

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

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UK
2012 | Climate
Change
Risk
Assessment



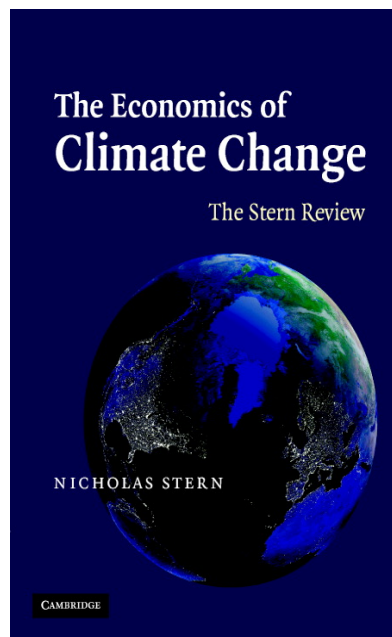
- Political background of CCRA
- Purpose, scope, context
- The CCRA process
- Findings for UK forestry
- Conclusions

Kyoto Protocol (1998)



United Nations
Framework Convention on
Climate Change

+



The Stern Report (2006)

⇒

Climate Change Act (2008)

(the legal
framework for
adaptation
policy in the
UK)



The diagram illustrates the UK adaptation process as a sequence of four colored boxes (orange, red, yellow, green) arranged horizontally, each representing a key event. Below the first and third boxes are callout boxes. A large grey arrow in the background points from left to right, indicating the progression of time.

Climate Change Act
2008

UK Climate
Projections

Adaptation
Reporting
Power
2011

Climate
Change Risk
Assessment
2012

Economics of
Climate
Resilience

National
Adaptation
Programme
2013

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

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

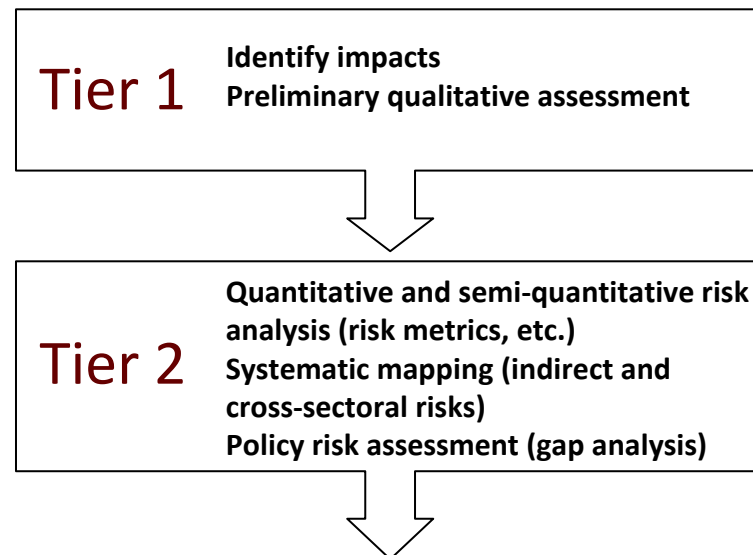
From CCRA Launch,
London, Jan 2012

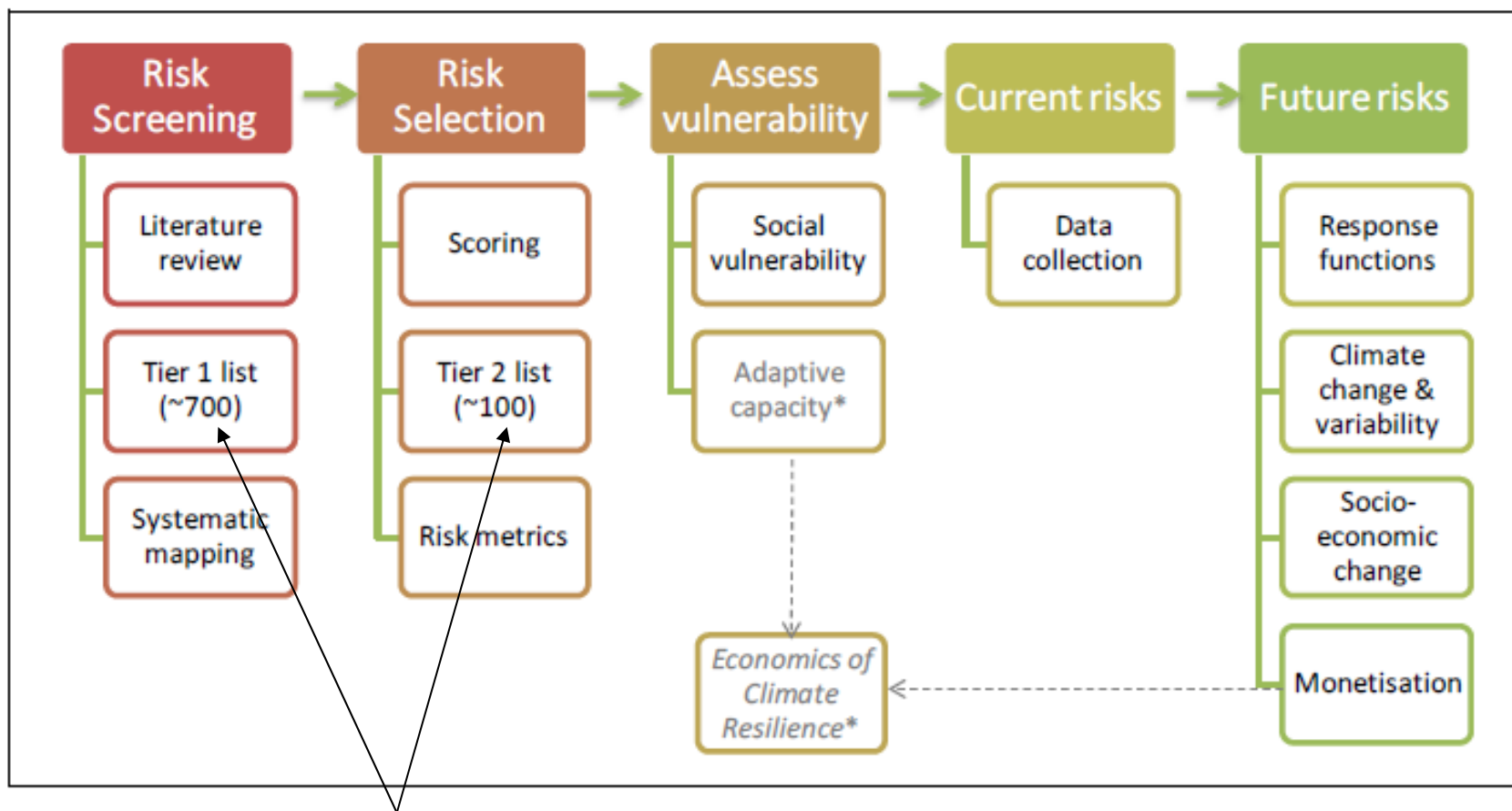
Context

- **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)

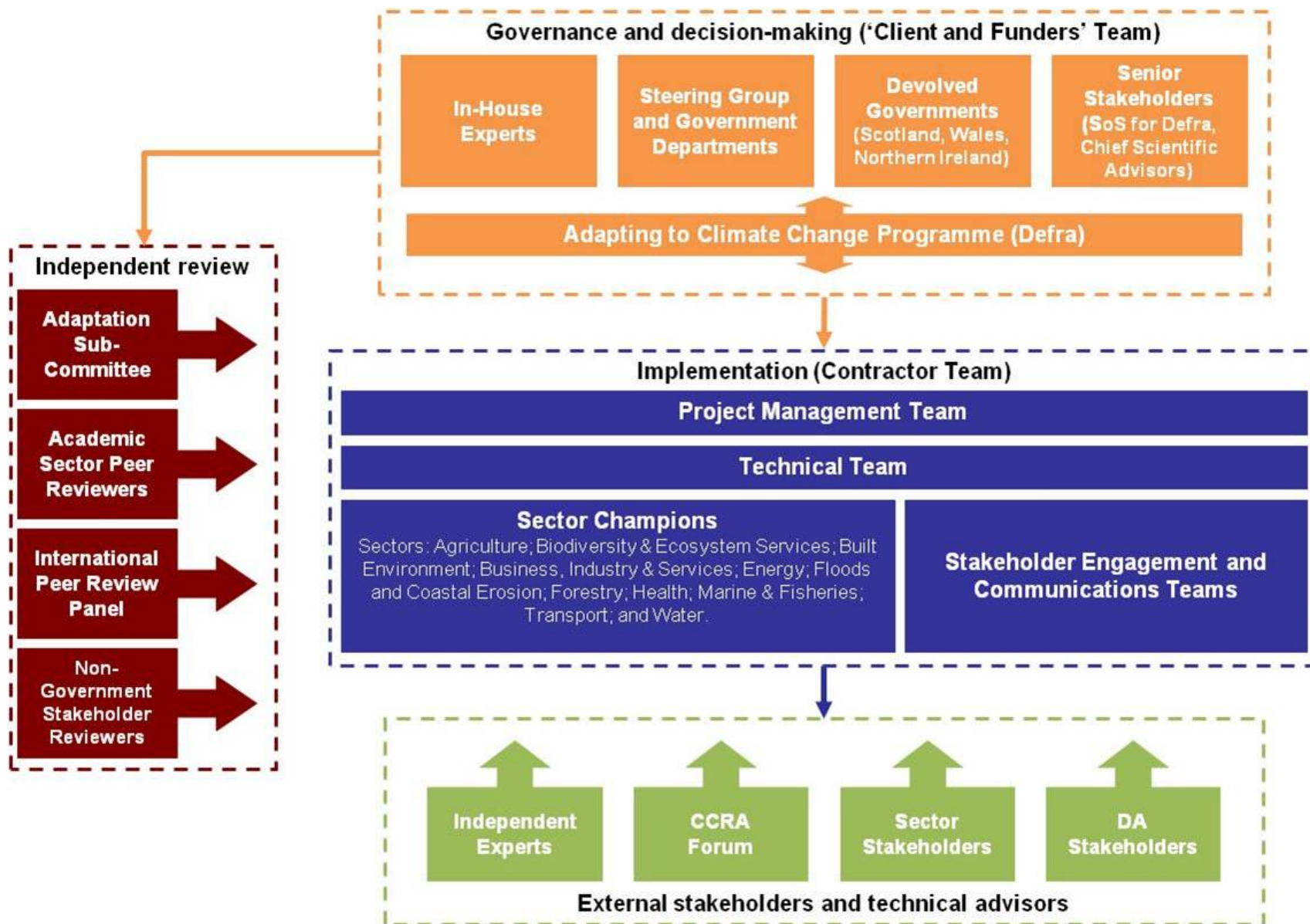
From CCRA Launch,
London, Jan 2012

- “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





Across **eleven** sectors!



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).



Dry summers can cause serious and widespread drought damage to trees

Confidence



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



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

Ecological Site Classification, ESC

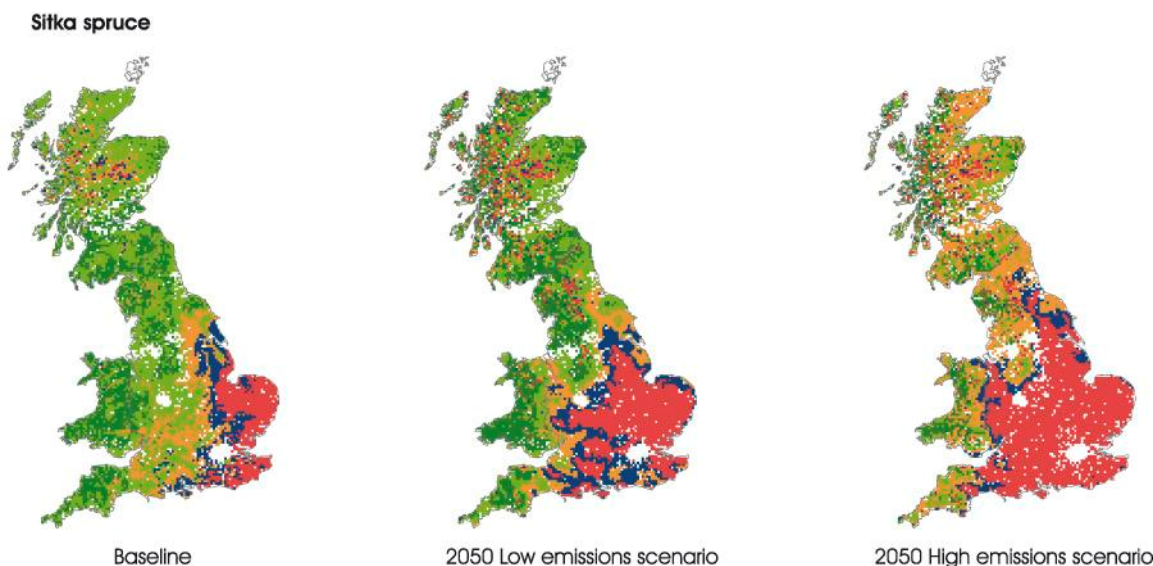
Confidence

M

Change in yield class³ for Sitka spruce: by the 2080s, productivity in south-west England is projected to decline by around 10 m³/ha/year (current productivity: 18 m³/ha/year), while in the Grampian region productivity is projected to increase by more than 3 m³/ha/year (current productivity: 13 m³/ha/year).

M

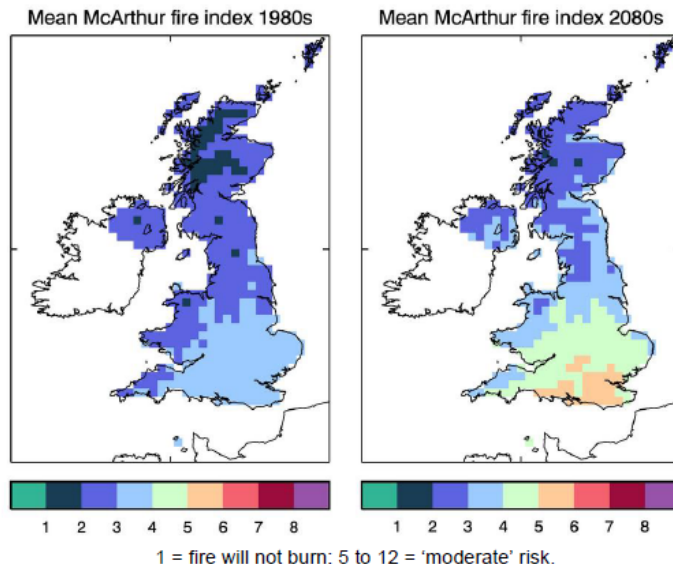
Change in yield class for beech: by the 2080s, productivity in south-east England is projected to decline by around 5 m³/ha/year (current productivity: 7 m³/ha/year).



www.forestry.gov.uk/fr/esc

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.



Confidence



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

UK Climate Change Risk Assessment: Government Report

January 2012

www.defra.gov.uk

 HM Government

MailOnline

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2 months' worth of free car insurance

(Applied as an introductory

Global warming will lead to fresher blueberries, plentiful fish and fewer winter deaths, finds official study (oh yes, and a lot of flooding)

By KATIE SILVER

UPDATED: 16:53, 26 January 2012

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Falling public health costs and fresh produce could be unforeseen upsides to global warming.

A UK government study released today has identified the top 100 effects of climate change and how they may surprisingly impact Britain in the next century.



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From the UK's fastest growing mobile network.

Hotter summers 'may kill 5,900 every year', warns first national risk assessment of climate change

By MAIL ON SUNDAY REPORTER

UPDATED: 02:27, 29 January 2012

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Britain's first national risk assessment of climate change has warned there will be major increases in flooding, heatwaves and water shortages that could kill thousands of people a year.

The Government-funded research called said annual flood damage will cost the UK up to £12 billion by the 2080s if nothing is done to adapt to extreme weather.

British summers will get hotter while winters will be milder and wetter.

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'Habitable' planets found orbiting red dwarf stars in our galaxy - and there could be billions,

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

Direct

Indirect

Major and discontinuities

Source: Paul Watkiss Associates for ASC (2012)

- 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/](http://www.defra.gov.uk/environment/climate/government/risk-assessment/)**