Forest Research

A first national assessment of climate change risks for forestry in the UK

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UK 2012 Climate Change Risk Assessment

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Contents

- Political background of CCRA
- Purpose, scope, context
- The CCRA process
- Findings for UK forestry
- Conclusions

Genesis of UK adaptation policy

Kyoto Protocol (1998)

United Nations
Framework Convention on
Climate Change

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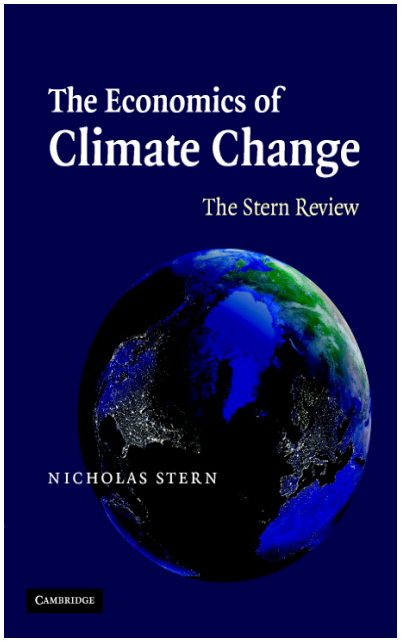

The Stern Report (2006)

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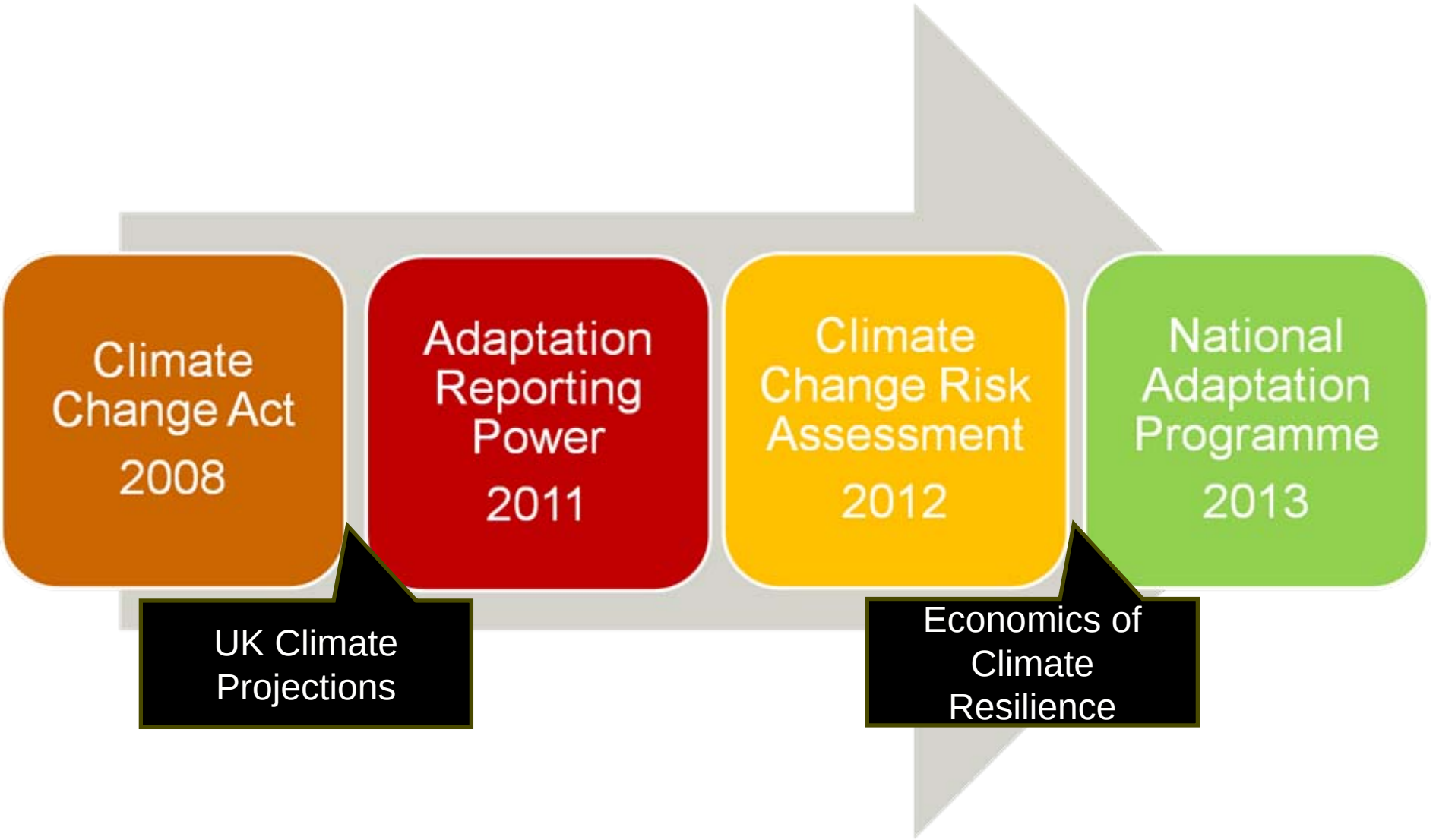
Climate Change Act (2008)

(the legal framework for adaptation policy in the UK)

UK adaptation ‘process’



CCRA purpose

Purpose

- UK's first comprehensive assessment of climate risks & opportunities across sectors - current, and future up to 2100 – based on **magnitude** of the **impact** and confidence in the evidence base
- Help prioritise the National Adaptation Programme – due 2013

From CCRA Launch, London, Jan 2012

CCRA scope

Scope

- Science & evidence based – existing data + new analysis
- Method is novel - allowed UK to compare over 100 risks (prioritised from an initial list of over 700) from a number of disparate sectors
- Land and marine, range of sectors and geographical areas analysed in a comparative way
- Uses UKCP09 to explore different climate scenarios across sectors

From CCRA Launch, London, Jan 2012

CCRA context

Context

- CCRA **does not take planned adaptation policies into account-** it provides a baseline level of risk on which to test different options
- First in a 5 year cycle
- Provides a framework for future research and prioritisation of where adaptation is needed.
- Paves the way for UK to ensure it is resilient to climate change, and to invest in adaptation technologies/ skills (business opportunities)

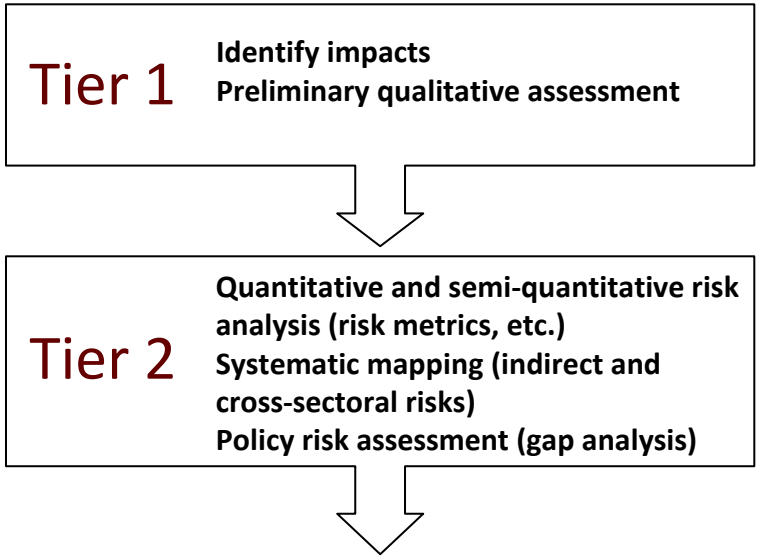
From CCRA Launch, London, Jan 2012

UK Climate Change Risk Assessment

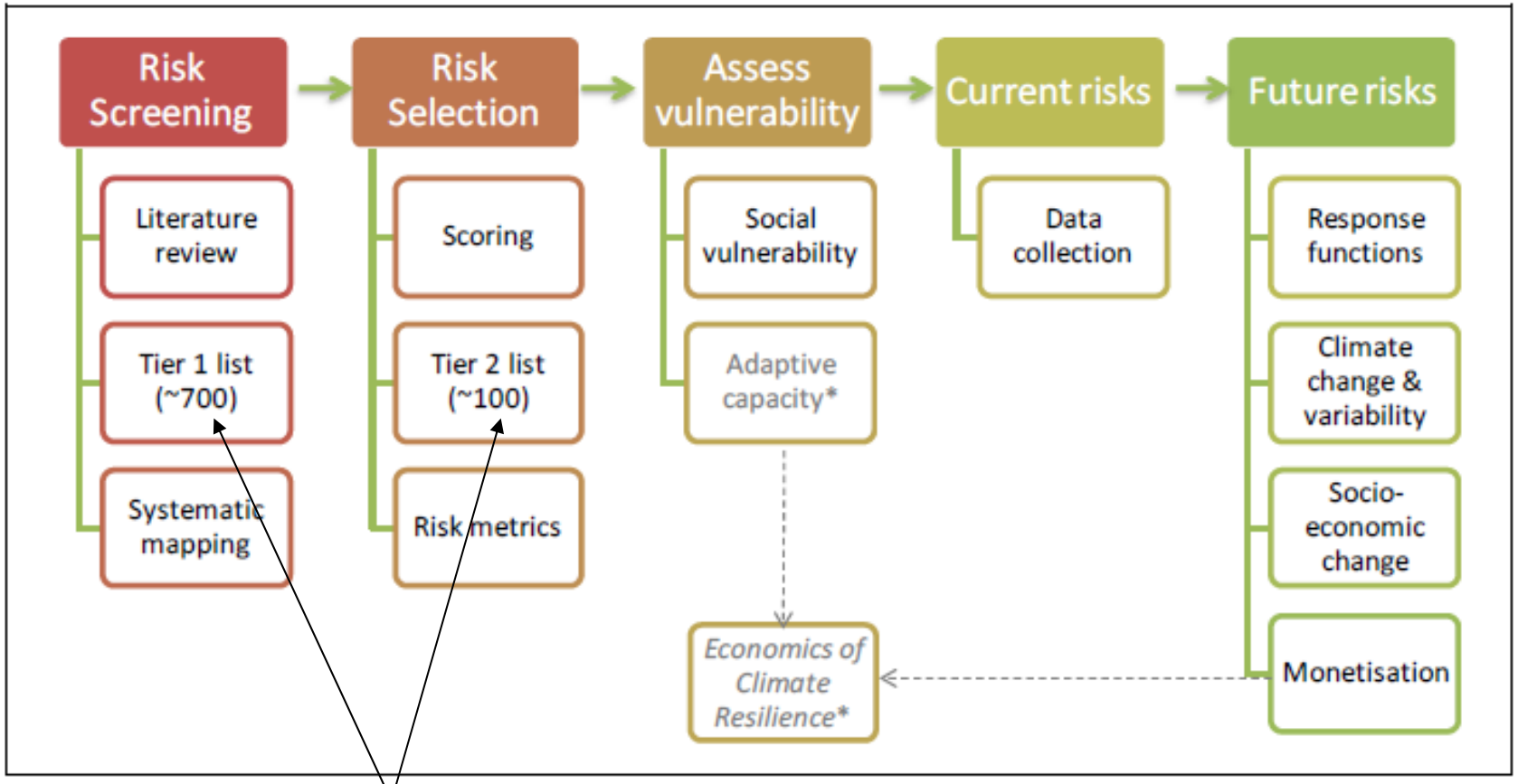
- "To undertake an assessment of the risks (including opportunities) from climate change to those things that have **social, environmental and economic value in the UK**, to help the Government create an enabling environment for the UK **to adapt and identify priorities for action**."

- Understand the risks posed by climate change

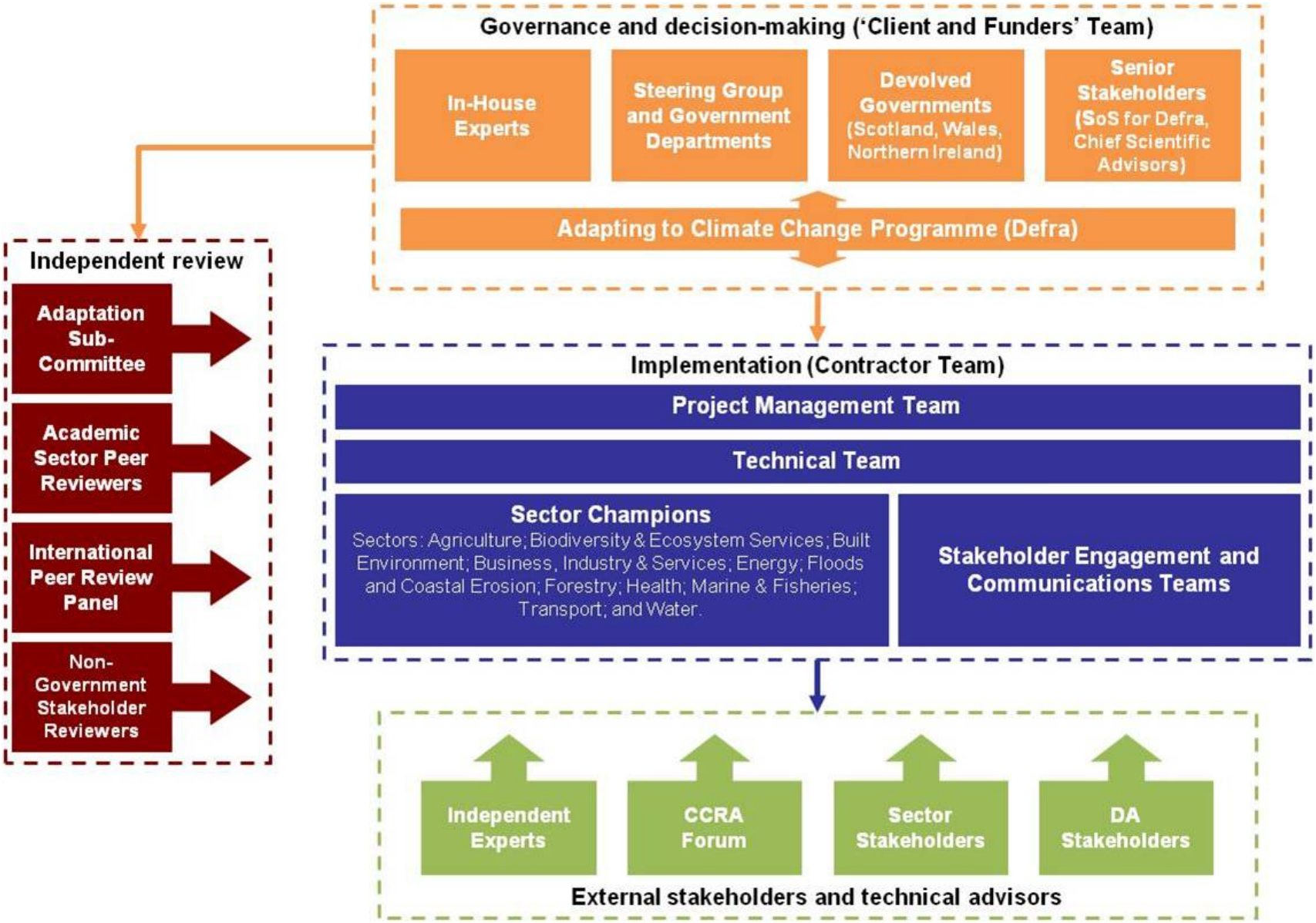
- Compare with other pressures on Government



CCRA methodology



CCRA project management



Pests and pathogens

Majority of forest pests likely to benefit from climate change.
May be exacerbated by drought stress and windthrow.
Particular threats are from RBNB, *Phytophthora ramorum*, and green spruce aphid.

Confidence

M Threat from red band needle blight: over 50% of pine forests in Britain, including native Scots pine, could be affected by the 2050s and all pine forests (totalling over 400,000 ha) could be affected by the 2080s (current figure: around 10% affected; potential increase in economic cost up to £12 million/year by the 2080s).

M Threat from green spruce aphid: by the 2080s, the area of British spruce forest affected could more than double from the present day figure of around 80,000 ha (potential increase in economic cost up to £17 million/year by the 2080s).

Drought risk

Dry summers can cause serious and widespread drought damage to trees

Confidence

M

Losses in timber yield due to drought: currently 14% in south-east England and 10% in Wales and northern Scotland, rising to 12-26% in south-east England, 11-29% in Wales and 10-23% in northern Scotland by the 2080s.[5]

Tree species suitability

The changing climate is expected to have substantial impacts on tree species suitability - in terms of both growth and survival

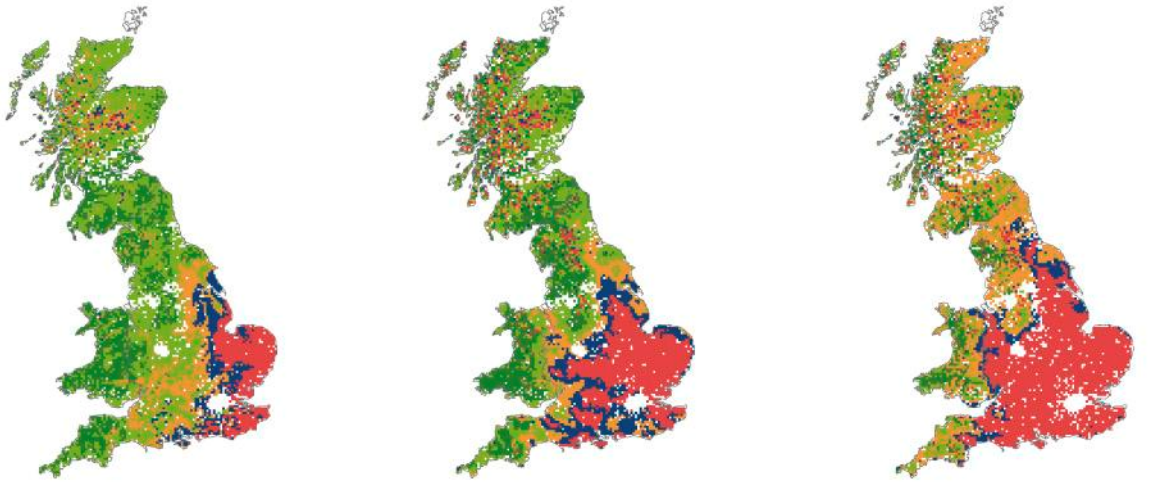
Confidence

M Change in yield class[3] for Sitka spruce: by the 2080s, productivity in south-west England is projected to decline by around 10 m^3/ha/year (current productivity: 18 m^3/ha/year), while in the Grampian region productivity is projected to increase by more than 3 m^3/ha/year (current productivity: 13 m^3/ha/year).

M Change in yield class for beech: by the 2080s, productivity in south-east England is projected to decline by around 5 m^3/ha/year (current productivity: 7 m^3/ha/year).

Ecological Site Classification, ESC

Sitka spruce



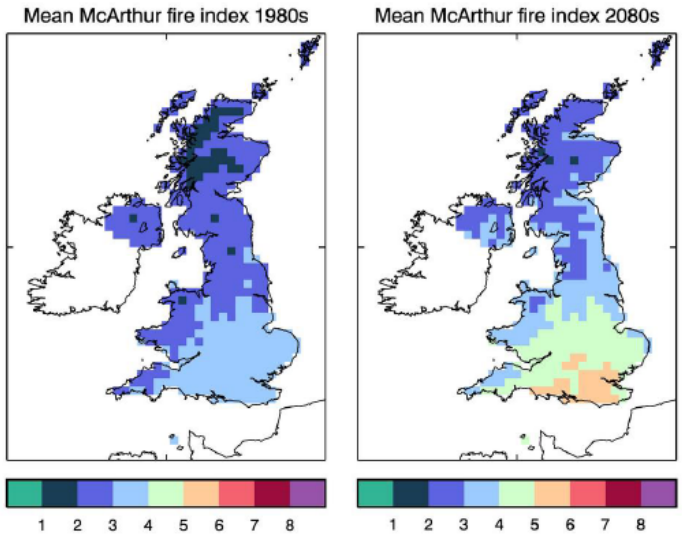
Baseline | 2050 Low emissions scenario | 2050 High emissions scenario

www.forestry.gov.uk/fr/esc

Fire risk

Increasing trend of fire frequency over last three decades. Most forest fires in conifer plantations.

Increased drought, air temperature and wind increase the occurrence and magnitude of fires.



1 = fire will not burn; 5 to 12 = 'moderate' risk.

Confidence

M

Increased risk of wildfires in British National Parks: between 30% and 50% by the 2080s.

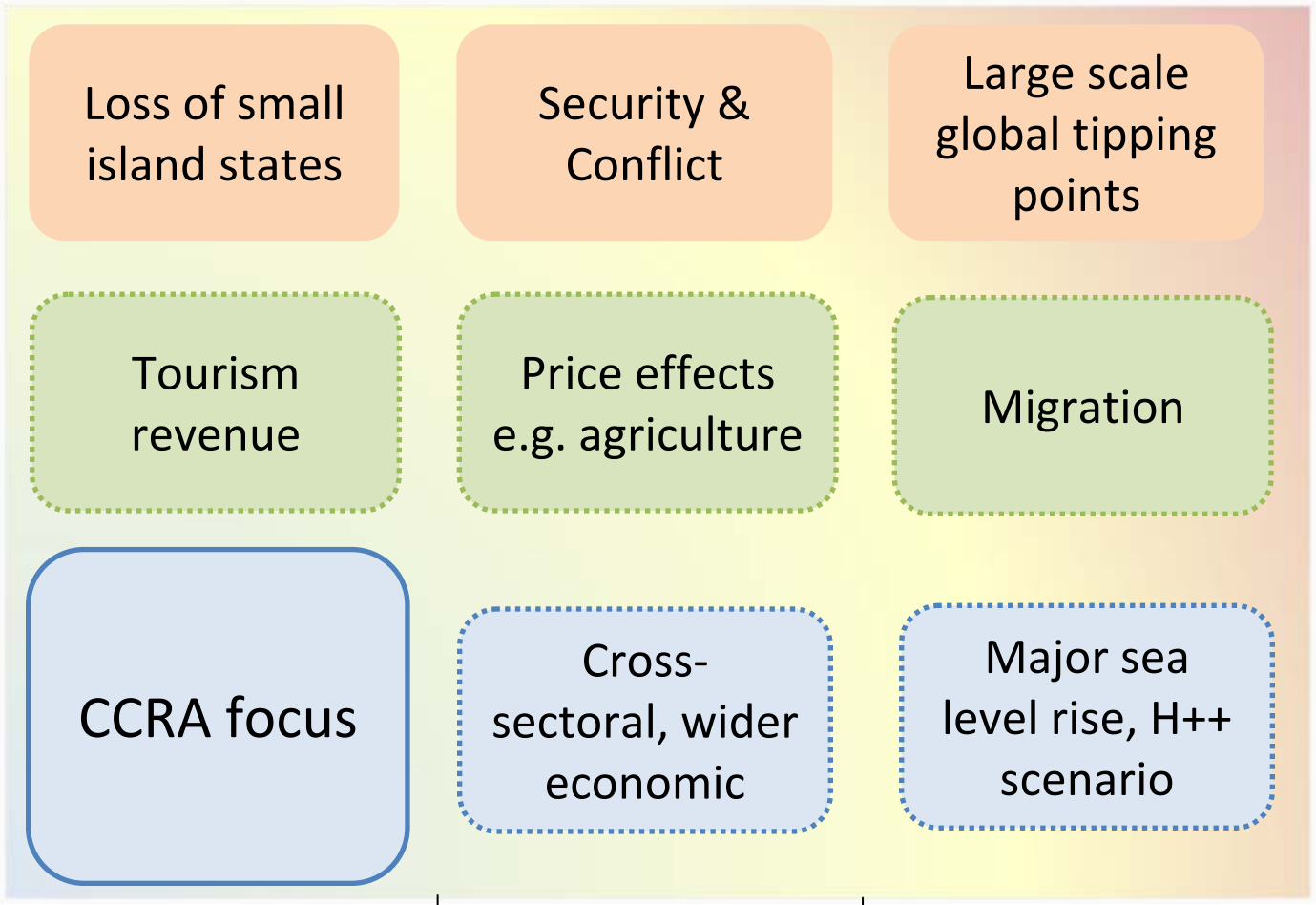
Media response

The Climate Change risk landscape

International
Other international effects of concern

UK (imported)
Impacts in the UK from international effects

UK (domestic)
Impacts arising directly in the UK



Source: Paul Watkiss Associates for ASC (2012)

Observations from CCRA process

- CCRA reflects a large governmental 'push' on need to understand risk and adaptation need. Quick (and dirty?) but a large and necessary step forward
- Large multidisciplinary project – bringing together a range of sectors, stakeholders and academics
- Common definition of risk – valuable for consideration of CC alongside other risks managed by Government
- A strong platform from which to organise adaptation policy in Britain –already good evidence that it is having this effect
- The international impact on national climate change risks needs further development
- Valuable in identifying important knowledge gaps / research needs
- Further work on effects of extreme climate needed for CCRA2

THANKS FOR LISTENING!
ANY QUESTIONS?

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www.defra.gov.uk/environment/climate/government/risk-assessment/