

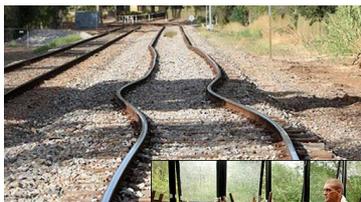
# Adapting to climate change: measuring progress

Adaptation Sub-Committee  
Progress Report 2011

Sir Graham Wynne CBE

19 October 2011

Independent advice to UK Government on preparing for climate change



Independent advice to UK Government on preparing for climate change

## Adaptation Sub-Committee



Established by Climate Change Act 2008 to:

- **advise on** preparedness of UK for climate change
- **monitor** progress in adaptation



Lord John Krebs  
Chairman



Dr Andrew  
Dlugolecki



Sir Graham  
Wynne



Dr Sam  
Fankhauser



Prof Martin  
Parry



Prof Jim Hall



Prof Tim Palmer



Prof Anne  
Johnson

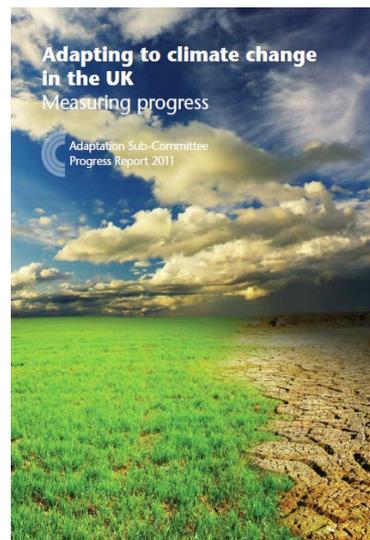


## ASC's second progress report

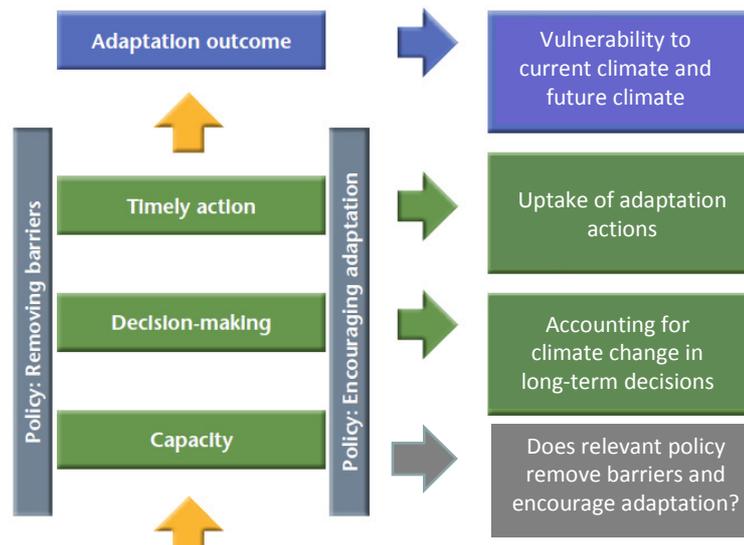


- Measuring progress in adaptation
- Focus on three priority areas:
  - Land-use planning
  - Managing water resources
  - Design of residential buildings
- Advice on Climate Change Risk Assessment (CCRA)

[www.theccc.org.uk/reports](http://www.theccc.org.uk/reports)

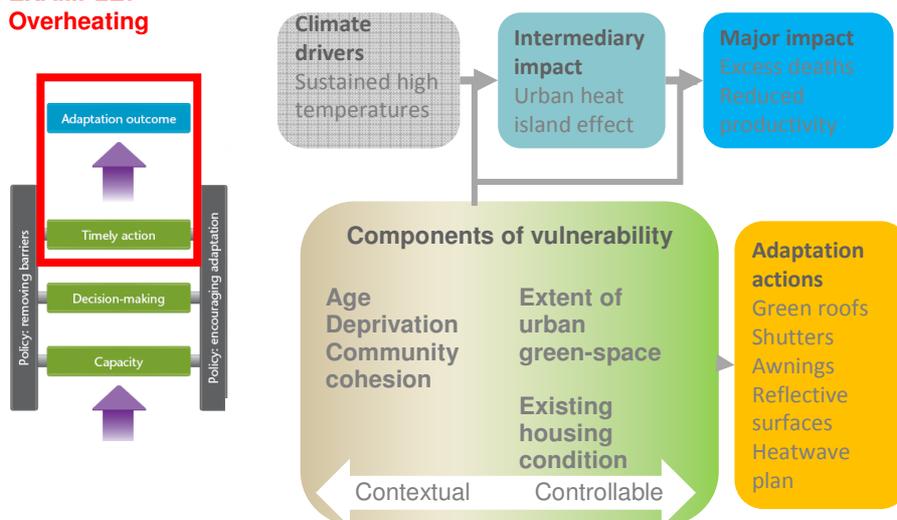


## ASC ladder: assessing preparedness



## Developing indicators to assess outcomes and actions

### EXAMPLE: Overheating



## Where should adaptation start today?



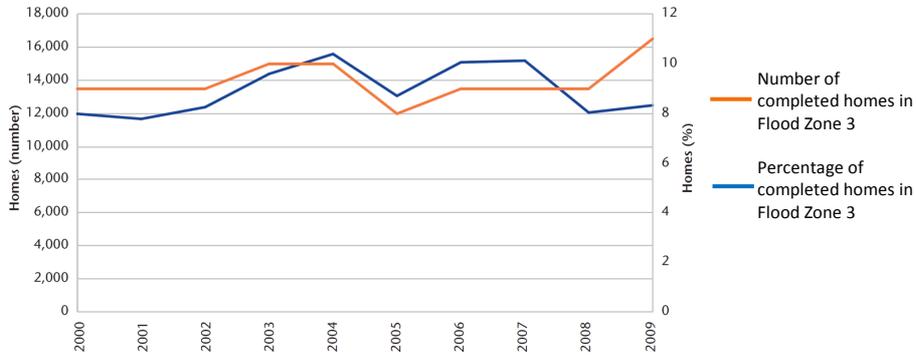
	Climate sensitive decisions	Long lasting consequences		
		Long asset life	Irreversible impacts	Systemic consequences
Land use planning	X	X	X	X
Providing infrastructure	X	X		X
Designing & renovating buildings	X	X		
Managing natural resources	X		X	X
Emergency planning	X			X



## Reducing flood risk 1: location of development



Number of new homes and % of new homes located within areas of high flood risk, 2000 - 2009 (England)

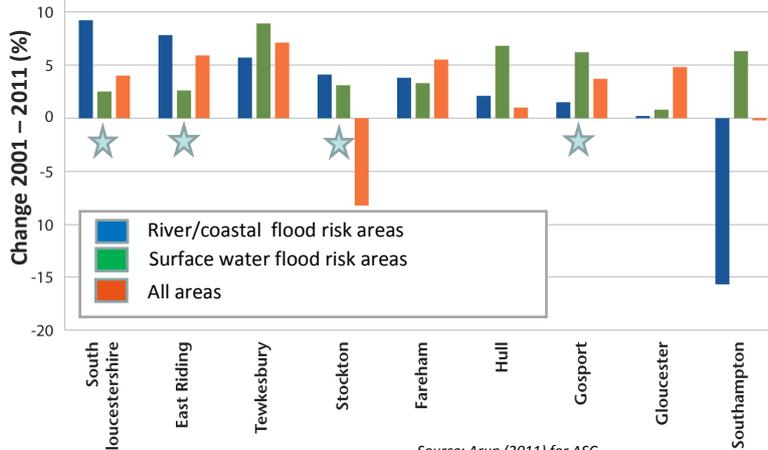


Source: Department of Communities & Local Government (2010)

## ASC analysis shows similar pattern



Change in area covered by buildings within areas at risk from flooding compared with change across locality as a whole (2001-2011)

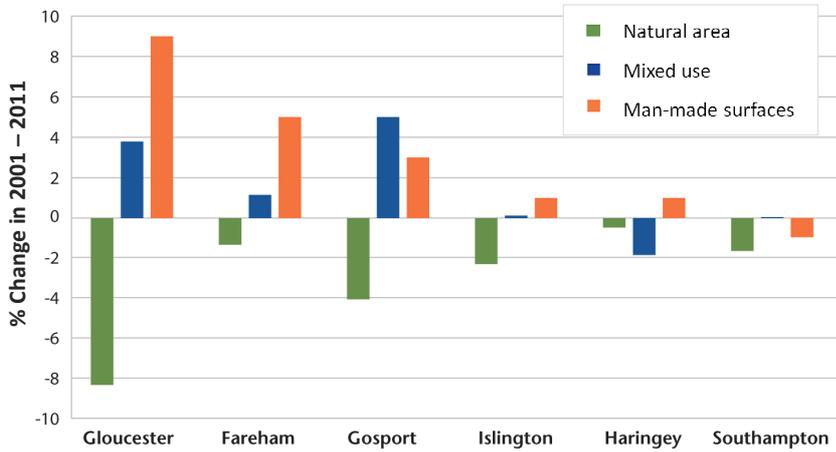


Source: Arup (2011) for ASC

## Reduce flood risk 2: manage surface water



Change in natural, mixed and man-made surfaces in six urban authorities

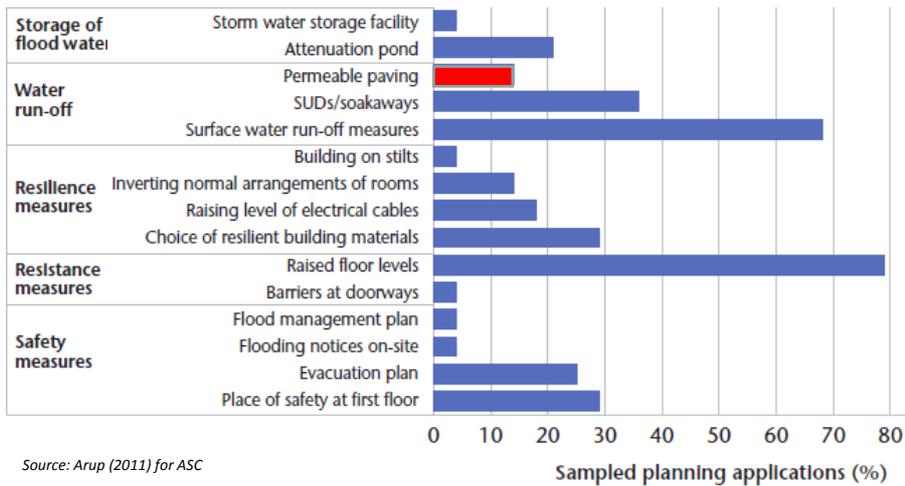


Source: Arup (2011) for ASC

## Reduce flood risk 3: measures for new buildings



Sample of applications and consents for major development in areas at risk of river and coastal flooding in two local authorities (East Riding and Stockton).

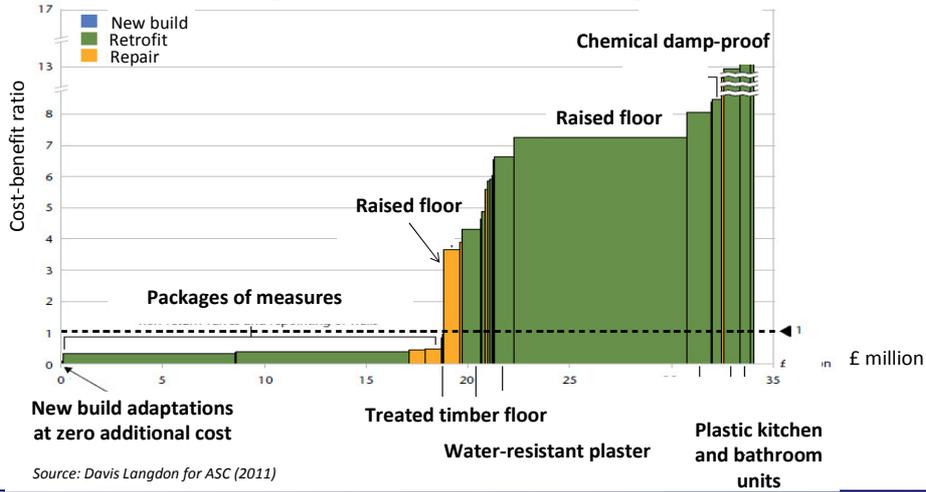


Source: Arup (2011) for ASC

## Reduce flood risk 3: measures for old buildings



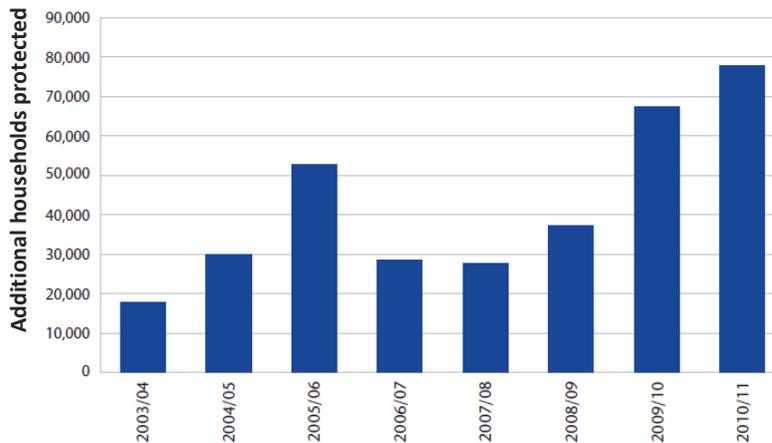
Flood resilient and resistant measures for Aire Catchment, 1-in-100 year shallow flood – societal cost curve showing technical potential 2011 to 2026, damages avoided (£ million)



## Reduce flood risk 4: community scale flood defences



Number of households benefitting from flood defences (2003 – 2011)



Source: Environment Agency (2011)

## Indicators: development in flood risk areas



Type	Indicator	Trend
Vulnerability	Development in areas of high flood risk	↑
Vulnerability		↑
Action		↑
Action	Provision of community-scale flood defences	↑

**What does this tell us about overall preparedness for flood risk?**



## Chapter 4 Managing water resources

## Security of water supply has improved



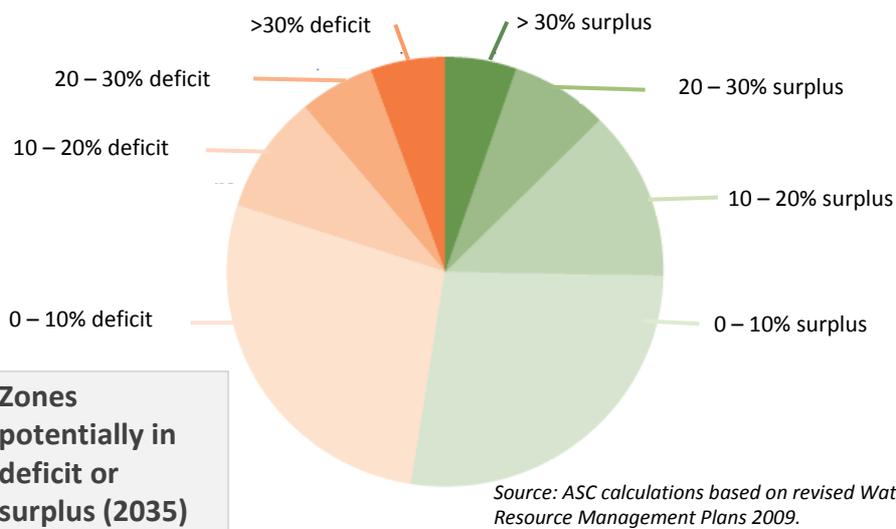
Security of water resources has improved

- Only 8 % of resources zones were at risk of supply shortfalls in 2010

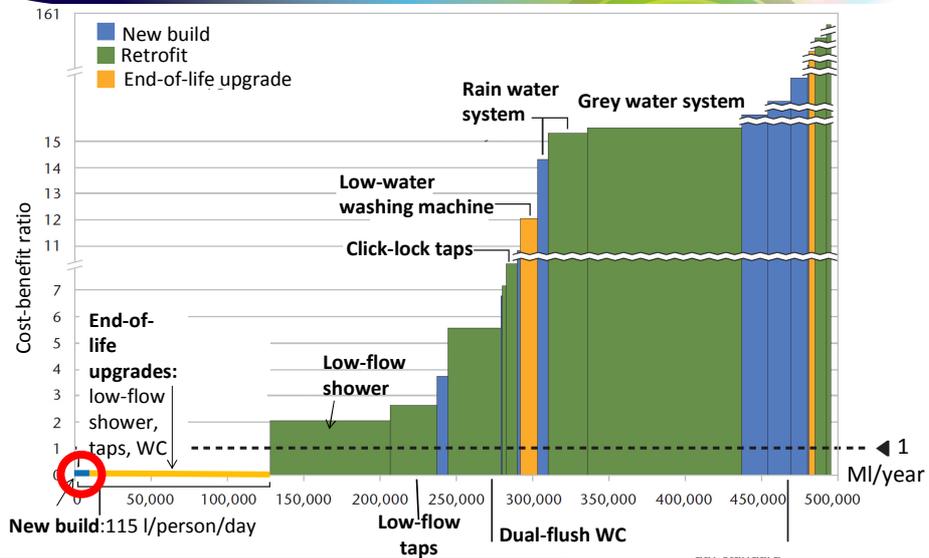
Security of supply comes at an environmental cost

- 11 % of surface water bodies and 35 % of ground water bodies are probably at risk due to abstraction

## Continued action is needed to avoid deficits in some parts of country



## Low-regret opportunities for adaptation – water efficiency measures



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Source: Davis Langdon (AECOM) (2011) for the ASC

## Water companies have plans to address potential deficits

Water Company	Preferred measures to close deficit (%)	
	Demand (of which leakage)	Supply
Anglian and Hartlepool	30 (14)	70
Bristol	52 * (6)	48 *
Essex and Suffolk	18 (6)	82
Severn Trent	46 (19.5)	54
South East Water	25 (3.1)	75
Sutton and East Surrey	40 (0)	60
Thames	51 (32)	49

Greater scope to reduce demand?

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## Summary of headline messages



### **Some evidence that vulnerability to climate risks is increasing**

Although this may be at least partially offset by adaptation actions.

### **More low-regret actions could be taken now**

There are a number of cost-effective measures in residential buildings that can improve water efficiency and reduce costs from flooding.

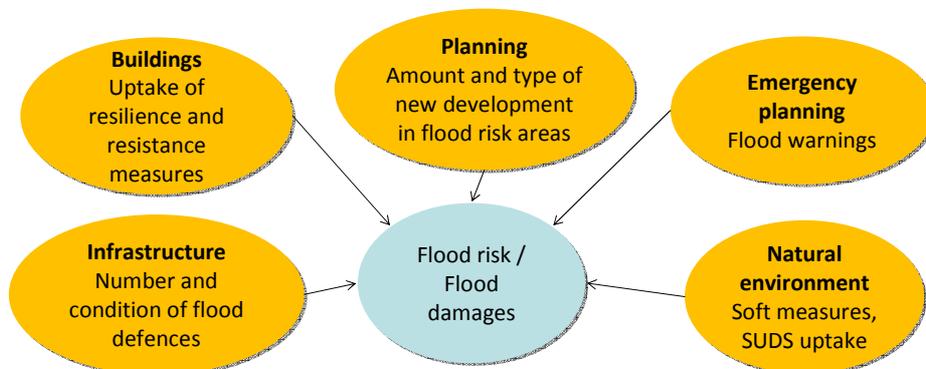
### **It is not evident that long-term decisions are explicitly accounting for climate change**

Costs of future flood risk not being weighed-up against short-term benefits from development.

## Next steps – ASC's 'deep-dive' analysis into preparedness for future flood risk



Is vulnerability increasing or decreasing?  
Is there sufficient uptake of adaptation action?

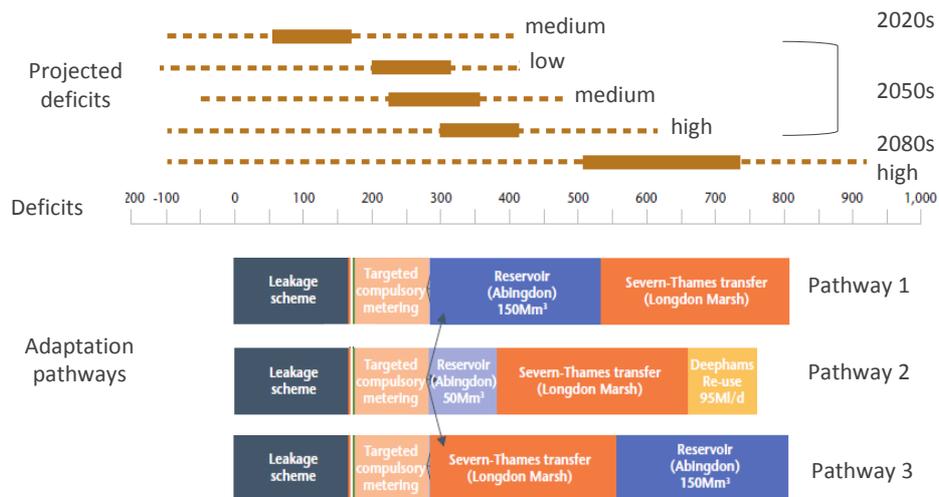


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<http://www.theccc.org.uk>



## Uncertainty is not fully factored in to water resource planning



Source: Atkins (2011) for the ASC and Thames Water.

## Opportunities for adaptation



ASC Priority	Key Barriers	Opportunities
Land use planning	<ul style="list-style-type: none"> <li>• Not accounting for long – term costs</li> <li>• Insufficient guidance</li> </ul>	<ul style="list-style-type: none"> <li>• Localism Bill</li> <li>• National Planning Policy Framework</li> </ul>
Managing water resources	<ul style="list-style-type: none"> <li>• Planning not factoring in full range of climate uncertainties</li> <li>• Weak signals to encourage sustainable abstraction</li> </ul>	<ul style="list-style-type: none"> <li>• Water White Paper</li> <li>• Price Review 2014</li> </ul>
Design and renovation of residential buildings	<ul style="list-style-type: none"> <li>• Lack of information, available capital or incentives</li> </ul>	<ul style="list-style-type: none"> <li>• Future reviews of Building Regulations</li> <li>• Green Deal</li> </ul>