



Committee on  
Climate Change

**Independent** advice to government  
on building a low-carbon economy  
and preparing for climate change

**Tuesday, 26 September 2017**

# UK Climate Change Risk Assessment: international impacts

Daniel Johns  
Head of Adaptation

## Session overview

- The UK Climate Change Act, and role of the Adaptation Sub-Committee
- Latest UK Climate Change Risk Assessment
  - Method
  - Key messages
  - International impacts
- Conclusions

# The Climate Change Act and the CCC

## Climate Change Act 2008

A statutory **2050 target** for emissions reduction (at least -80% vs 1990 levels)

Legally-binding 5-year '**carbon budgets**'

Requirement to develop **policies and proposals** to meet budgets

Establishes the **CCC** as independent advisor

## Committee on Climate Change

**How fast?** Level of 2050 target and carbon budgets

**How?** Sectoral contributions, technologies and policy options

**Monitoring.** Are we on track to meet budgets? Annual progress report to Parliament

+ Adaptation Sub-Committee

# The Adaptation Sub-Committee of the Committee on Climate Change

## Statutory roles under the Climate Change Act:

- To provide independent advice on climate risks and opportunities
- To report to Parliament on progress in preparing for climate change



Baroness Brown  
of Cambridge (chair)



Professor Jim Hall

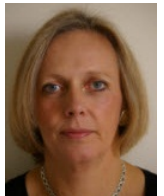


Rosalyn Schofield

Sir Graham Wynne



Ece Ozdemiroglu

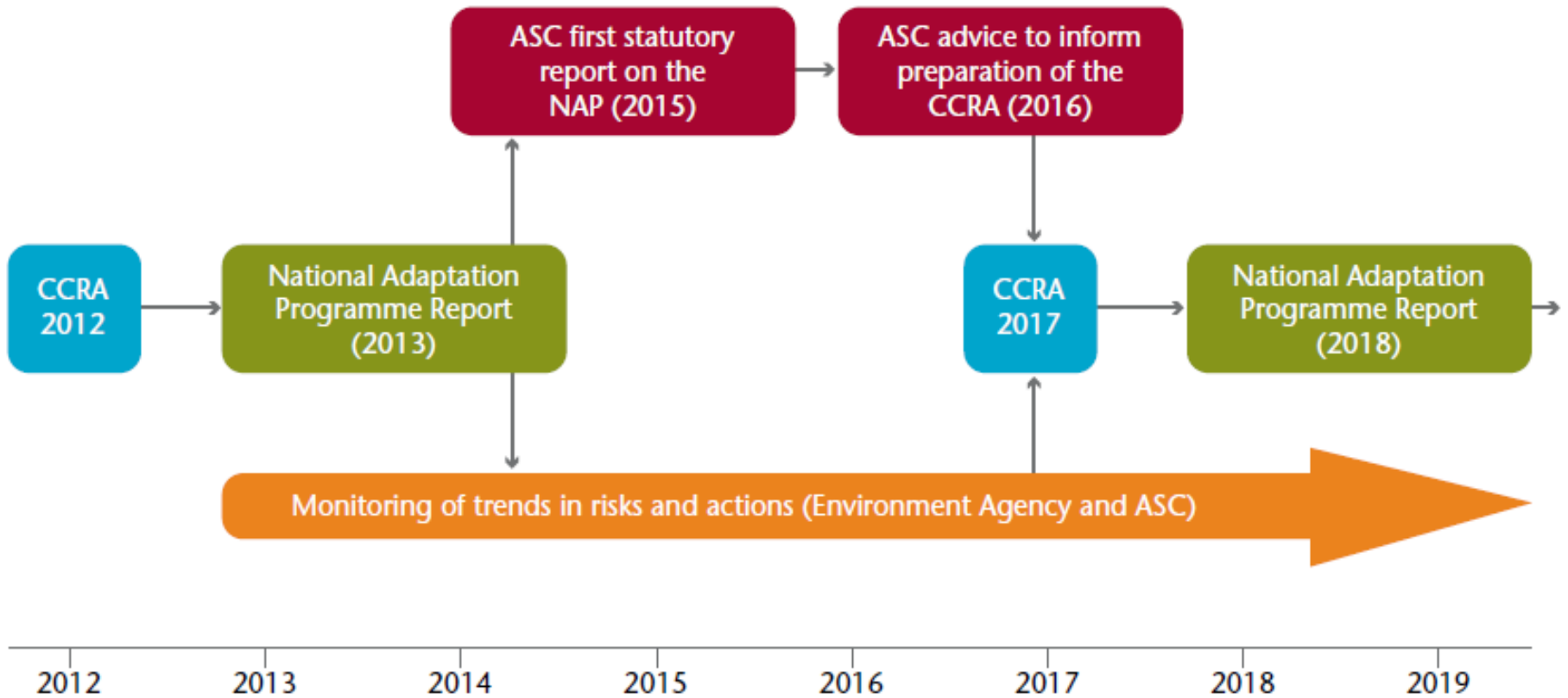


Professor Dame  
Anne Johnson



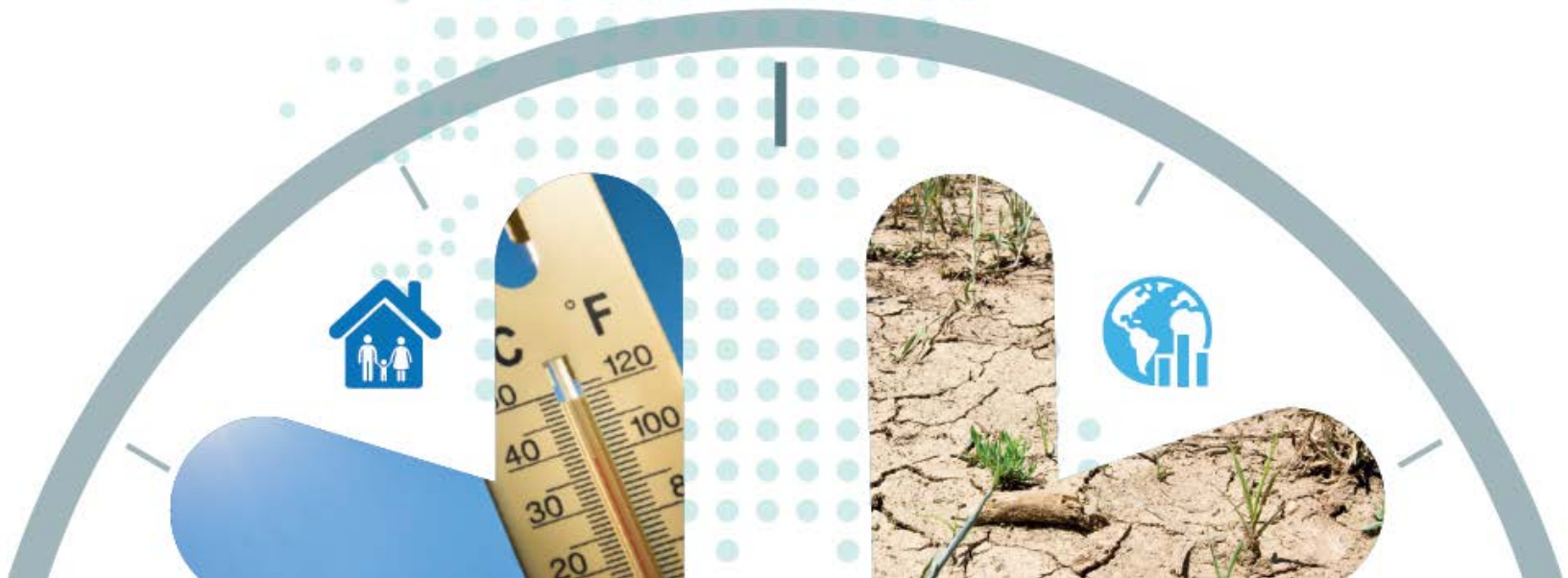


# The UK was the first to establish a legal framework for adaptation



# UK Climate Change Risk Assessment 2017

Synthesis report: priorities for the next five years





## Aim of UK Climate Change Risk Assessment 2017

“Based on an assessment of:

- climate risks and opportunities
- and current adaptation actions

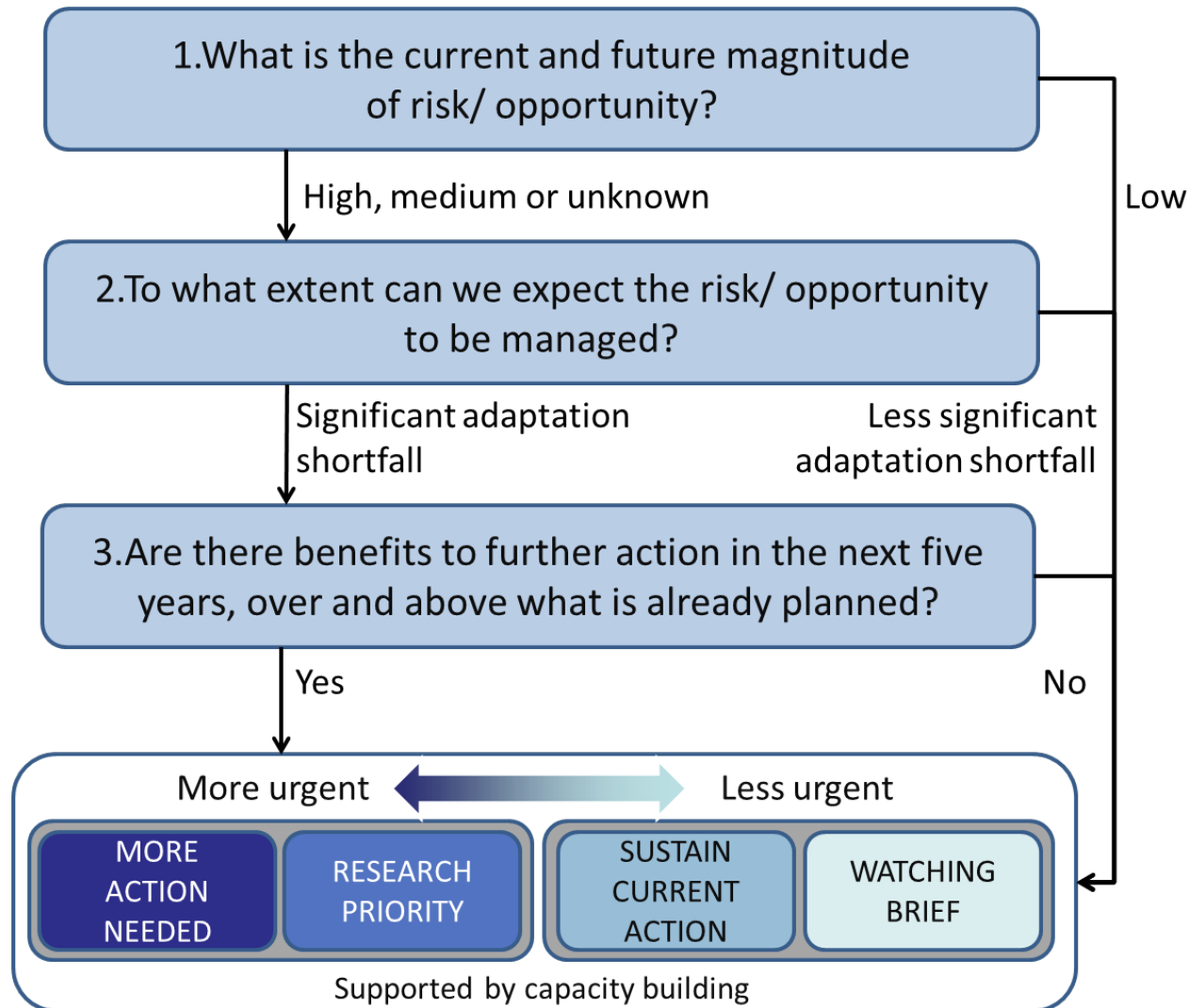
what are the most urgent priorities for the next UK National Adaptation Programme?”

# The most comprehensive assessment of UK risks and opportunities to date

	<b>Direct effects</b>	<b>Indirect effects</b>	<b>Major effects &amp; discontinuities</b>
<b>International:</b> Other international areas of concern	Loss of small island states	Impact on global economy	Large scale global tipping points
<b>UK (imported):</b> Impacts in the UK from international effects	Disruption to trade routes and supply chains	Volatility of food and feedstock prices in the UK	Major shifts in global patterns of food production
<b>UK (domestic):</b> Impacts arising directly in the UK	Flood risks, water scarcity, etc  Focus of CCRA1	Cross- sectoral, wider economic	High++ scenarios, major sea level rise  Focus of CCRA2



# Identifying the most urgent risks/opportunities



# Six priority areas for the next UK National Adaptation Programme



**RISK MAGNITUDE:** LOW MEDIUM HIGH

# "Once in a lifetime" floods in England since 2000

Southern and Northern  
England, Autumn 2000



Yalding, January 2003



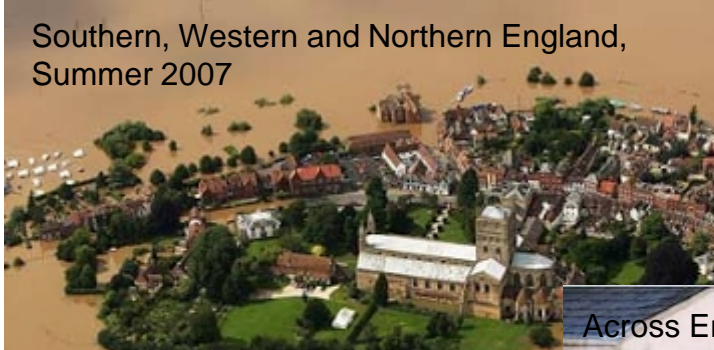
Boscastle  
August  
2004



Carlisle,  
January  
2005



Southern, Western and Northern England,  
Summer 2007



Morpeth, 2008



Cumbria,  
November  
2009



Across England,  
2012



East coast tidal surge,  
December 2013



South-West & Southern England,  
Winter 2013/14



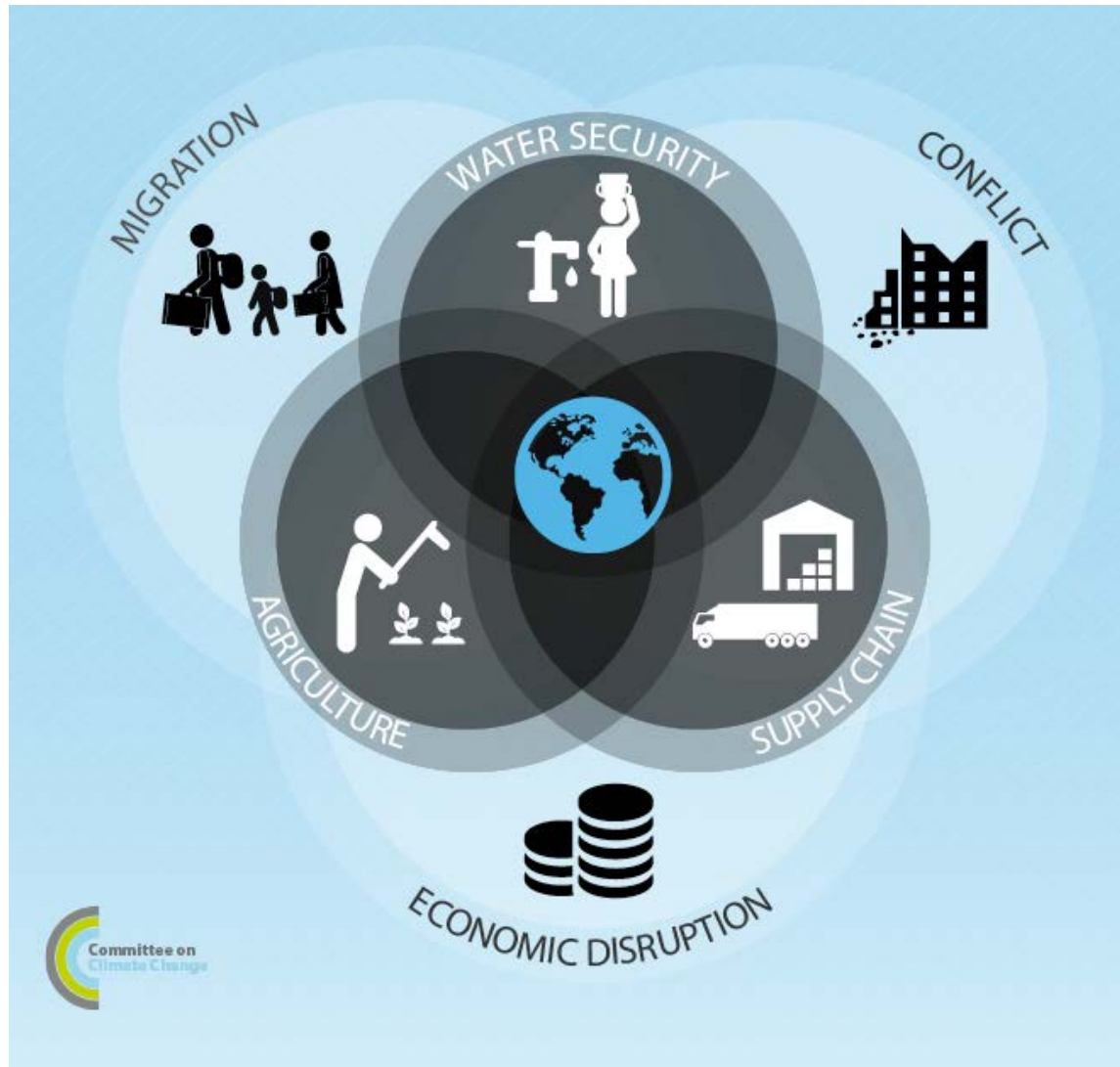
Cornwall,  
November 2010



Northern England  
December 2015



# International climate impacts indirectly affect the UK

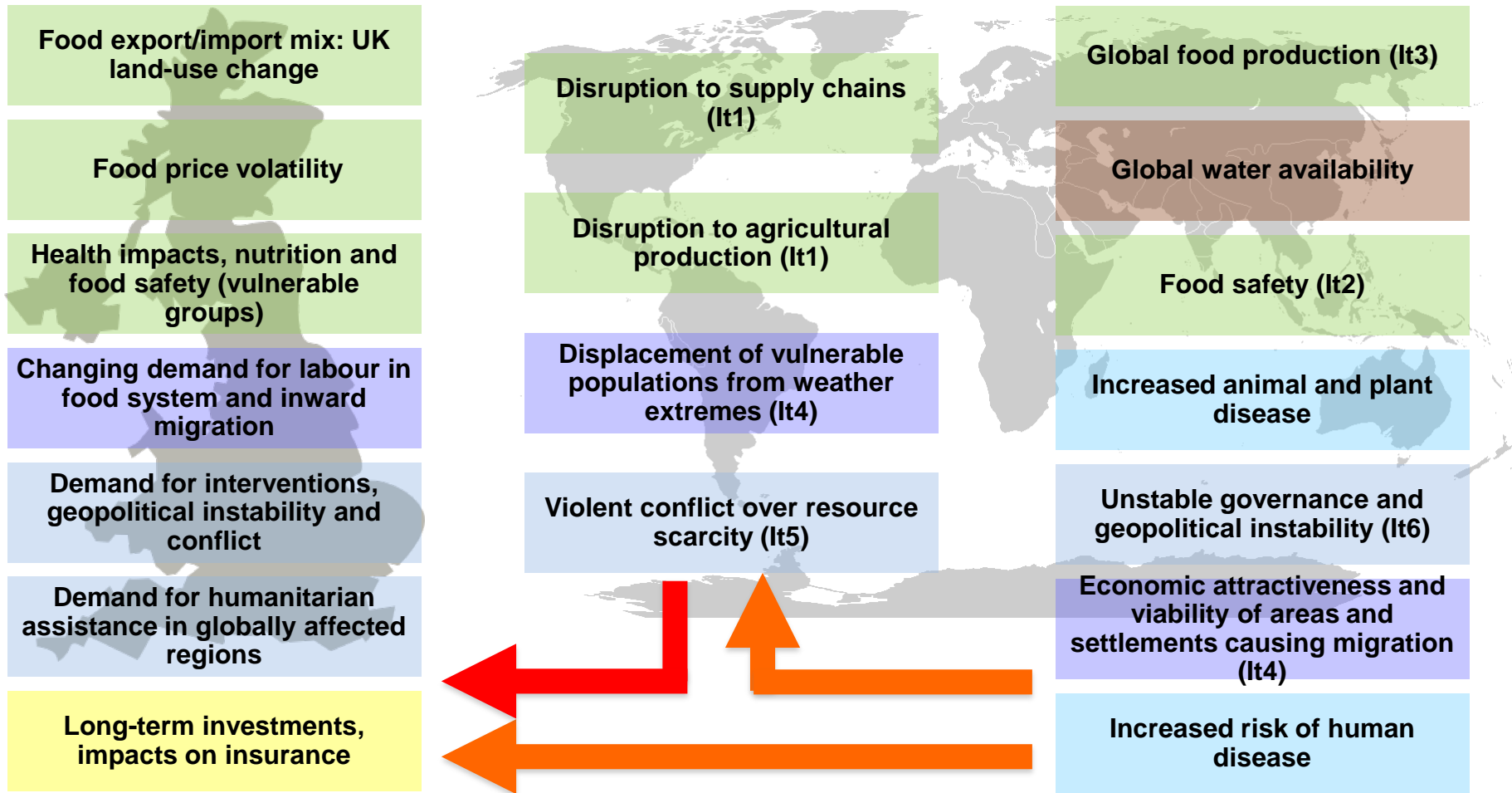


# International dimensions of risk discussed in UK CCRA

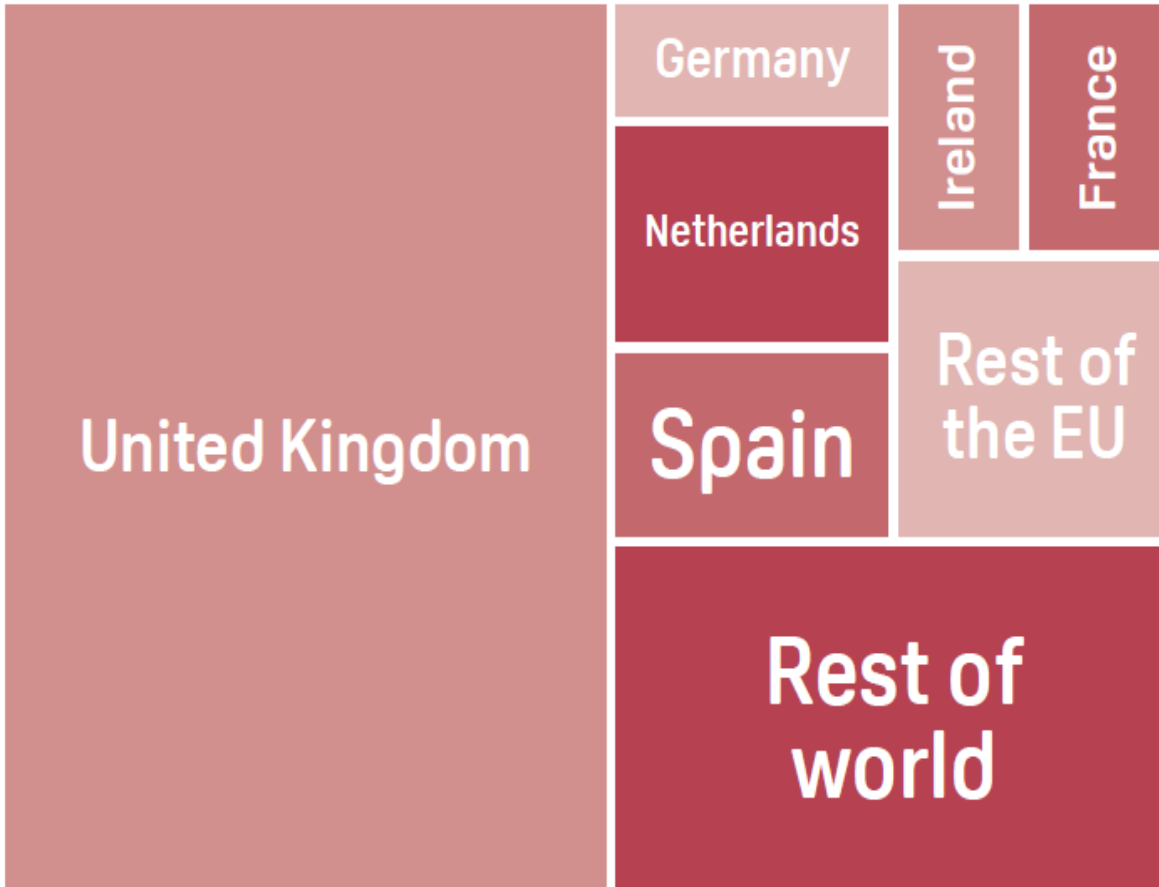
## Impacts on the UK

## Short-term shocks

## Long-term impacts



# Sourcing food from around the world is a strength but also a weakness



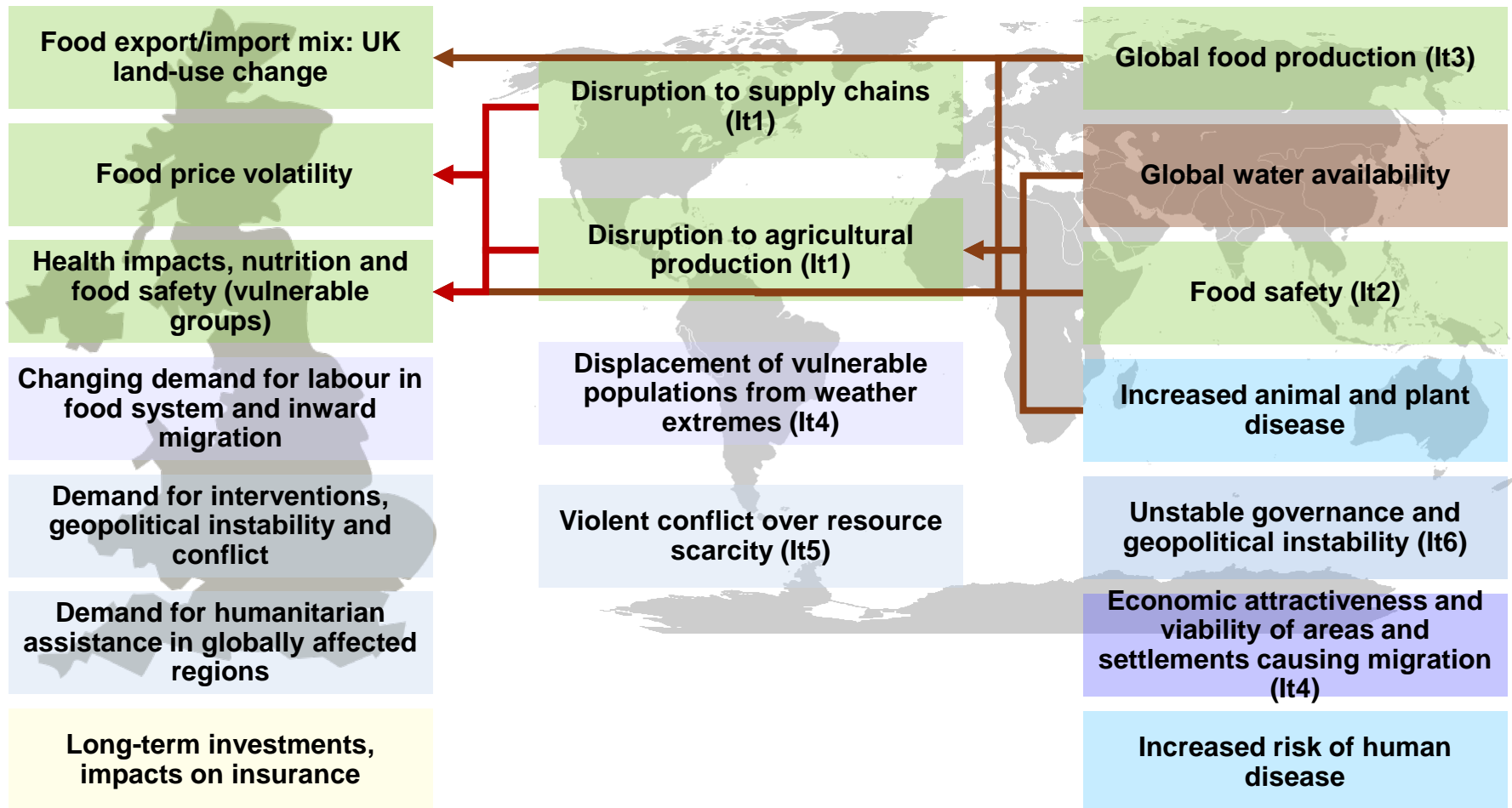
- About half of the farm-gate value of unprocessed food in the UK is imported
- This is a positive aspect of the UK food system as diversification of sources increases resilience
- Climate change can impact both domestic and international food production and trade
- Consuming food from a single source would make the system more vulnerable

# Risks to the global food system

## Impacts on the UK

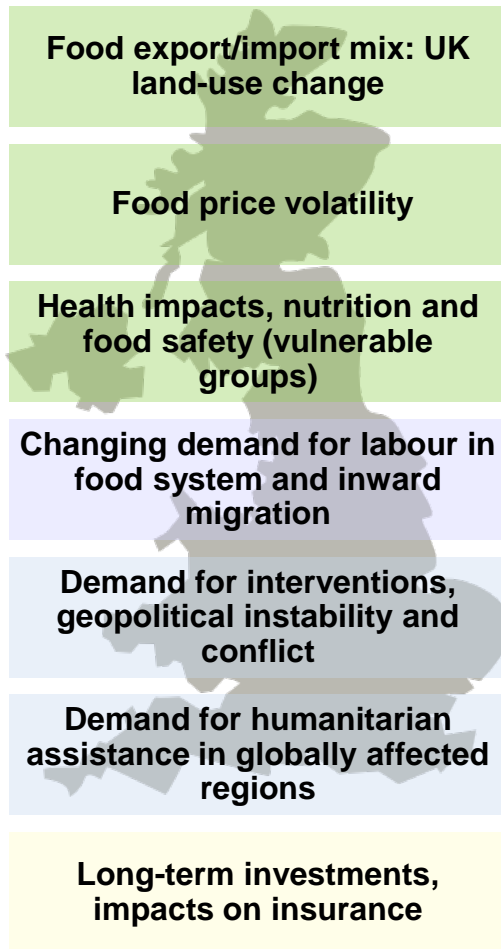
## Short-term shocks

## Long-term impacts

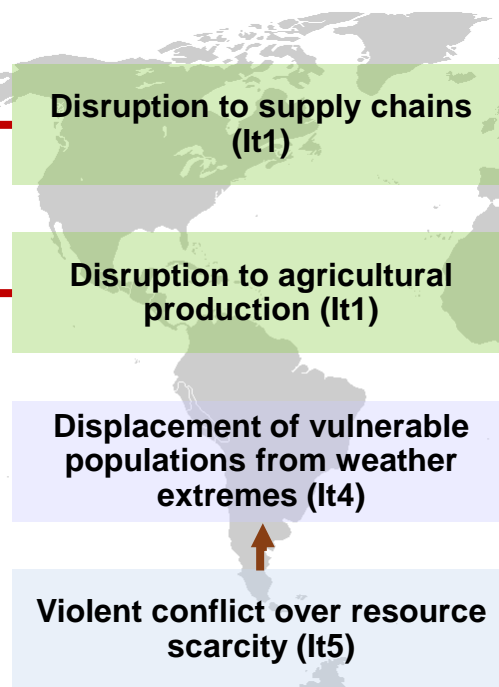


# Potential for indirect impacts on food prices too

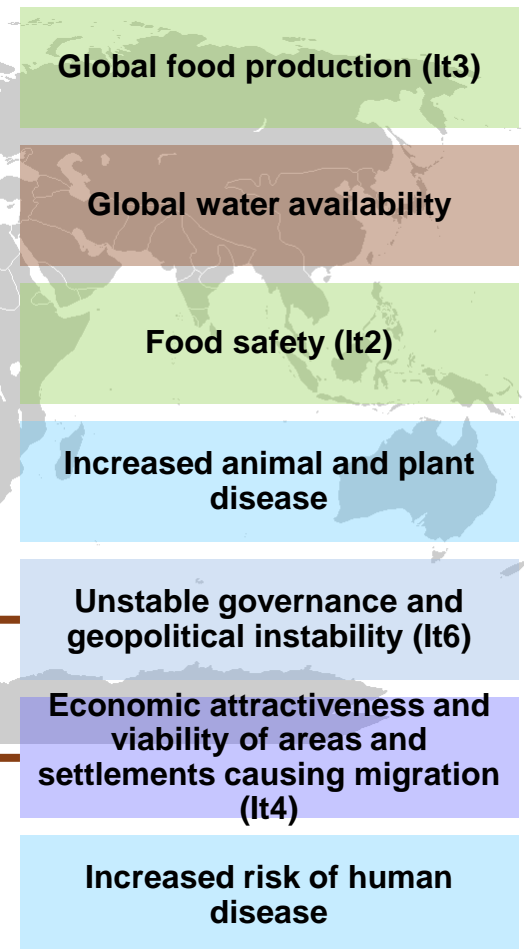
## Impacts on the UK



## Short-term shocks



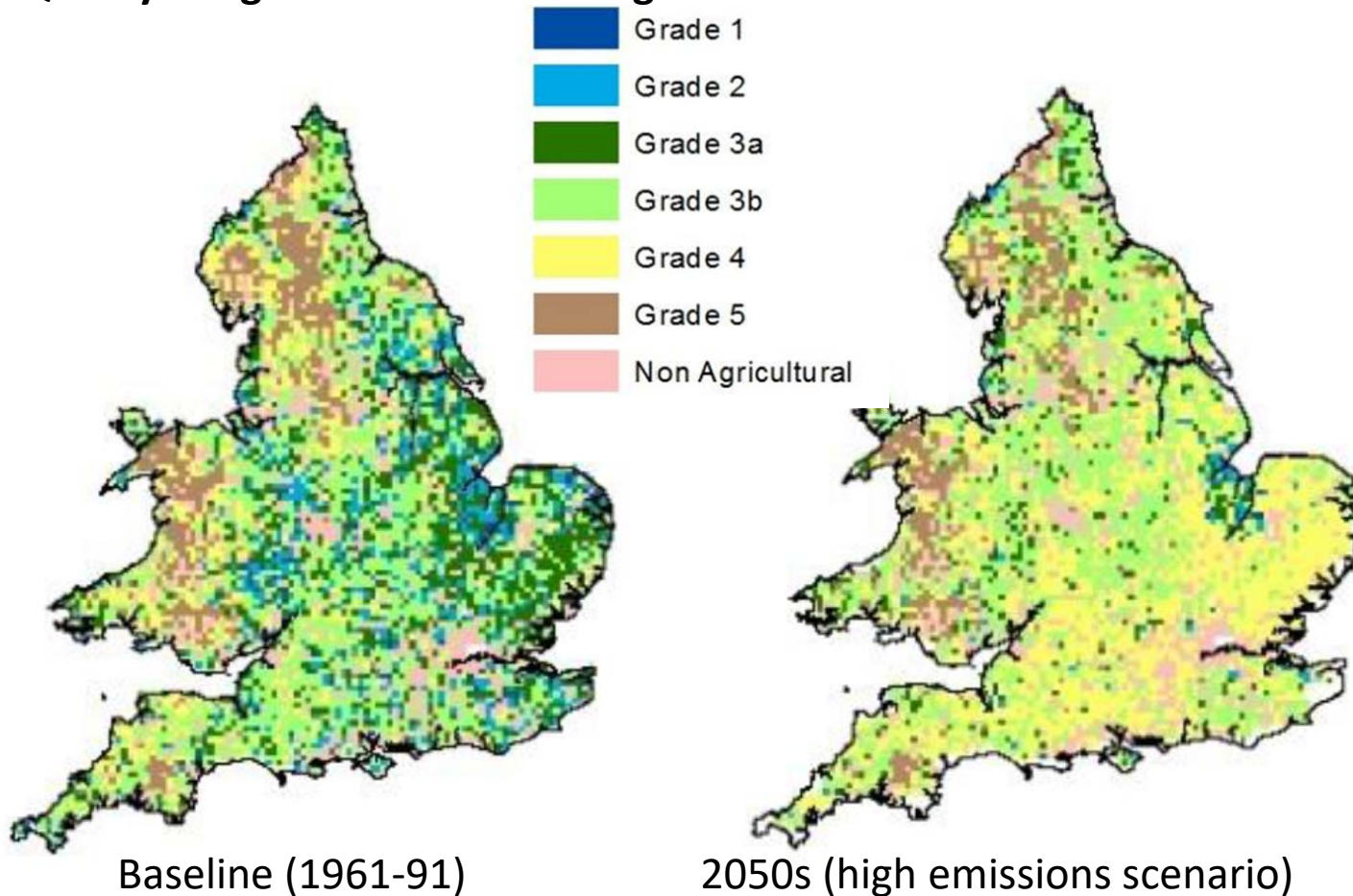
## Long-term impacts





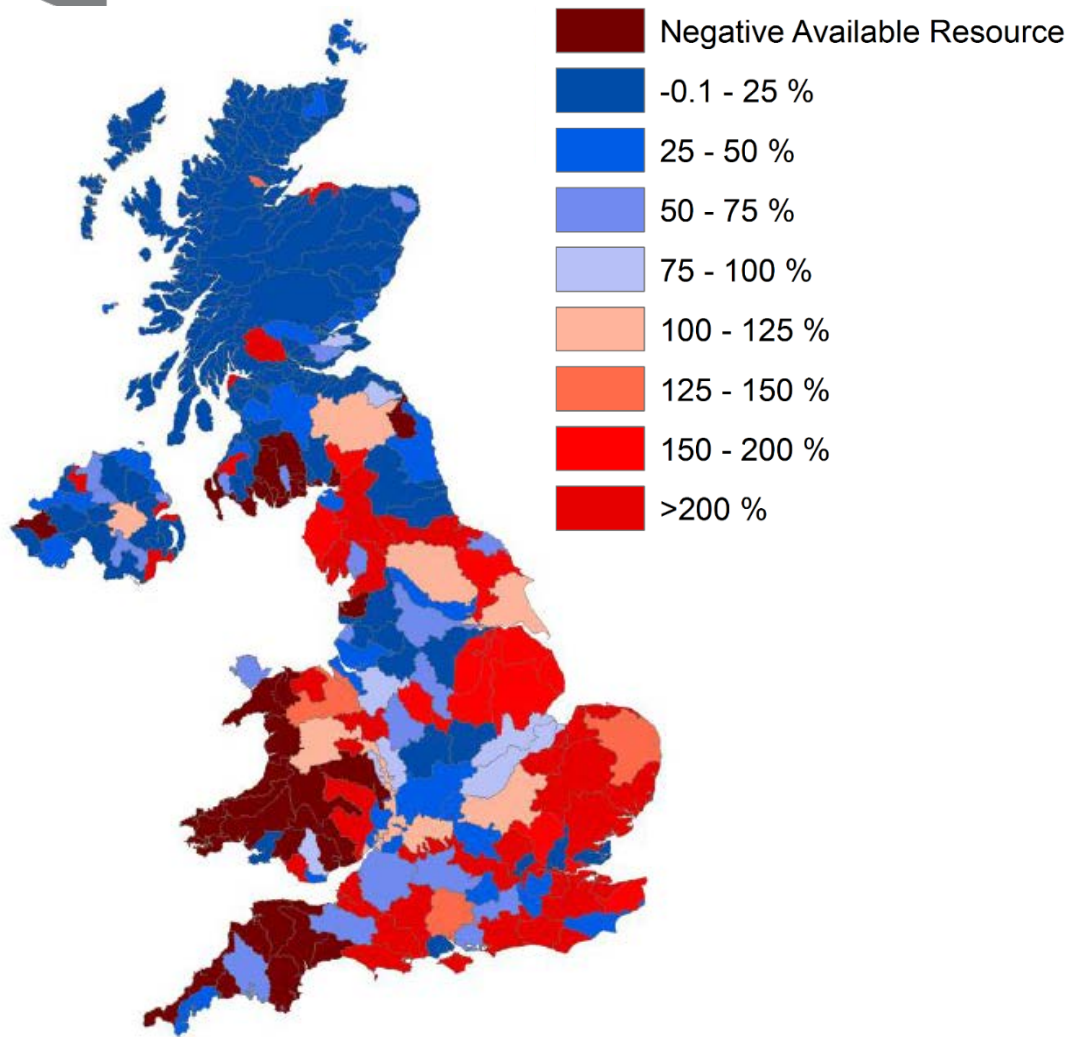
# Domestically, food production depends on the condition of soils...

## Quality of agricultural land in England and Wales



- 'Best and Most Versatile' land in England now and in 2050s
- Projected to decrease from 38% to 9% by 2050s
- This is due to projected increases in soil aridity

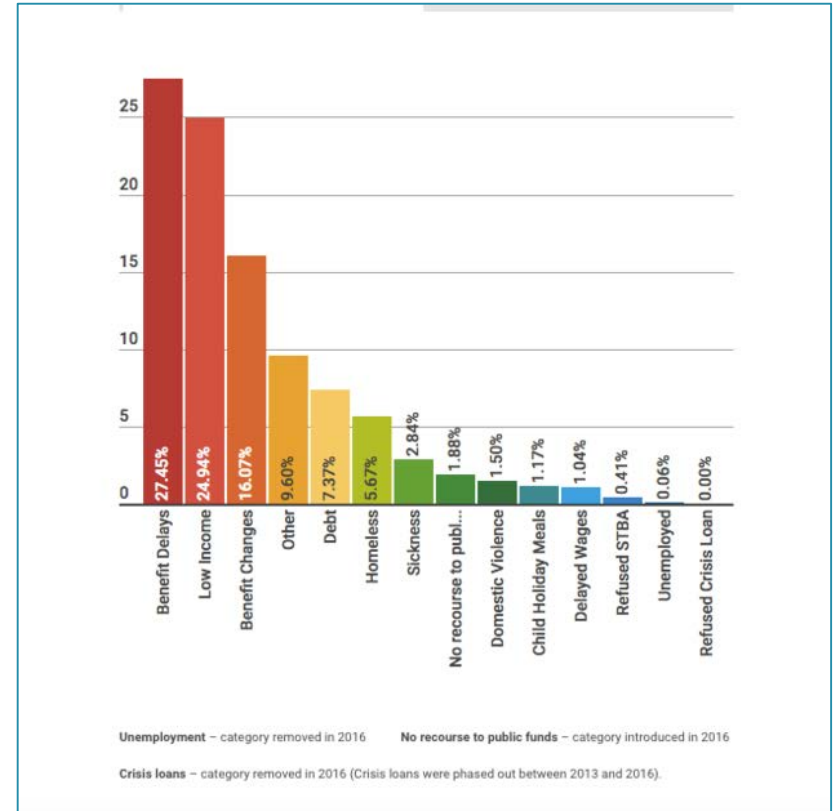
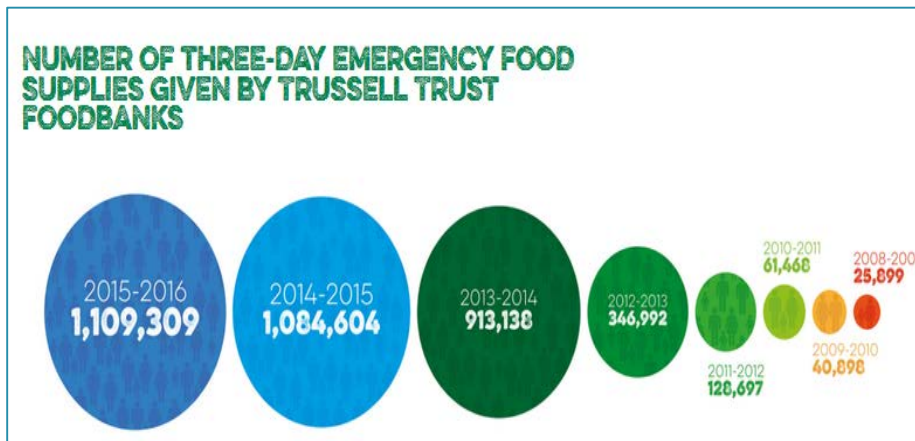
## ...and the availability of water



- Map showing water availability in the 2080s under a 3.5°C, low population growth and high adaptation scenario
- Great Britain overall projected to be in deficit by 800 to 3,000 MI/d by the 2050s

# Higher food prices affect access by vulnerable groups to nutritious food

- Reliance on food aid has steadily increased over the past decade, although reasons for this are still under debate and might not be related to access to food  
(To note: most of the food provided by food banks is processed food)



## More action is needed to improve the resilience of the UK food system

Current government actions focus on monitoring and responding to price shocks

- UK government monitors current risks in the “here and now”, rather than looking at possible changes in the near future
- No plans for further actions to reduce the risk

A national, strategic approach is needed to identify appropriate actions

- Support sustainable and climate resilient agriculture in the UK and abroad
- Build strategic trading partnerships
- Improve the resilience of supply chains

Action can also be taken at the local level

- Raise awareness on demand-side measures that reduce waste and greenhouse gas emissions
- Ensure access to healthy and nutritious food for the most vulnerable
- Improve resilience of infrastructure and business

## Updated adaptation programmes:

UK (England): summer 2018

Scotland, Northern Ireland: 2019

Wales: as part of Wellbeing Act

## Next ASC statutory progress reports:

UK (England): June 2019

## Next steps



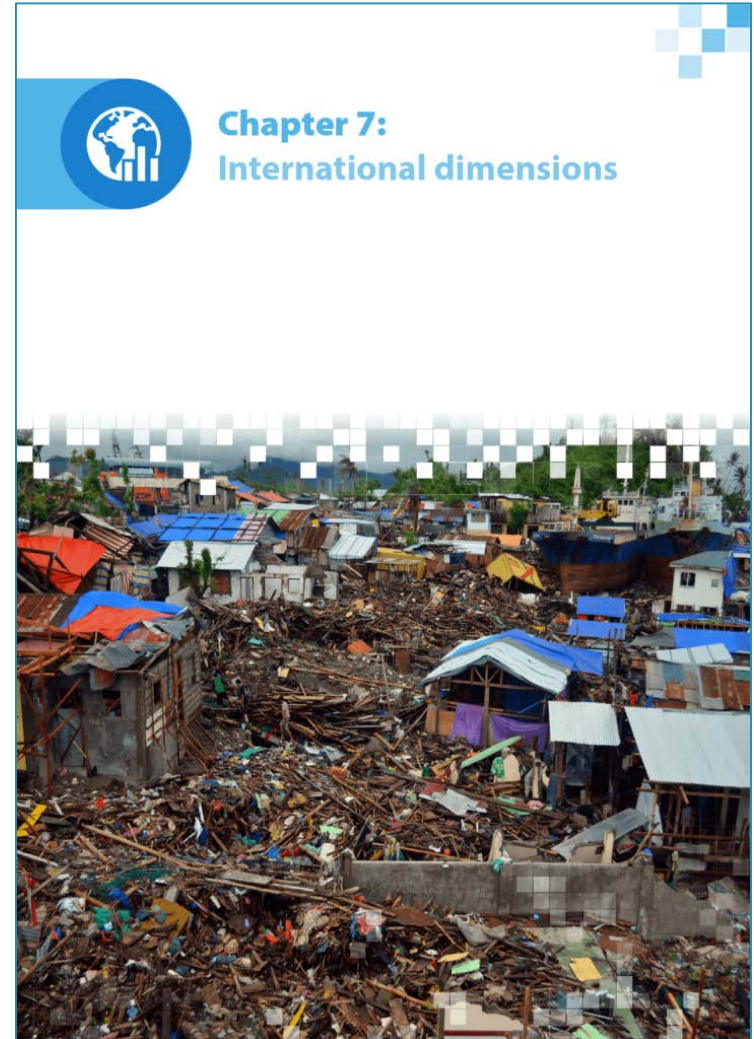


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# For further reference

<https://www.theccc.org.uk/uk-climate-change-risk-assessment-2017/ccra-chapters/international-dimensions/>

[www.theccc.org.uk/uk-climate-change-risk-assessment-2017](http://www.theccc.org.uk/uk-climate-change-risk-assessment-2017)



# Thank you!

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