

Yes / No

Devolved administrations are developing indicator systems as well, but they are in an early development stage. The ClimateXChange centre has started work on an indicator framework for Scotland, with funding from the Scottish Government. The Welsh Government intends to introduce adaptation indicators in a phased manner. The identification of data and indicators to monitor adaptation is also considered in Northern Ireland's as part of its adaptation programme.

Scotland

The Climate Change (Scotland) Act 2009 requires Scottish Ministers to provide an annual report on progress towards achieving the objectives and implementing the proposals and policies set out in the Scottish Climate Change Adaptation Programme (SCCAP). The first

⁹⁴ <https://www.theccc.org.uk/publication/reducing-emissions-and-preparing-for-climate-change-2015-progress-report-to-parliament/>

⁹⁵ <https://www.gov.uk/government/publications/committee-on-climate-changes-2015-progress-report-government-response>

⁹⁶ The ARP aims to ensure that organisations of a public nature with climate-sensitive responsibilities are taking appropriate action to adapt to the impacts of climate change. It does this both directly, through engaging organisations in reporting, and indirectly, through raising awareness, building capacity in organisations, and making examples of good practice publically available.

⁹⁷ <https://www.theccc.org.uk/wp-content/uploads/2017/03/Adaptation-Reporting-Power-Second-round-review-Committee-on-Climate-Change-March-2017.pdf>

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annual report was published in May 2015⁹⁸, the second in May 2016⁹⁹ and the third in May 2017¹⁰⁰.

The Act establishes the requirement for the relevant body (ASC) to independently assess the Scottish Government's progress towards meeting the objectives in the SCCAP. The first independent report was published in September 2016¹⁰¹.

Wales

Under the Climate Change Act there are provisions to report on progress in relation to climate change which is set out in the Welsh Government's Annual Report along with a summary of the actions taken. This reporting requirement has been strengthened through the Well-being of future Generations Act, where all public bodies will need to set out how they are working towards the well-being goals including the *Resilient Wales Goal*.

The Act also has established a Future Generations Commissioner for Wales' who has a specific remit around providing advice or assistance on climate change to public bodies, including the Welsh Government.

Northern Ireland

The Cross Departmental Working Group on Climate Change (CDWG CC)¹⁰² provides an annual report to the NI Executive which contains an update on Government progress of the actions and activities identified in the NI Climate Change Adaptation Programme. The Climate Change Act 2008 requires that the next Programme (and any subsequent ones) must contain an assessment of the progress made towards implementing the objectives, proposals and policies set out in earlier Programmes.

11. Evaluation

11a. A periodic review of the national adaptation strategy and action plans is planned

Yes / No

A periodic review of adaptation action is planned. The Climate Change Act (2008) requires the UK's adaptation cycle to be renewed every 5 years and a new NAP is due in 2018, building on the evaluation of the NAP implementation by the ASC (first report in 2015 and second report in 2017), the updating of the CCRA (in 2017¹⁰³) and the reports provided ARP.

11b. Stakeholders are involved in the assessment, evaluation and review of national adaptation policy

Yes / No

⁹⁸ <http://www.gov.scot/Publications/2015/05/2336>

⁹⁹ <http://www.gov.scot/Publications/2016/05/7046>

¹⁰⁰ <http://www.gov.scot/Publications/2017/05/3941>

¹⁰¹ <https://www.theccc.org.uk/publication/scottish-climate-change-adaptation-programme-an-independent-assessment-for-the-scottish-parliament/>

¹⁰² <https://www.daera-ni.gov.uk/articles/cross-departmental-working-group-climate-change>

¹⁰³ <https://www.theccc.org.uk/uk-climate-change-risk-assessment-2017/>

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Stakeholders' involvement in the evaluation process is linked to the implementation of the ARP established by the Climate Change Act, which aims at ensuring that 'persons or bodies with a function of a public nature' and 'statutory undertakers' (reporting authorities) are taking appropriate action to adapt to the future impacts of climate change. An assessment of the reports will allow a greater understanding of the risks, gaps in information, and priority areas for work in the future.

The current NAP has been drawn up by the government, industry and other non-government organisations working together, and this participatory process is intended to continue towards 2018.

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SUMMARY TABLE

Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
Step A: Preparing the ground for adaptation		
1 <i>Coordination structure</i>		
1a	A central administration body officially in charge of adaptation policy making	<u>Yes</u> / No
1b	Horizontal (i.e. sectoral) coordination mechanisms exist within the governance system, with division of responsibilities	<u>Yes</u> / In progress / No
1c	Vertical (i.e. across levels of administration) coordination mechanisms exist within the governance system, enabling lower levels of administration to influence policy making.	Yes / <u>In progress</u> / No
2 <i>Stakeholders' involvement in policy development</i>		
2a	A dedicated process is in place to facilitate stakeholders' involvement in the preparation of adaptation policies	<u>Yes</u> / No
2b	Transboundary cooperation is planned to address common challenges with relevant countries	<u>Yes</u> / No
Step B: Assessing risks and vulnerabilities to climate change		
3 <i>Current and projected climate change</i>		
3a	Observation systems are in place to monitor climate change, extreme climate events and their impacts	<u>Yes</u> / In progress / No
3b	Scenarios and projections are used to assess the economic, social and environmental impacts of climate change, taking into account geographical specificities and best available science (e.g. in response to revised IPCC assessments) Yes / In progress / No (e.g. in response to revised IPCC assessments)	<u>Yes</u> / In progress / No
3c	Sound climate risks/vulnerability assessments for priority vulnerable sectors are undertaken to support adaptation decision making.	<u>Yes</u> / In progress / No
3d	Climate risks/vulnerability assessments take transboundary risks into account, when relevant	Yes / In progress / <u>No</u>
4 <i>Knowledge gaps</i>		
4	Work is being carried out to identify, prioritise and	<u>Yes</u> / In progress / No

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Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
	address the knowledge gaps	
5 Knowledge transfer		
5a	Adaptation relevant data and information is available to all stakeholders, including policy makers (e.g. through a dedicated website or other comparable means).	Yes / In progress / No
5b	Capacity building activities take place; education and training materials on climate change adaptation concepts and practices are available and disseminated	Yes / In progress / No
Step C: Identifying adaptation options		
6 Identification of adaptation options		
6a	Adaptation options address the sectoral risks identified in 3c, the geographical specificities identified in 3b and follow best practices in similar contexts	Yes / No
6b	The selection of priority adaptation options is based on robust methods (e.g. multi-criteria analyses, stakeholders' consultation, etc.) and consistent with existing decision-making frameworks	Yes / No
6c	Mechanisms are in place to coordinate disaster risk management and climate change adaptation and to ensure coherence between the two policies	Yes / In progress / No
7 Funding resources identified and allocated		
7	Funding is available to increase climate resilience in vulnerable sectors and for cross-cutting adaptation action	Yes / In progress / No
Step D: Implementing adaptation action		
8 Mainstreaming adaptation in planning processes		
8a	Consideration of climate change adaptation has been included in the national frameworks for environmental impact assessments	Yes / No
8b	Prevention/preparedness strategies in place under national disaster risk management plans take into account climate change impacts and projections	Yes / No
8c	Key land use, spatial planning, urban planning and maritime spatial planning policies take into account the impacts of climate change	Yes / No
8d	National policy instruments promote adaptation at sectoral level, in line with national priorities and in areas where adaptation is mainstreamed in EU policies	Yes / In progress / No

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Adaptation Preparedness Scoreboard		
No.	Indicator	Met?
8e	Adaptation is mainstreamed in insurance or alternative policy instruments, where relevant, to provide incentives for investments in risk prevention	Yes / No
9 <i>Implementing adaptation</i>		
9a	Adaptation policies and measures are implemented, e.g. as defined in action plans or sectoral policy documents	Yes / In progress / No
9b	Cooperation mechanisms in place to foster and support adaptation at relevant scales (e.g. local, subnational)	Yes / No
9c	Procedures or guidelines are available to assess the potential impact of climate change on major projects or programmes, and facilitate the choice of alternative options, e.g. green infrastructure	Yes / No
9d	There are processes for stakeholders' involvement in the implementation of adaptation policies and measures.	Yes / No
Step E: Monitoring and evaluation of adaptation activities		
10 <i>Monitoring and reporting</i>		
10a	NAS/NAP implementation is monitored and the results of the monitoring are disseminated	Yes / No
10b	The integration of climate change adaptation in sectoral policies is monitored and the results of the monitoring are disseminated	Yes / No
10c	Regional-, sub-national or local action is monitored and the results of the monitoring are disseminated	Yes / No
11 <i>Evaluation</i>		
11a	A periodic review of the national adaptation strategy and action plans is planned	Yes / No
11b	Stakeholders are involved in the assessment, evaluation and review of national adaptation policy	Yes / No