

JASPERS Networking Platform

Promoting climate change adaptation, risk prevention and management in the Water Sector

UK Climate Change Risk Assessment

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“A society which makes timely, far-sighted and well-informed decisions to address the risks and opportunities posed by a changing climate”

Building the UK’s resilience to climate change is an economic, social and environmental challenge that cuts across every sector of society

National Adaptation Programme, 2013

- National Risk Assessment Framework
- Why was the CCRA developed?
- How was it developed?
- What does it say?
- How is it being used?
- When will it be updated?
- Lessons for other Member States

National Risk Assessment Framework

 **CabinetOffice**

Keeping the Country Running: Natural Hazards and Infrastructure

A Guide to improving the resilience of critical
infrastructure and essential services

National Risk Assessment – confidential

 **CabinetOffice**

National Risk Register of Civil Emergencies

2012 edition

UK Climate Change Risk Assessment: Government Report

In addition to this Government Report, the UK
Climate Change Risk Assessment 2012
Evidence Report, which sets out the evidence base
for the risk assessment, was laid before Parliament
on 25 January 2012.

January 2012

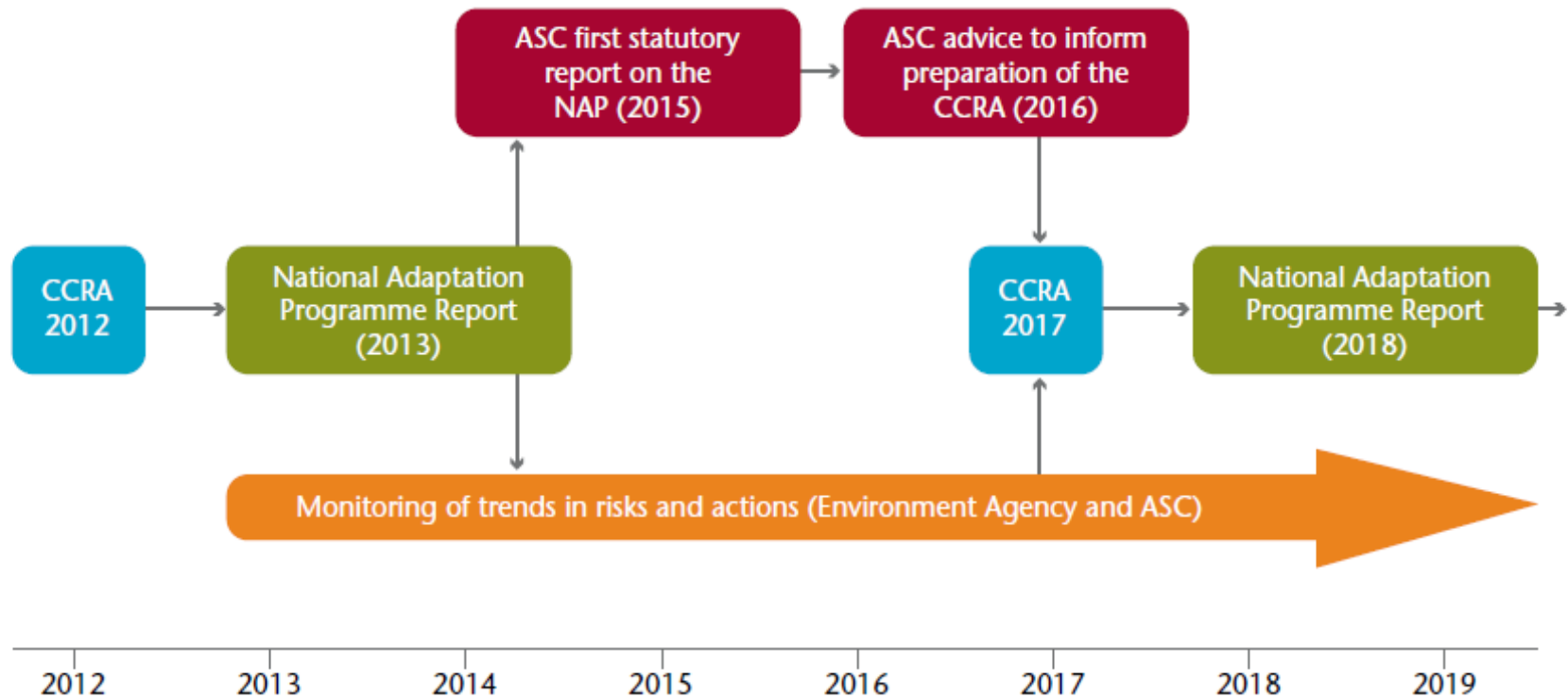
www.defra.gov.uk

- National Risk Assessment
 - Most significant risks over next 5 years - natural events, major accidents & malicious attacks
 - Confidential due to security concerns, produced annually
- National Risk Register - 2012
 - Public version of the risk assessment
 - Highest priority risks: pandemic influenza, coastal flooding, catastrophic terrorist attacks, severe effusive volcanic eruptions abroad
- Keeping the Country Running (Guide) - 2011
 - Aims to improve the resilience of infrastructure against natural hazards
 - Guidance on responding to flooding, wind, cold, heat, volcanic eruptions, severe space weather

Why was the CCRA developed?

- Climate Change Act 2008 specifies that a CCRA should be carried out every 5 years
- Recognition that even if emissions reduce, inertia in the climate system means some climate change is inevitable
 - need to assess risks & decide what to do about them
- Building resilience is a long-term investment, but need to start now
 - particularly for long term investment e.g. infrastructure
- Purpose is to:
 - compare the risks posed by a changing climate over the next 80 years, prioritise & compare these risks
 - provide evidence to support Government plus businesses, local authorities & others in making adaptation policy & practice decisions

Climate Change Act established 5 year cycle of assessments followed by policy response



Climate projections (UKCP09, periodically updated)



Climate Change risk assessment (CCRA) (2012 & every five years thereafter)



National Adaptation Programme (2013 & every five years thereafter)

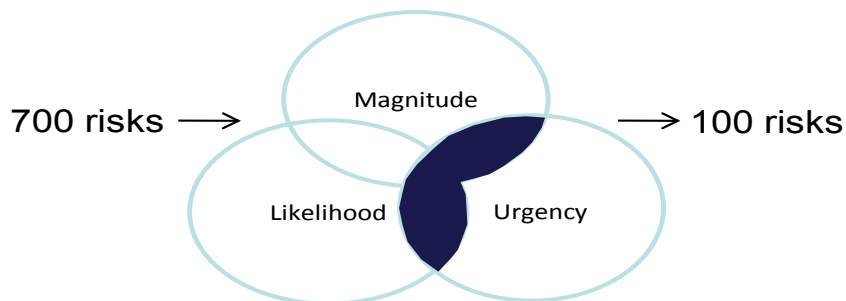


ASC report to Parliament every 2 years (starting in 2015)

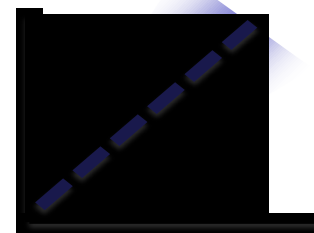
How was it developed?

CCRA 1: Overview of methodology

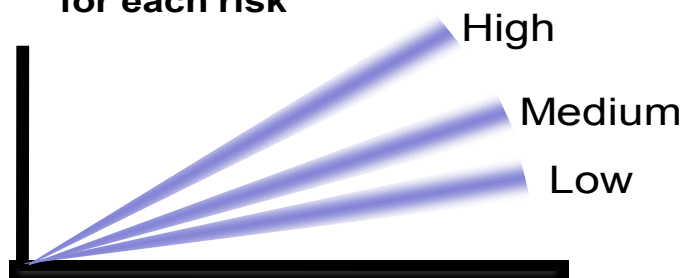
1. Choose priority risks



2. Assess sensitivity of each risk to current climate



3. Add projections of future climate/ population for each risk



4. Assign magnitude (logarithmic scale) and confidence scores to each risk

Magnitude	Low	Medium	High
Social	100s	1000s	Millions
Economic	£1 M	£10 M	£100 M
Env.	100km	1000km	10,000km

CCRA 1 does not quantify all the potential risks



	Direct effects	Indirect effects	Major effects & discontinuities
International Other international effects of concern	Loss of small island states	Security & Conflict	Large scale global tipping points
UK (imported) Impacts in the UK from international effects	Tourism revenue	Price effects e.g. agriculture	Migration
UK (domestic) Impacts arising directly in the UK	CCRA focus	Cross- sectoral, wider economic	Major sea level rise, H++ scenario

Source: Paul Watkiss Associates for ASC (2012)

- Funded by a partnership between the UK Government & Devolved Governments
- Delivered through a consortium of organisations led by consultants
- Results peer reviewed by scientific & economics experts & scrutinised by the Adaptation Sub-Committee (ASC) of the Committee on Climate Change (CCC)
 - CCC - independent body established under 2008 Climate Change Act to advise the UK & Devolved Governments on tackling & preparing for climate change
 - ASC sets the direction for adaptation matters including independent advice on preparing for climate change

What does it say?

- Not one document, but many!
 - Evidence report, method report, recommendations report
 - Individual risk assessments for England, Northern Ireland, Scotland, Wales
 - Individual risk assessments for 11 sectors:
 - Agriculture; Biodiversity & Ecosystem Services; Built Environment; Business, Industry & Services; Energy; Floods & Coastal Erosion; Forestry; Health; Marine & Fisheries; Transport; Water
 - Results presented in 5 themes:
 - Agriculture & Forestry; Business; Health & Wellbeing; Buildings & Infrastructure; & Natural Environment.

Opportunities	Risks
<ul style="list-style-type: none">• Reduced cold mortality• Energy savings• Agriculture• Tourism	<ul style="list-style-type: none">• Flooding• Water shortages• Heat mortality• Energy for cooling• Pests and diseases

- Agriculture & Forestry
 - summer soil moisture deficits & increased competition for water resources, crop losses due to flooding, drier conditions & increase in drought will impact timber & agriculture production
- Business
 - flooding & coastal erosion; increased competition for water, energy & materials; & disruption of transport networks & communication links
 - will particularly affect businesses which rely on large fixed assets (especially near main rivers or the coast), have complex supply chains & rely substantially on natural assets
- Health & Wellbeing
 - increased risk of deaths, injuries & people suffering from mental health issues as a result of flooding; potential impacts of water borne diseases

- Buildings & Infrastructure
 - Energy: risk of flooding, increased demand for water generation & cooling
 - Transport: risk of flooding, scour risk for bridges
 - Water: supply-demand deficit
 - Buildings: damage to properties as a result of flooding & subsidence
- Natural Environment
 - low water levels & reduced river flows leading to increased agriculture, sewage & air pollution damaging ecosystem services including freshwater habitats
 - soil moisture deficits & erosion impacting biodiversity & soil carbon & increasing risk of wildfires
 - flooding & coastal erosion impacting on ecosystem services including key coastal habitats

How is it being used?

- UK Government & devolved administrations have produced National Adaptation Programmes
 - The National Adaptation Programme: Making the Country Resilient to a Changing Climate published by HM Government, July 2013
 - Northern Ireland Climate Change Adaptation Programme adopted by the Northern Ireland Assembly – January 2014
 - Draft Scottish Adaptation Plan published 2013 for consultation: final version due to be published later this year
 - Welsh Climate Change Strategy & Adaptation Delivery Plan to be replaced by policies & programmes following Wellbeing of Future Generations (Wales) Bill (2014)
- Environment Agency established the Climate Ready support service
- Infrastructure organisations, local authorities & businesses using CCRA to develop their own projects to improve resilience

When will it be updated?

When & how will it be updated?

- Commitment to update on a 5 year cycle
- Process to update 2012 version has started
- CCRA 2017 will be a smaller more focused exercise
 - will link climate change with other socio-economic change & consider how climate change overseas could impact the UK
- Adaptation Sub-Committee is responsible for producing the next updated CCRA
 - community research programme led by academia
 - based on secondary data with some new research concerning assessment of flood risk, water quality, natural capital & high end climate projections

Lessons for other Member States

- Focus on the priority risks
 - those most likely to have the biggest impact in the most immediate future
- Draw together knowledge from a comprehensive range of stakeholders
 - academia, local & national government, infrastructure providers, businesses
- Ensure that the final document is relevant to a range of audiences
 - easy to understand backed up by technical information
- Provide a clear route map of what will happen next
 - action resulting from the CCRA (adaptation planning) & updating the CCRA



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