

# Adapting to Climate Change: the UK Approach

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# WHAT IS ADAPTATION ?

“An adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.”

IPCC 2001

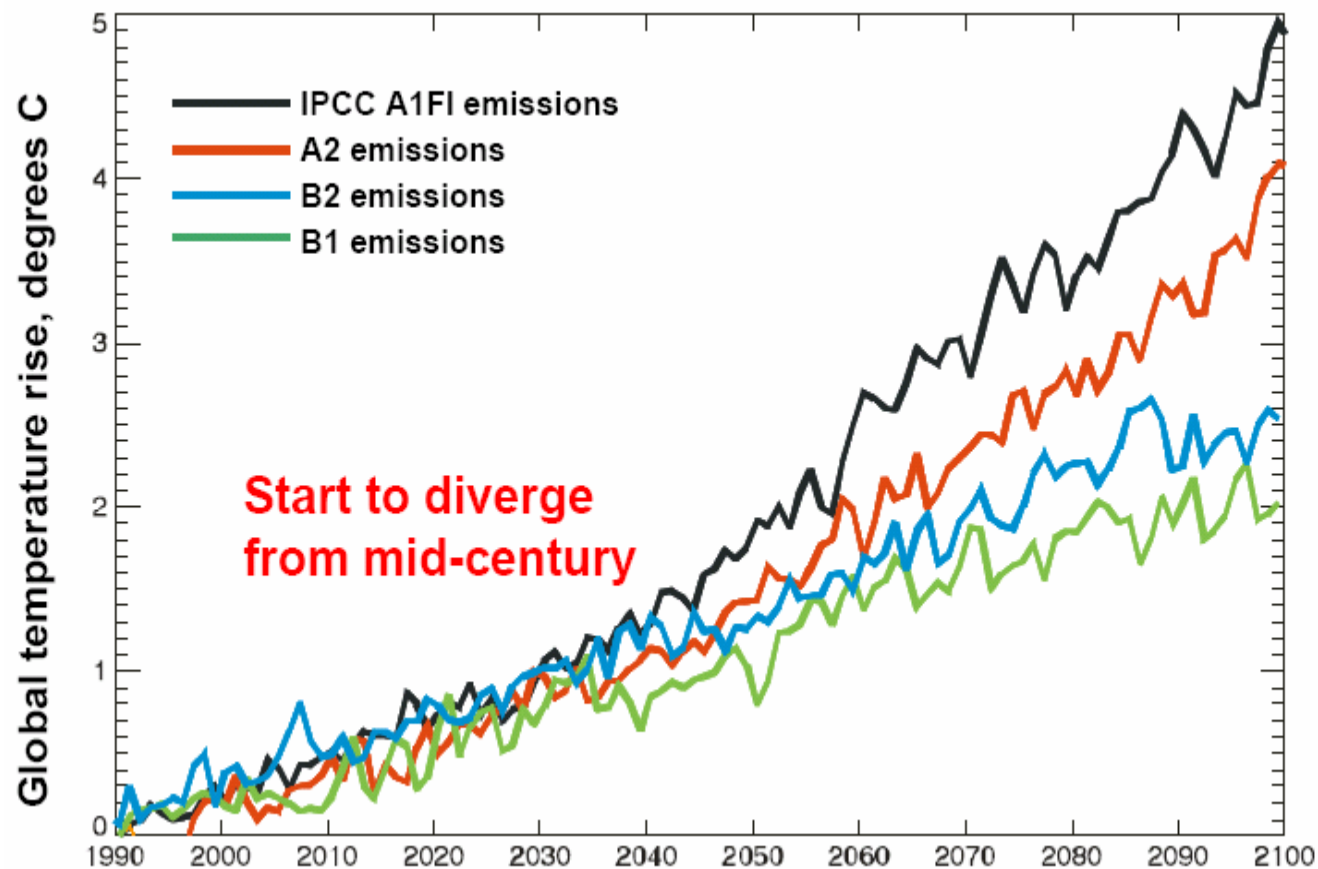
## Types of adaptation to climate change

	Anticipatory	Reactive
Natural Systems		<ul style="list-style-type: none"> <li>• Changes in length of growing season</li> <li>• Changes in ecosystem composition</li> <li>• Wetland migration</li> </ul>
Human Systems	<ul style="list-style-type: none"> <li>• Purchase of insurance</li> <li>• Construction of houses on stilts</li> <li>• Redesign of oil rigs</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in farm practices</li> <li>• Changes in insurance premiums</li> <li>• Purchase of air-conditioning</li> </ul>
	<ul style="list-style-type: none"> <li>• Early-warning systems</li> <li>• New building codes, design standards</li> <li>• Incentives for relocation</li> </ul>	<ul style="list-style-type: none"> <li>• Compensatory payments, subsidies</li> <li>• Enforcement of building codes</li> <li>• Beach nourishment</li> </ul>

WG2 - FIGURE TS-9

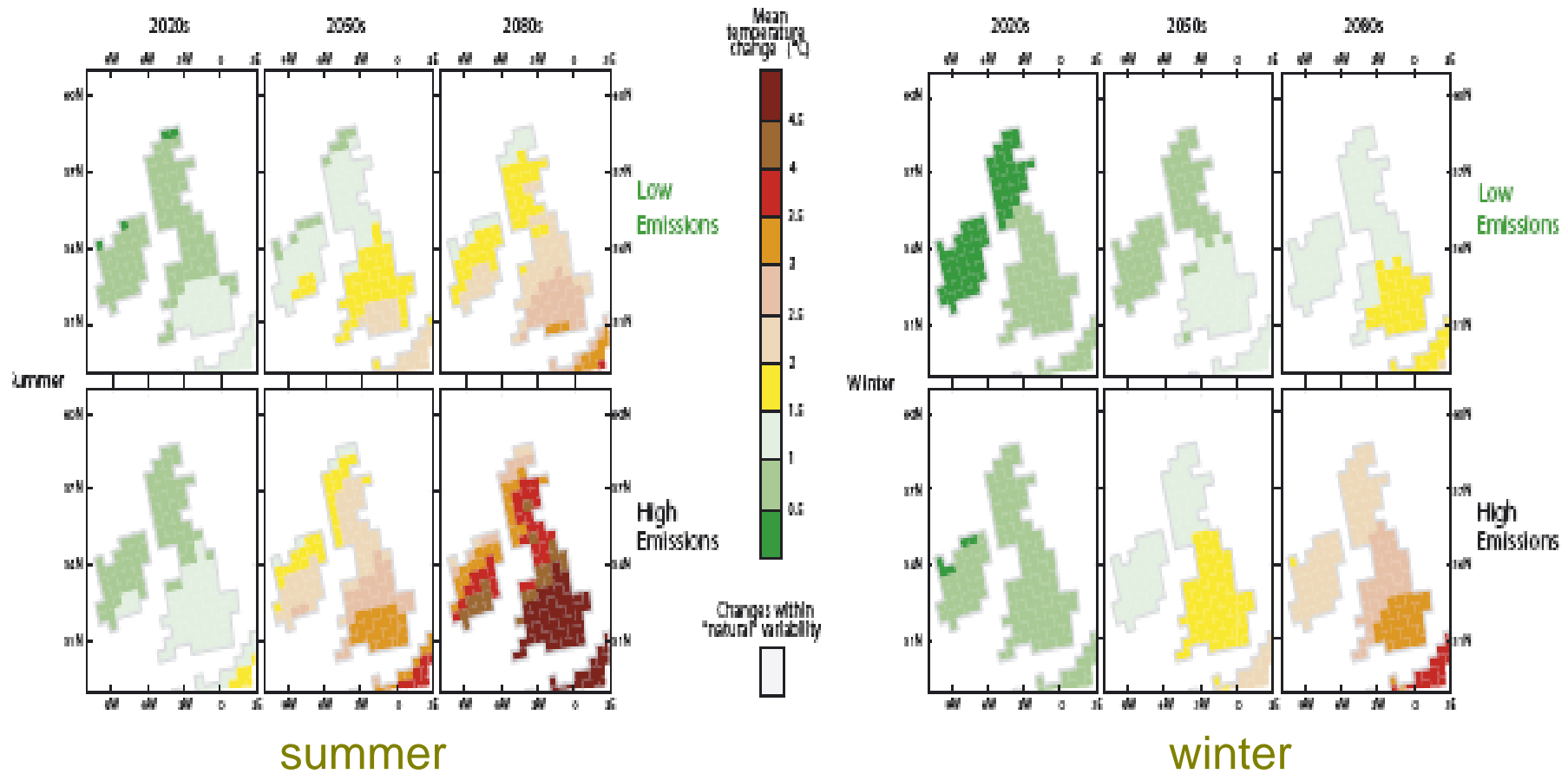
**WHY DO WE NEED TO  
ADAPT ?**

- **Adaptation** to prepare for the inevitable
- **Mitigation** to avoid dangerous climate change



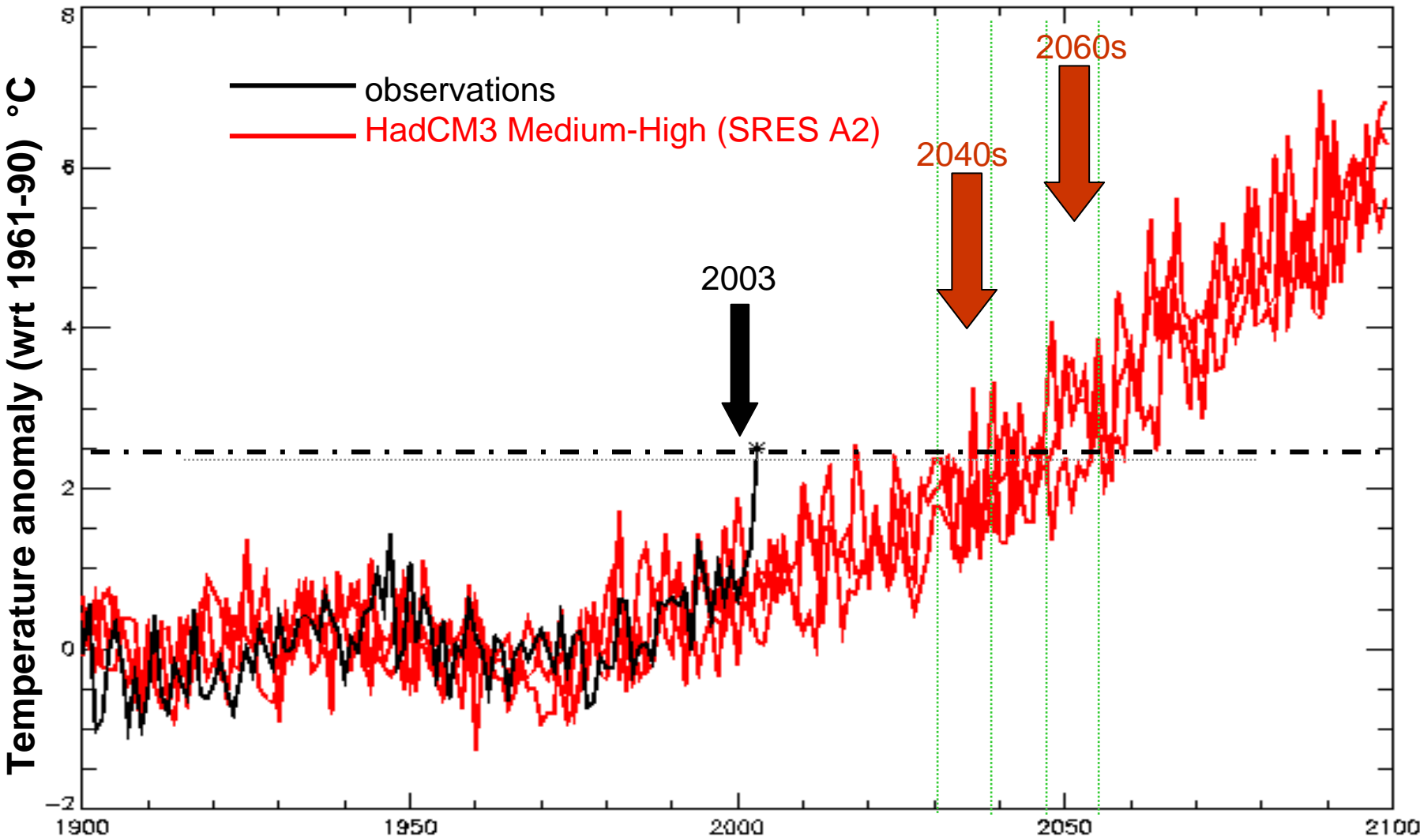
**WHAT ARE WE ADAPTING  
TO?**

# Impacts of Climate Change in the UK



Change in average Summer  
and Winter Temperature

# Increase in Summer Temperatures

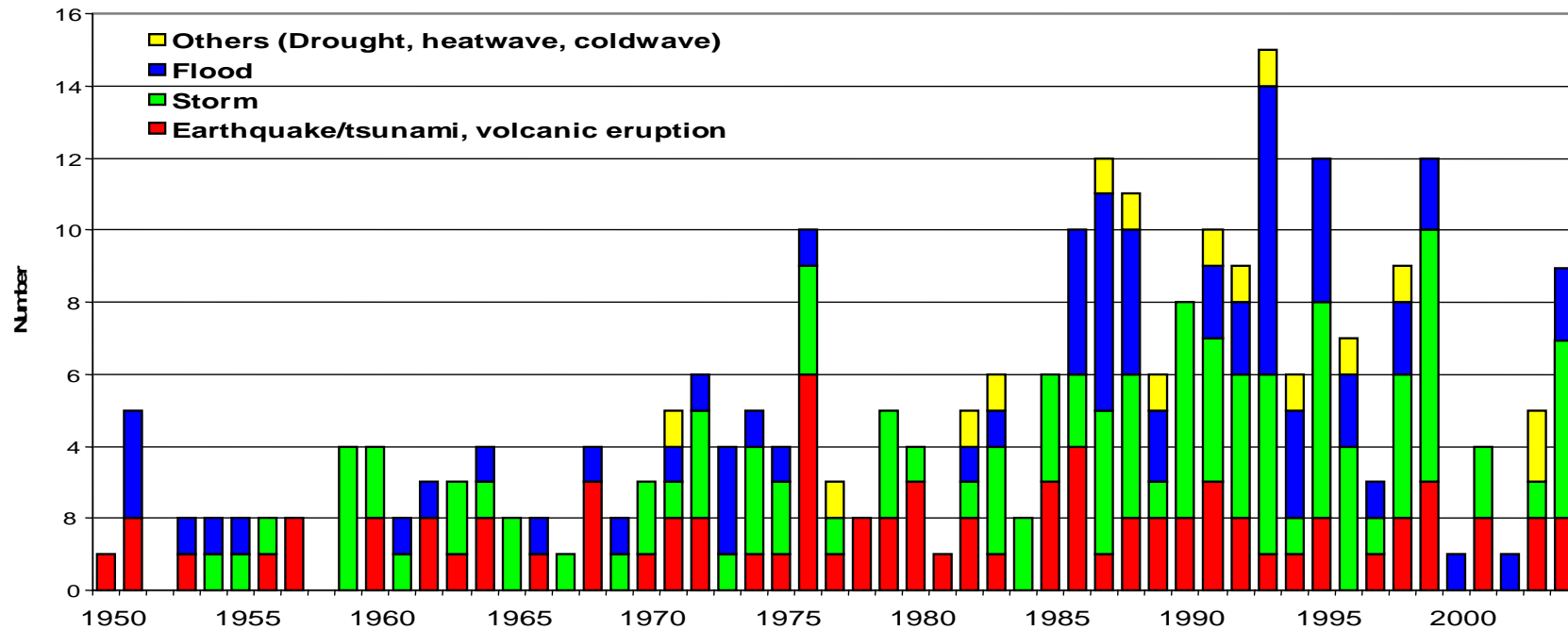


Hadley Centre



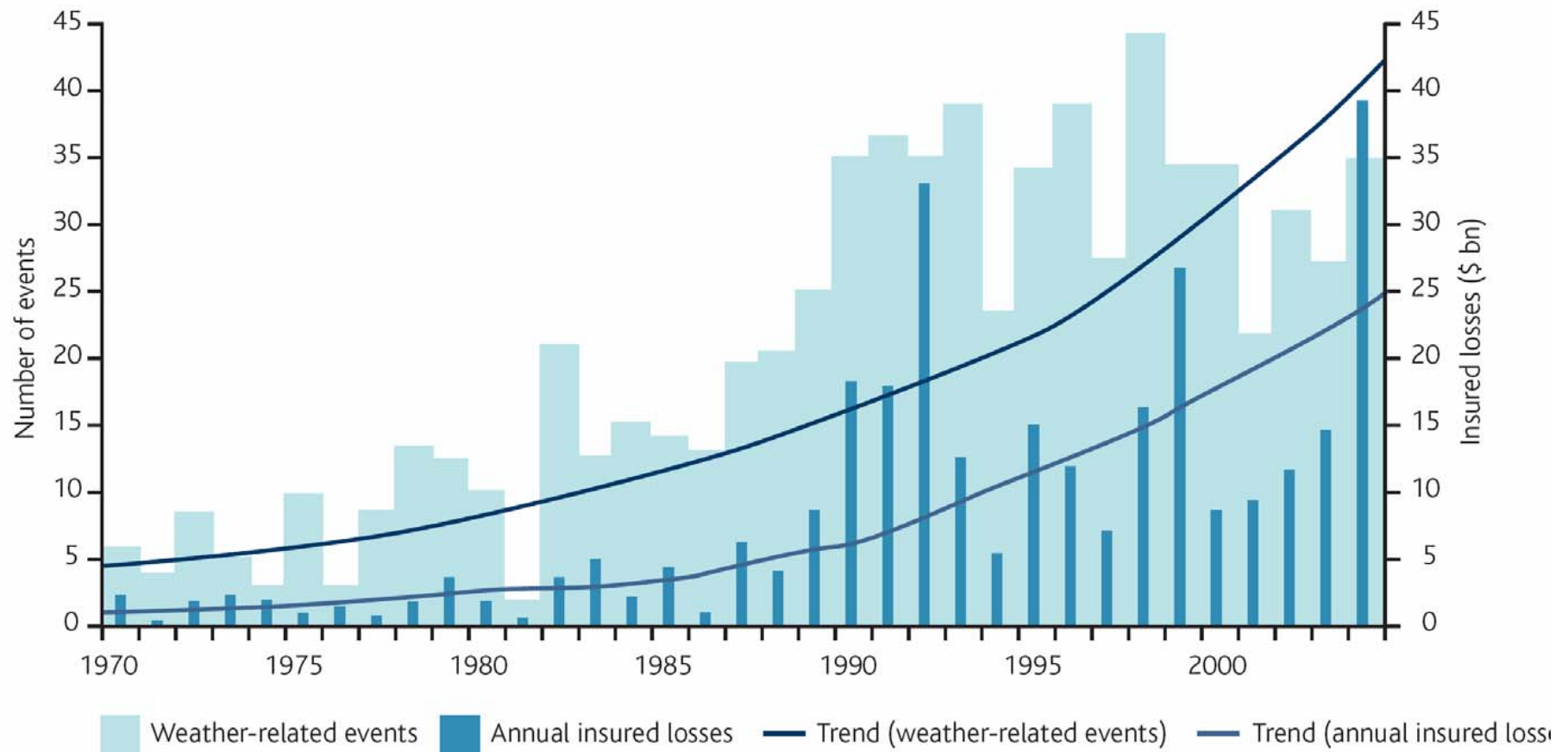
“Changes in many atmospheric processes will significantly increase the frequency and severity of heat waves, droughts, bush fires, tropical and extra tropical cyclones, tornadoes, hailstorms, floods and storm surges in many parts of the world.” (Berz G., 2004 Munich Re)

## Number of events



# Economic losses from weather related events

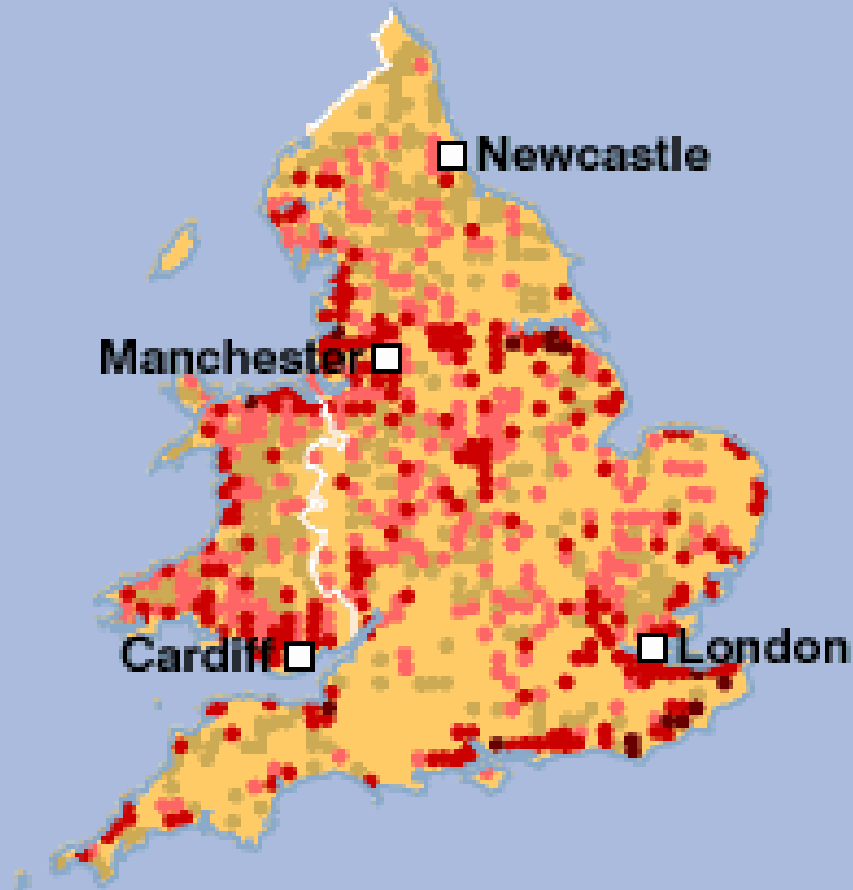
- Costs of weather and climate related events double each decade
- Since 1990, insured losses are on average \$16 billion annually
- 2004: \$40 billion, 2005 even higher



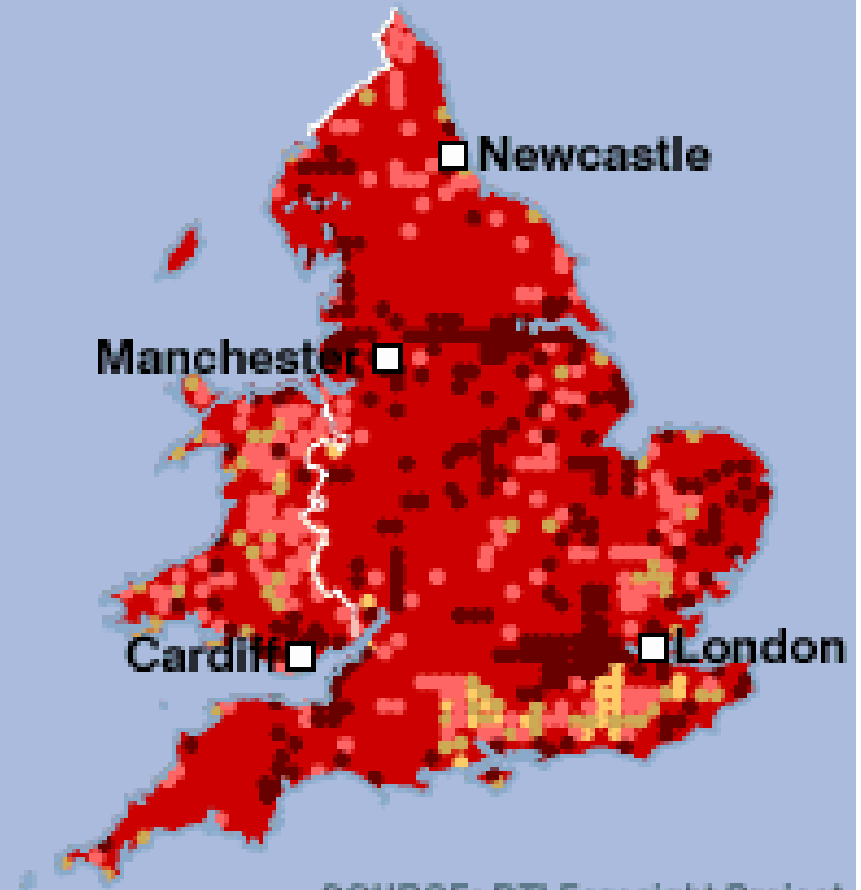
Source: Sigma Database, Swiss Re.

# Possible flooding in the UK by 2080s

Best case scenario



Worst case scenario



SOURCE: DTI Foresight Project

Change in risk of flooding damage (from 2004)

Decrease

Negligible

Low increase

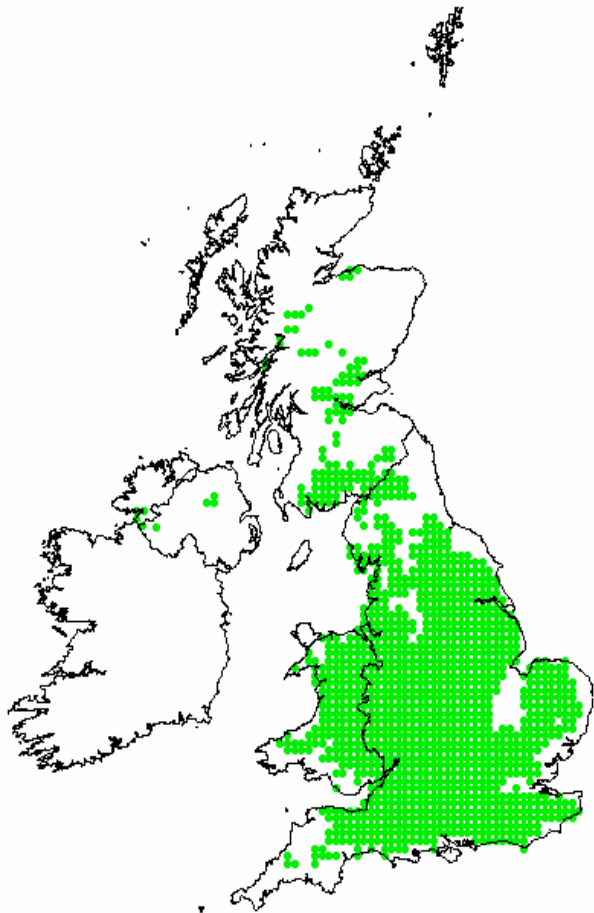
Medium increase

High increase

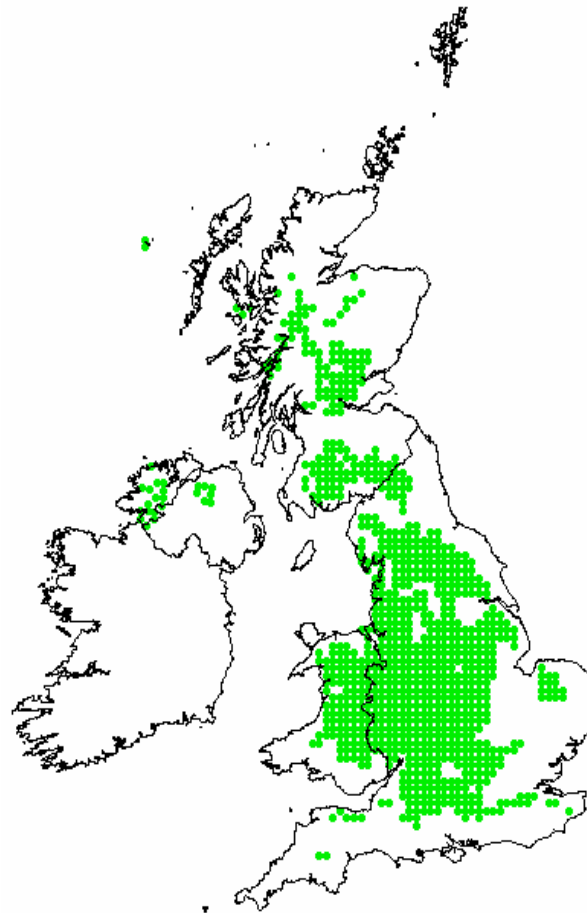
# SPECIES model: Results for future climate

## *Willow tit*

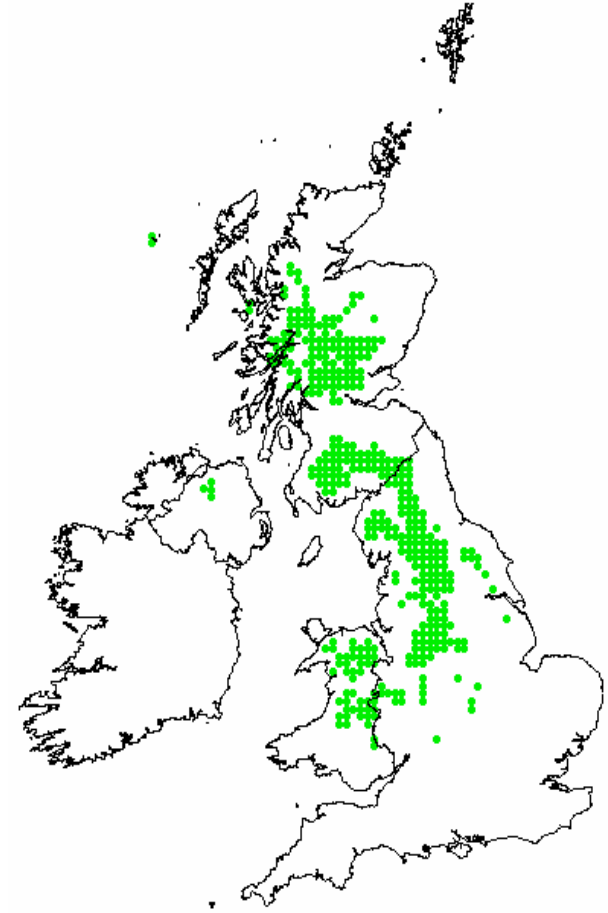
2020 low scenario



2020 high scenario



2050 high scenario



# Impacts in the UK

- Flooding and storm damage – costs of **£6 billion** in 6 years
- Water supply under pressure - 1995 saw additional costs of at least **£96 million**.
- Health impacts – **2,000 excess deaths** in 2003 (35,000 Europe)
- Heat damage - **£400 million** for subsidence in 2003



**HOW ARE WE ADAPTING IN  
THE UK?**

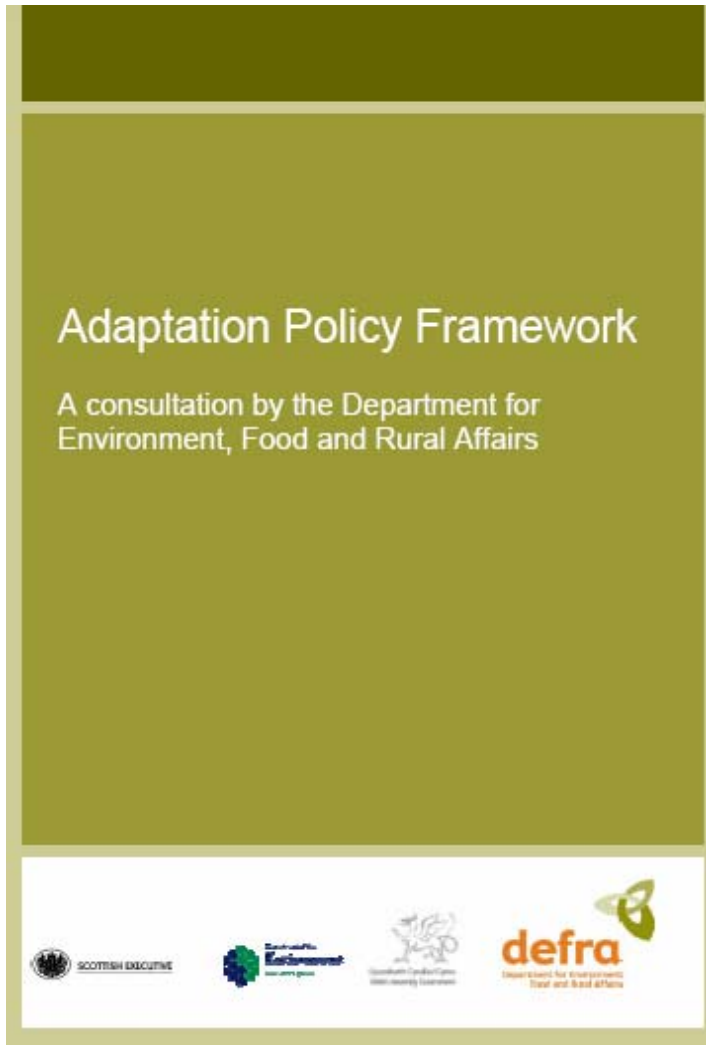
# UK Adaptation Strategy

- Clear direction at national level
  - Climate Change Bill
  - Adaptation Policy Framework
- Framework for action at regional & local level
  - Catalyses grass roots action to specific local issues
  - Responsive to change
  - Provides right tools (UKCIP & Regional partnerships)
- Community & citizens at core of local decisions

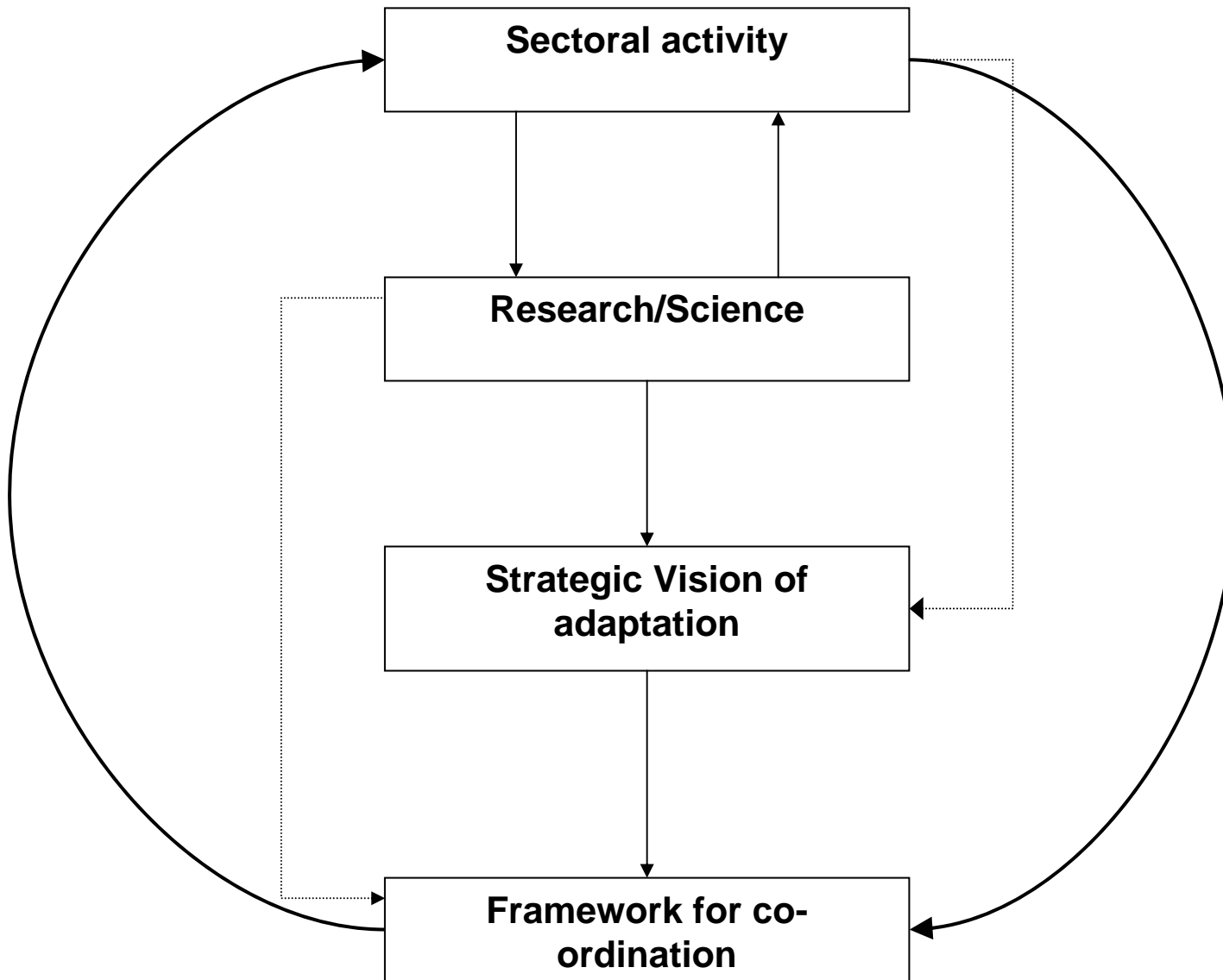
- **Government:** development of Adaptation Policy Framework (APF) to guide adaptation activities throughout UK.
- **UK Climate Impacts Programme:** Facilitate advice and guidance on impacts and adaptation for public and private sector
  - UKCIP 08 –probabalistic scenarios
- **Research:** Assessment of global and regional impacts. Better understanding of how to mainstream adaptation



# Developing the Framework



- Consultation Spring 2006
- Co-ordination of adaptation activities across Government
- Provide strategic direction
- Define roles and responsibilities
- Comprehensive coverage of sectors
- Avoid duplication



# Adaptation Policy Framework

- Set out a rational structure for the roles and activities of different organisations (Central Govt down to individual actors)
  - Ensure a comprehensive and coherent approach to adaptation in the UK  
and
  - Prevent adaptation in one sector having negative impacts on another sector.

# Framework Activities

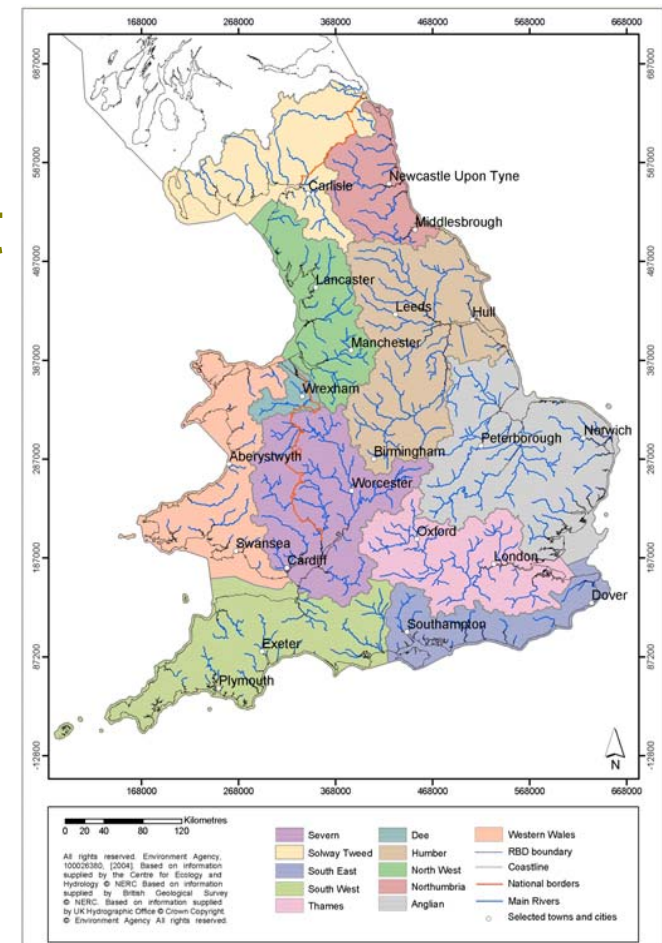
- Stakeholder input – needs of the framework
- Research programme – UKCIP etc
- Scientific basis
- International processes
- Consultation with Government Departments
  - mainstreaming climate change into policy
- Publication of the framework – late 2007
- Monitoring and updating of framework

# Water Resources Adaptation

- Abstraction licensing system
  - new licences are time-limited;
    - allows for possible periodic reductions (CAMS)
  - ending major exemptions
    - more equitably shared burden
- Water company planning
  - impacts on supply—demand balance factored in 25 year Water Resource Management Plans
    - metering, water efficiency etc
- Agriculture
  - encourage move to winter storage reservoirs rather than summer abstraction

# WFD - Adaptation through River Basin Management Planning

- Mitigation – catchment solutions that reduce energy intensive end of pipe treatment
- Adaptation – needs to be flexible to deal with latest information



# Climate change & RBMP

Climate change needs to be considered in

- **reference conditions** (intercalibration, classification);
- **characterisation** of pressures and impacts
- **measures** (wider costs and benefits)
- **objectives for 'water bodies'** (objective setting)
- **monitoring regime** to measure climate-driven trends in the water environment and to assess effectiveness of measures
- **stakeholder engagement/communication**

# Future Water Adaptation

- Climate change proofing River Basin Management Plans
  - new CIS workstream expected (June)
- Need to change abstraction licences more readily ?
  - all licences to be time limited ?
  - further curtail compensation ?
- Prioritise allocation of 'water rights' ?
  - replace 'first come first served' with sectoral allocations ?



# And finally

- Water is a key area for adaptation
- Adaptation is a journey not a destination
  - ‘Adapting well’ rather than ‘well adapted’
- Climate Change Bill
  - Proposal for regular reporting to Parliament on Government actions to integrate adaptation into policy