Prospects for Sub-Regional Housing Market Inequalities

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"Housing Inequality and Segregation: Existing Problems and Future Prospects"

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Introduction:

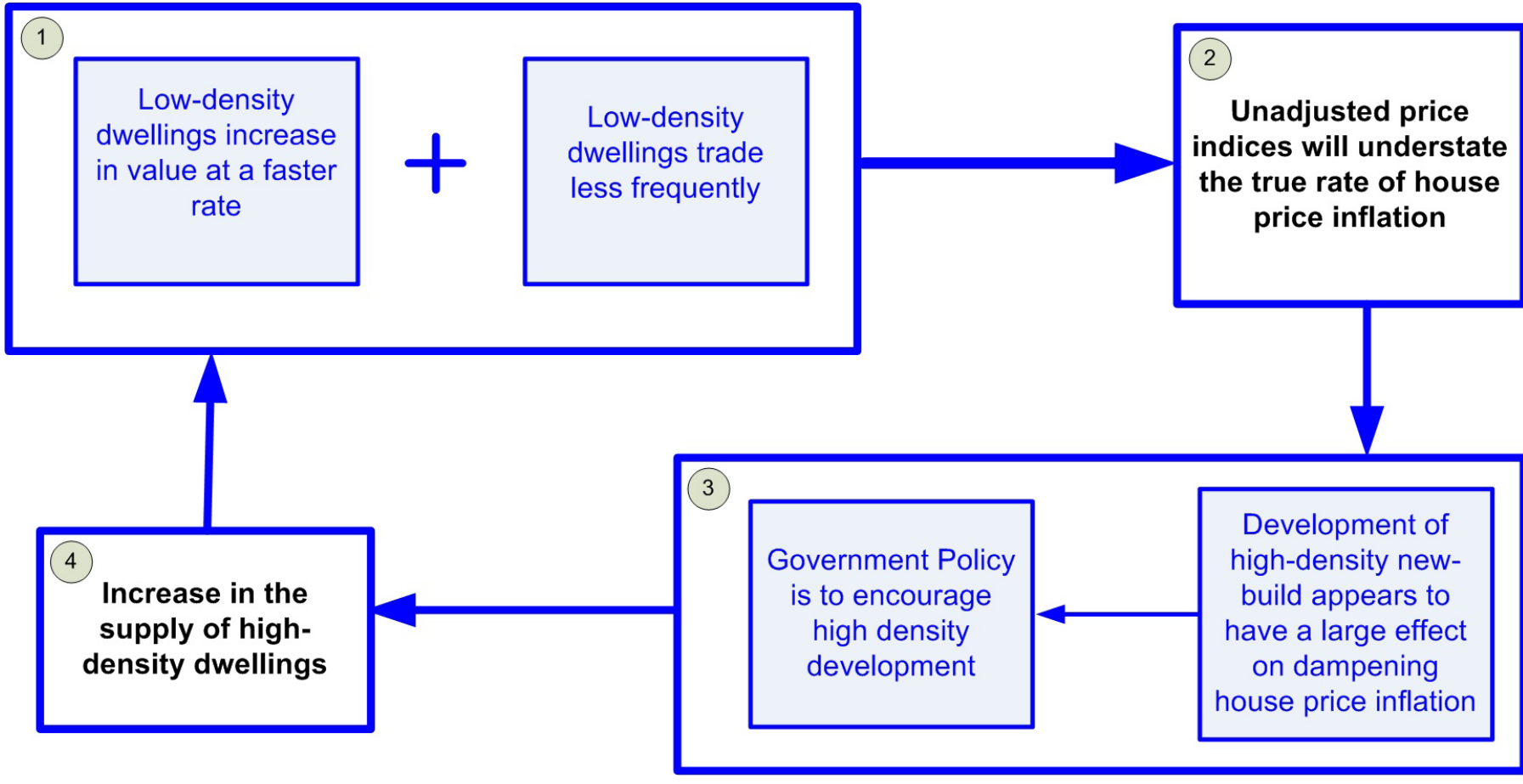
- This presentation looks at two emerging concerns for sub-regional inequalities:
  - **1. Density**
  - **2. Climate Change and Flood Risk**
- Both have the potential to:
  - alter the house price map of Britain,
  - provide mechanisms that reinforce existing inequalities
  - have large differences in effect at a very small spatial scale

  => exacerbate and introduce inequality between neighbourhoods in very close proximity.

1. The Density Divide

- In the South East, low density housing is rising in value at a faster rate than high-density urban housing
- Current Policy of increasing the supply of high density urban housing to stabilise house prices:
  - $\Rightarrow$ exacerbate the divergence in house wealth trajectories;
  - $\Rightarrow$ exacerbate migration of white middle class to outer suburbs;
  - $\Rightarrow$ increase the spatial concentration of low income ethnic minorities in inner-cities.
- Possible 'feedback-loop' reinfocement effect due the way house price inflation is calculated:

How Policy and Selection Bias Can Reinforce Each Other



- The corollary of low-density dwellings increasing in value at a faster rate and also trading less frequently (box ①) is that unadjusted price indices will understate the true rate of house price inflation (box ②).
- This will give an exaggerated impression of the effectiveness of high-density new-build in reducing price inflation (box ③).
- This may encourage policy makers to continue with the policy of encouraging high-density construction, but even if it does not, there are other forces that will seek to maintain this policy (such as pressure from environmental groups).
- Consequently, high-density development rises still further as a proportion of all new construction (box ④), this then exacerbates the inflation differential between low- and high-density properties (box ①), and the self-reinforcing cycle starts anew.

Evidence on S.East

- we compared the unadjusted cumulative inflation results for Oxfordshire (231%) with those of Surrey (262%) over the period 1996-2004.
  - unadjusted indices: => rate of HP inflation in the two areas was fairly similar.
- bias-adjusted indices: Oxfordshire, the *adjusted* rate = 230% (almost identical to the *un*adjusted estimate).
- In contrast, the adjusted figure for Surrey (407%) was massively greater than the unadjusted value.
  - These results were based on very large samples (sample sizes for the county-level regressions ranged from 31,000 to 326,000).

  $\Rightarrow$ HP appreciation of the housing stock in the two counties was in fact very different

- Profound implications for planners:
  - Based on the *unadjusted* estimates, planners might have concluded that both counties needed a similar proportionate increase in new-build to ameliorate house price inflation.
  - Using the *adjusted* series we would arrive at the very opposite conclusion: Surrey is likely to need a far more radical boost to housing supply if price stability is to be achieved.
- Conceivably, similar distortions could occur at other spatial scales, such as local authorities, postcode sectors or regions.
  - no reason to believe that systemic variation in frequency of sale will be precluded by changing the size of the spatial unit.

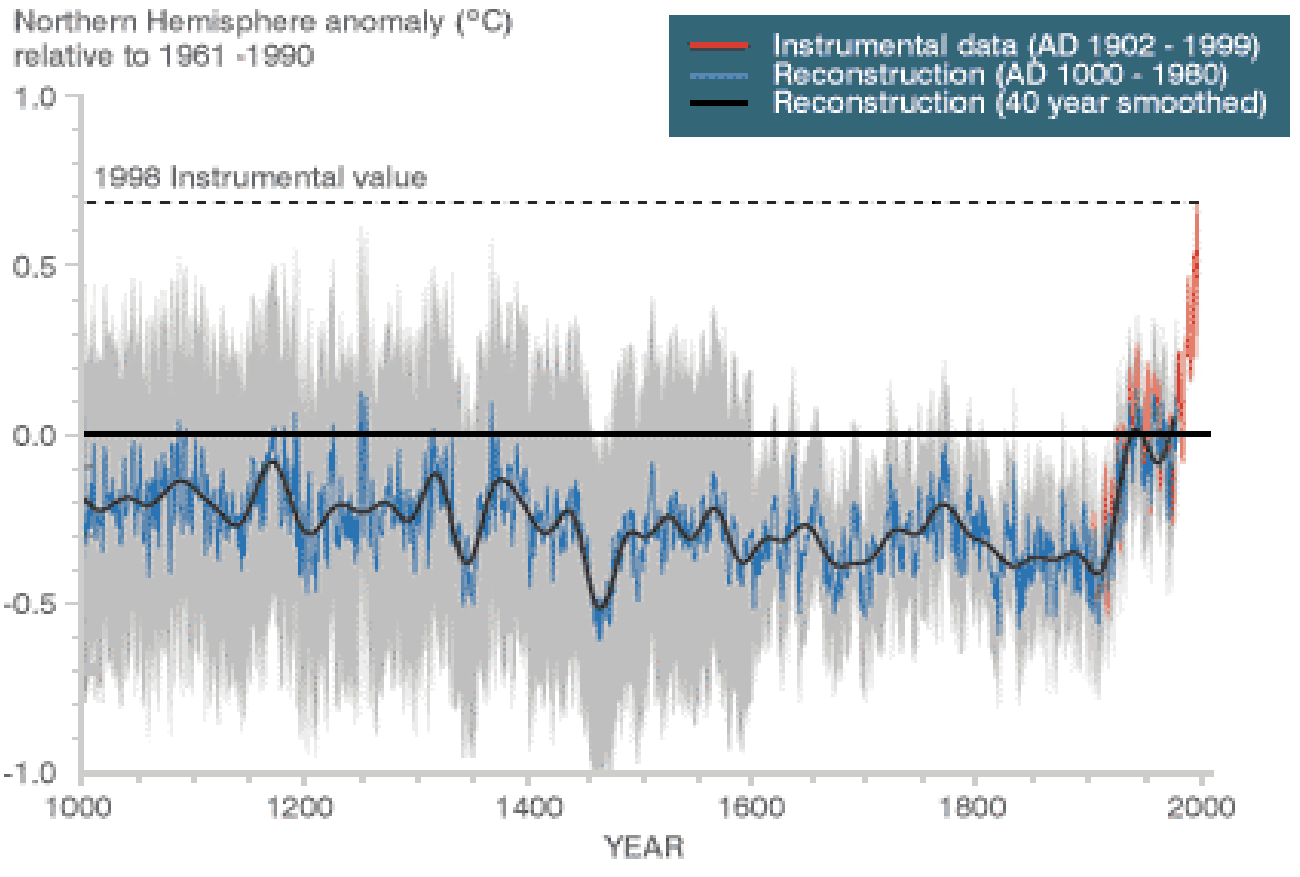
2. Climate Change and Flood Risk

- Growing consensus that human activity has contributed to global warming,
  - still some dissenters
- The issue of whether global warming exists no longer a seriously contested issue
  - Debate is over extent and cause.

Temperature change:

- Determined by the difference between the amount of energy the Earth is receiving from the Sun and the amount of energy it is losing to space.

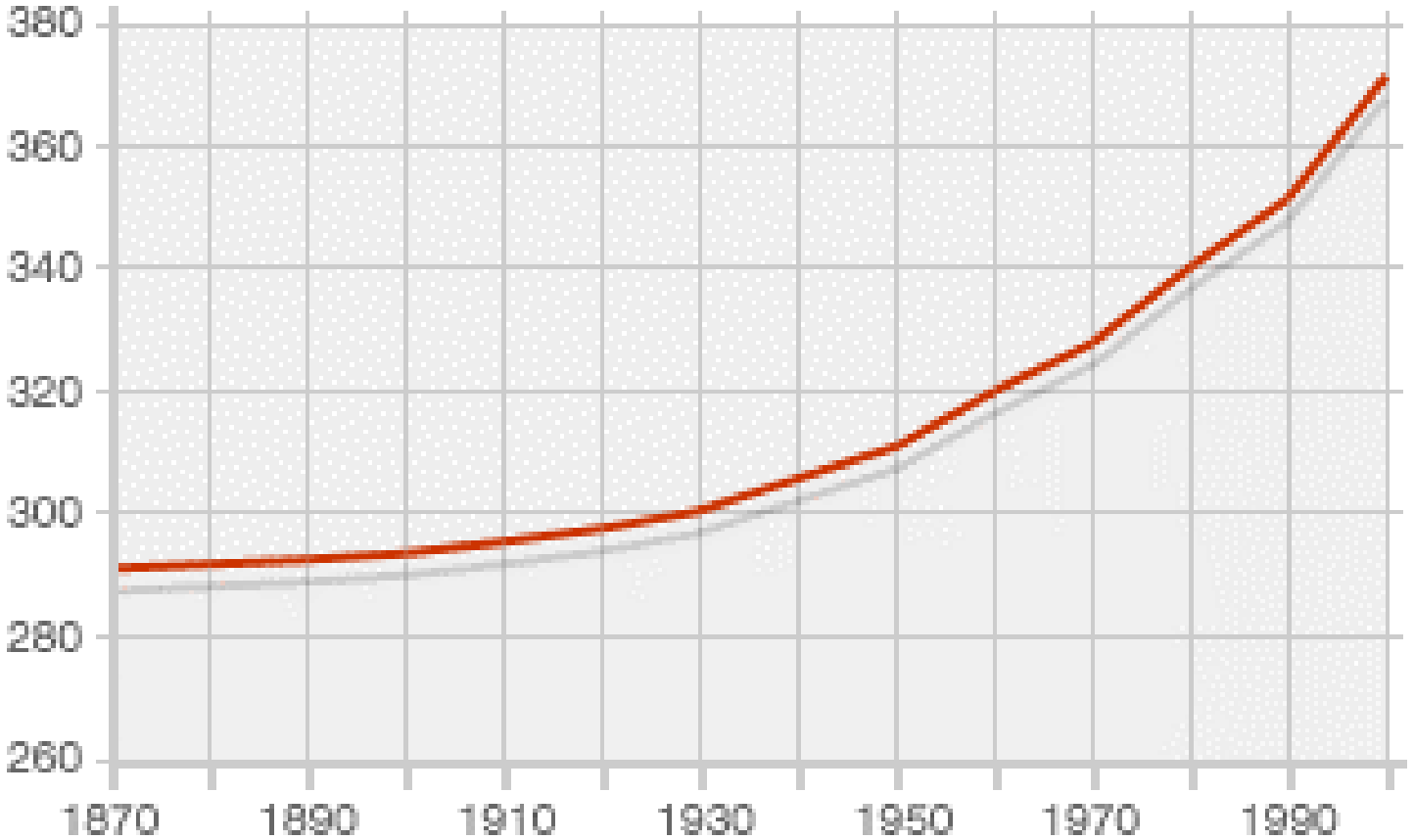
‘Hockey-Stick Graph’



- Millennial Northern Hemisphere (NH) temperature reconstruction (blue – tree rings, corals, ice cores, historical records) and instrumental data (red) from AD 1000 to 1999. A smoother version (black), and two standard error limits (grey) are shown. Source: IPCC Third Assessment Report

Global concentration of CO2 in the atmosphere

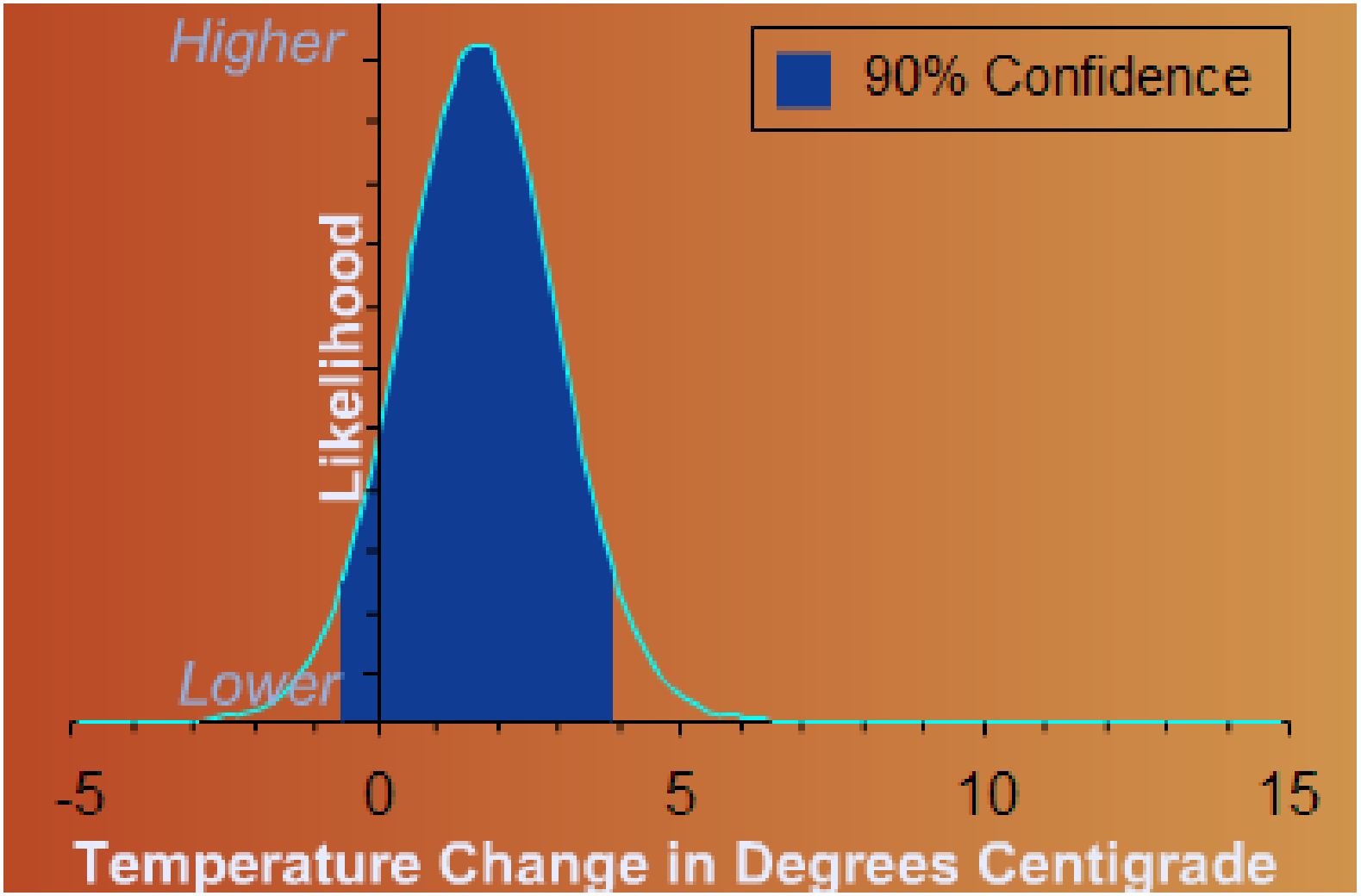
Parts per million (ppm)



SOURCE: UNEP

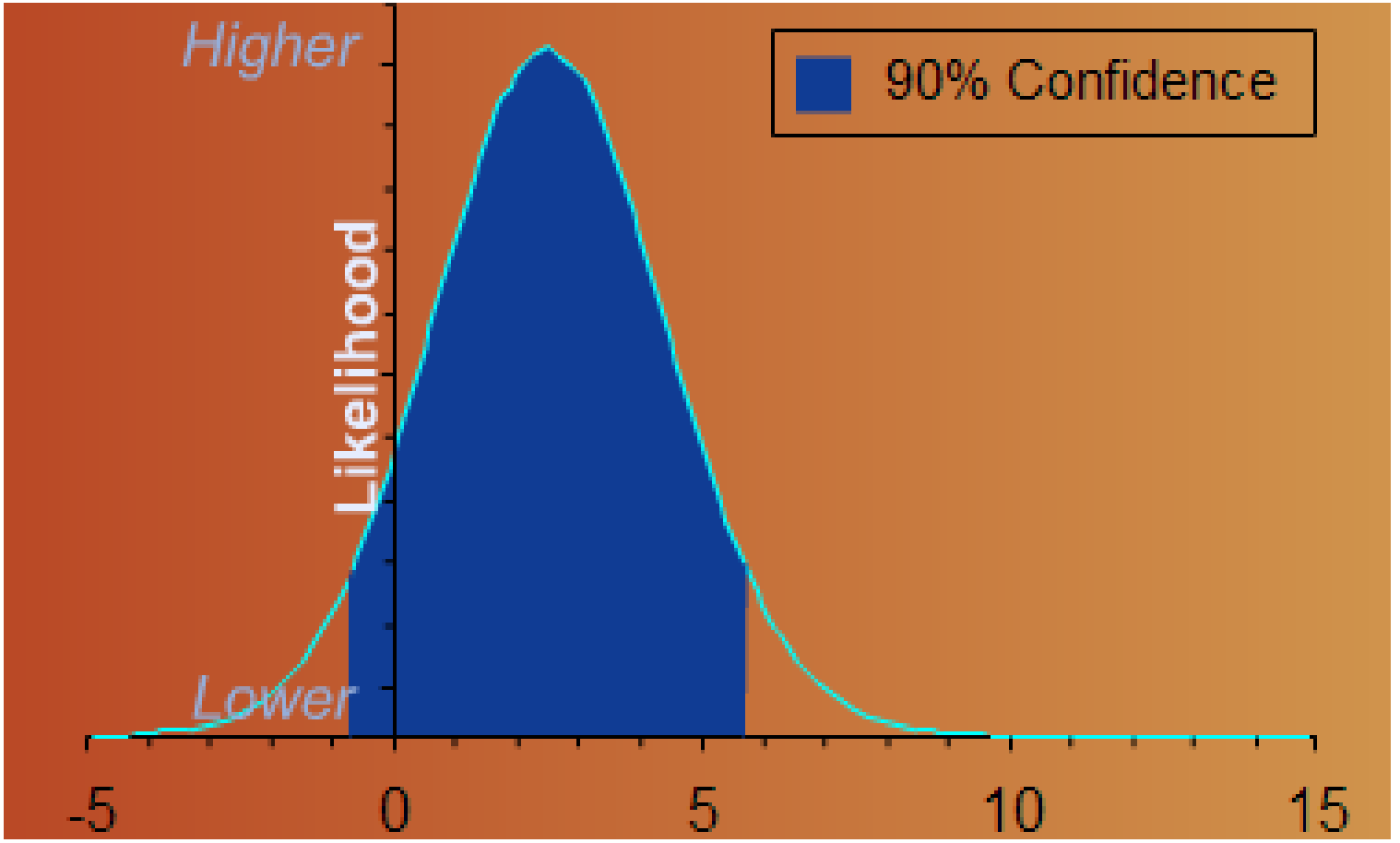
- Scenario A: High Emissions
  - In this scenario, the whole world develops very rapidly, and poorer countries 'catch up' with richer ones. There are rapid advances in technology. The main energy source for the world is fossil fuels (coal, oil, gas) - which all produce carbon dioxide, but, after 2050, improvements in technology mean that energy use decreases.
- Scenario B: Lower Emissions
  - This is a scenario where, at least on regional scales, an effort is made to protect the environment and to reduce the gap between the rich and the poor. However, on bigger, global scales, developed countries get wealthier faster than developing countries. The amount of carbon based, fossil fuels used for energy increases slowly throughout the century. Therefore carbon emissions and the concentration of carbon dioxide in the atmosphere also carry on rising.

Europe in 2050: Low Emissions



Source: Dr Sylvia Knight, Open University, climateprediction.net & open2.net projects.

Europe in 2100: Low Emissions



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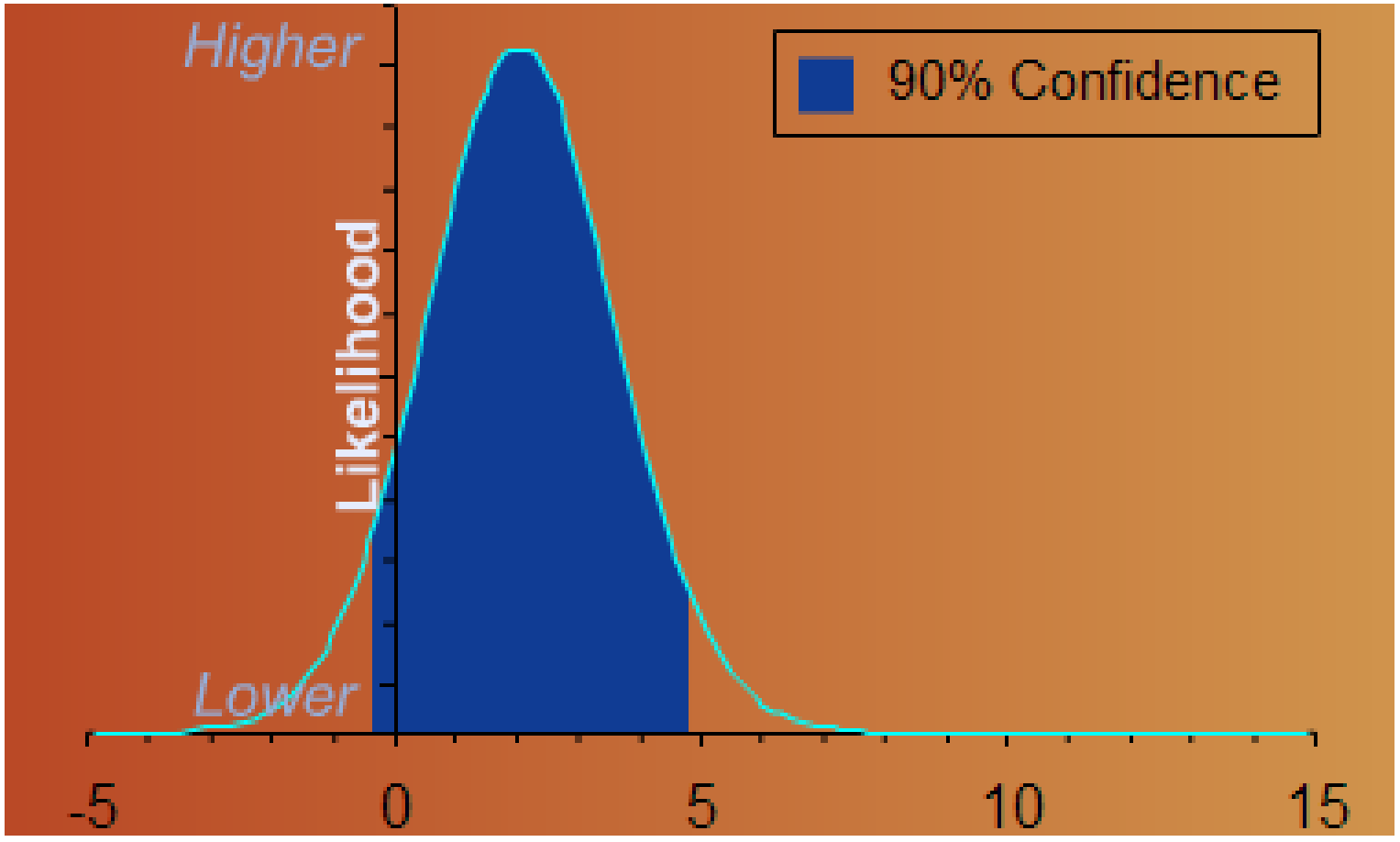
Europe in 2050: High Emissions



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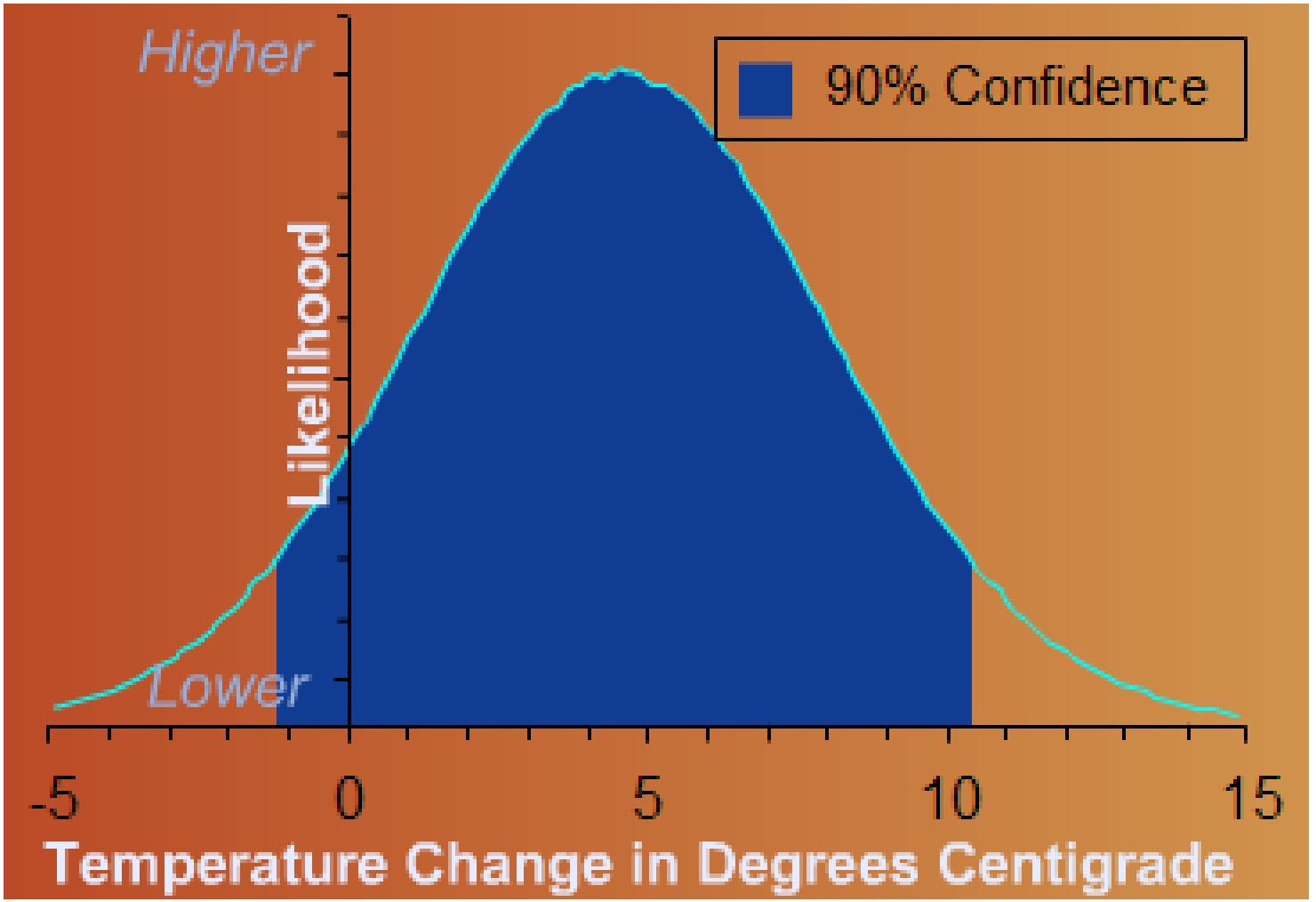

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Climate Change:

- Global warming

  $\Rightarrow$ Rising sea levels, but also:

  +

  $\Rightarrow$ Increased winter precipitation in the UK

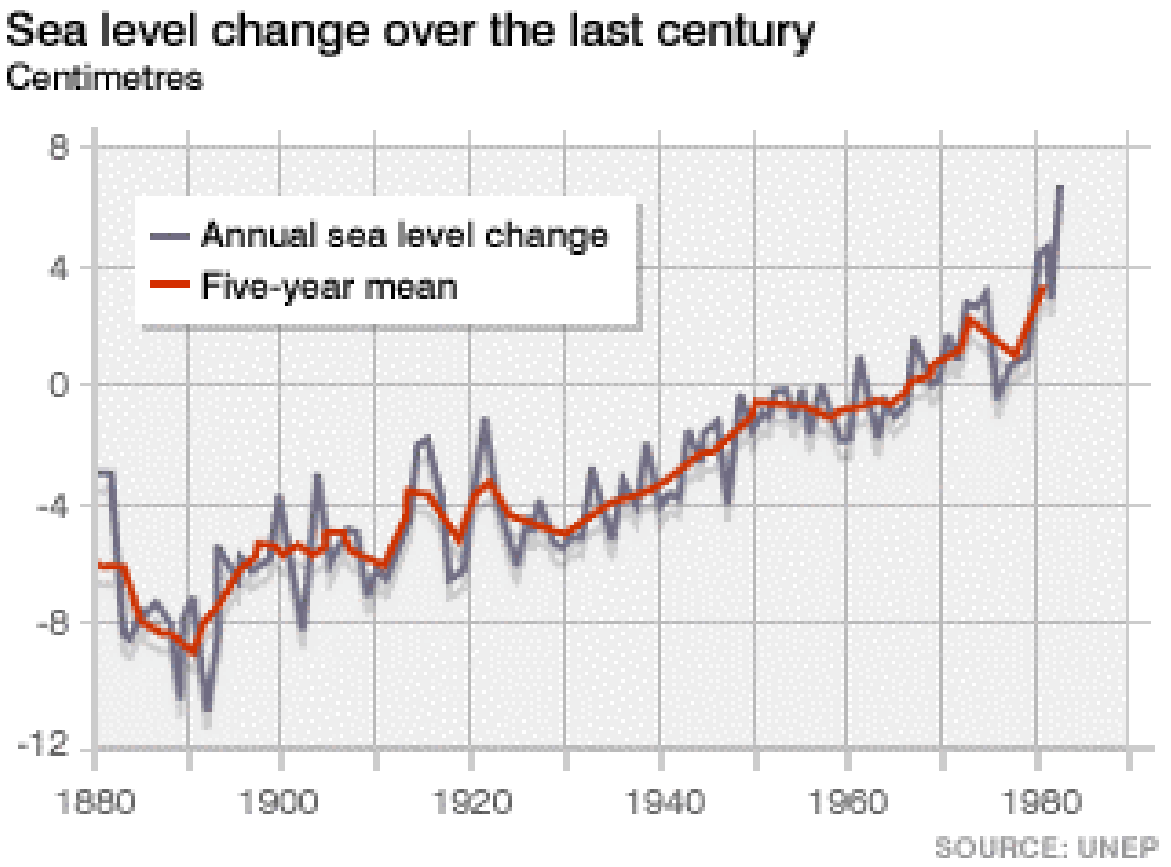
  +

  $\Rightarrow$ Increased storminess/storm surges

- Overall effect of GW:

  $\Rightarrow$ V. Large increase in flood risk in certain areas of UK

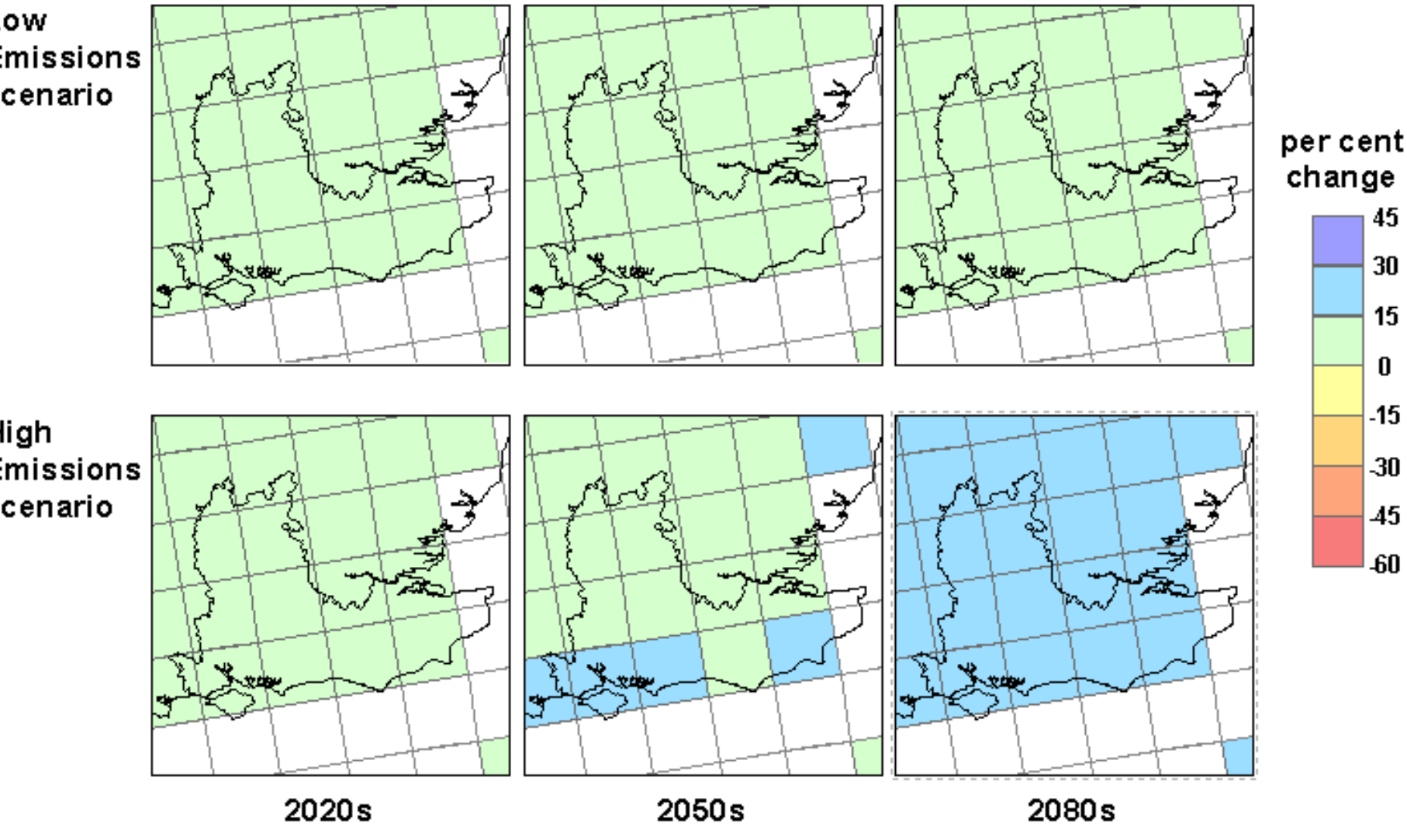
Sea Level Rise:



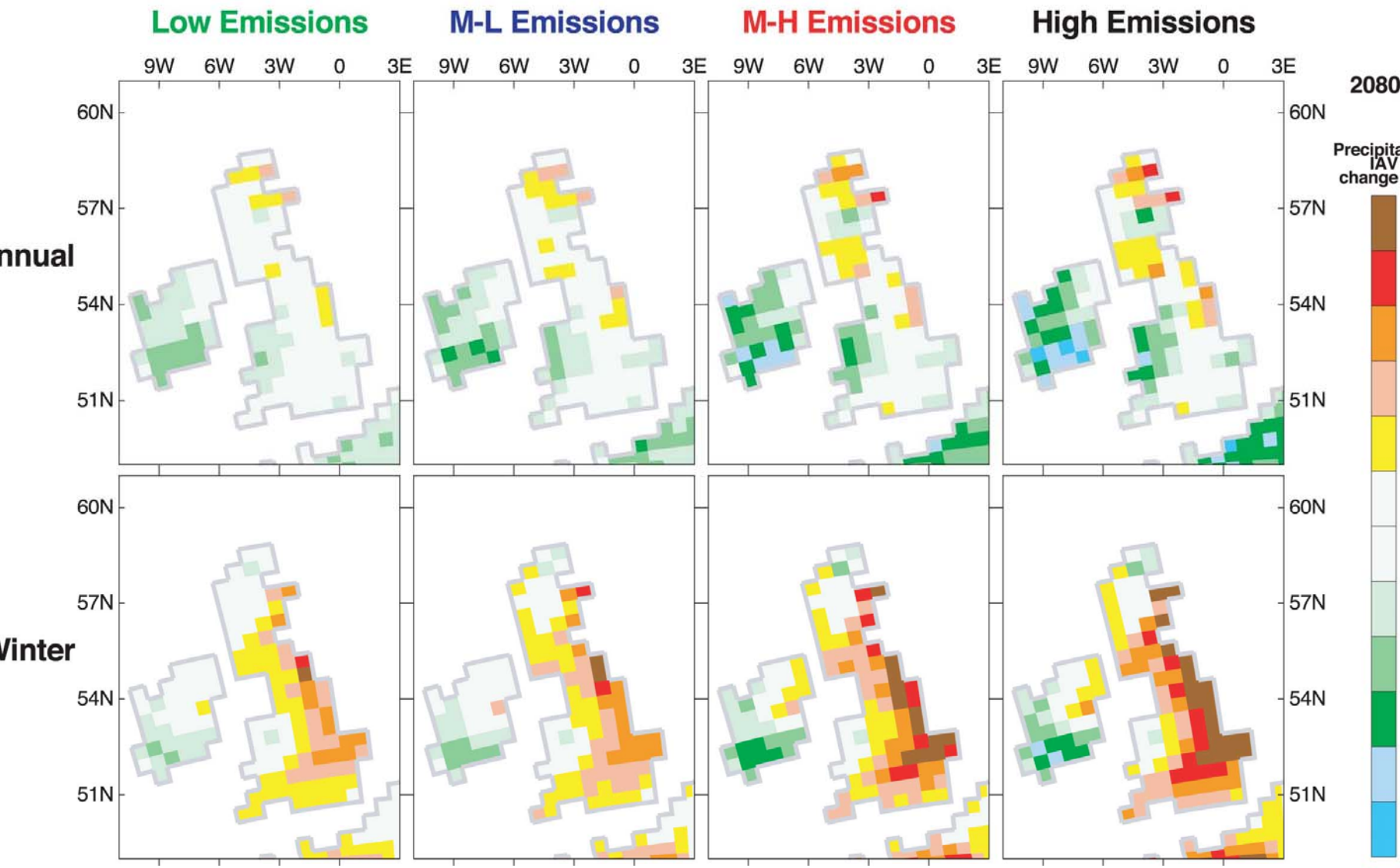
South East England

Source: UKCIP02 Climate Change Scenarios (funded by Defra, produced by Tyndall and Hadley Centres for UKCIP)

Percentage change in winter precipitation



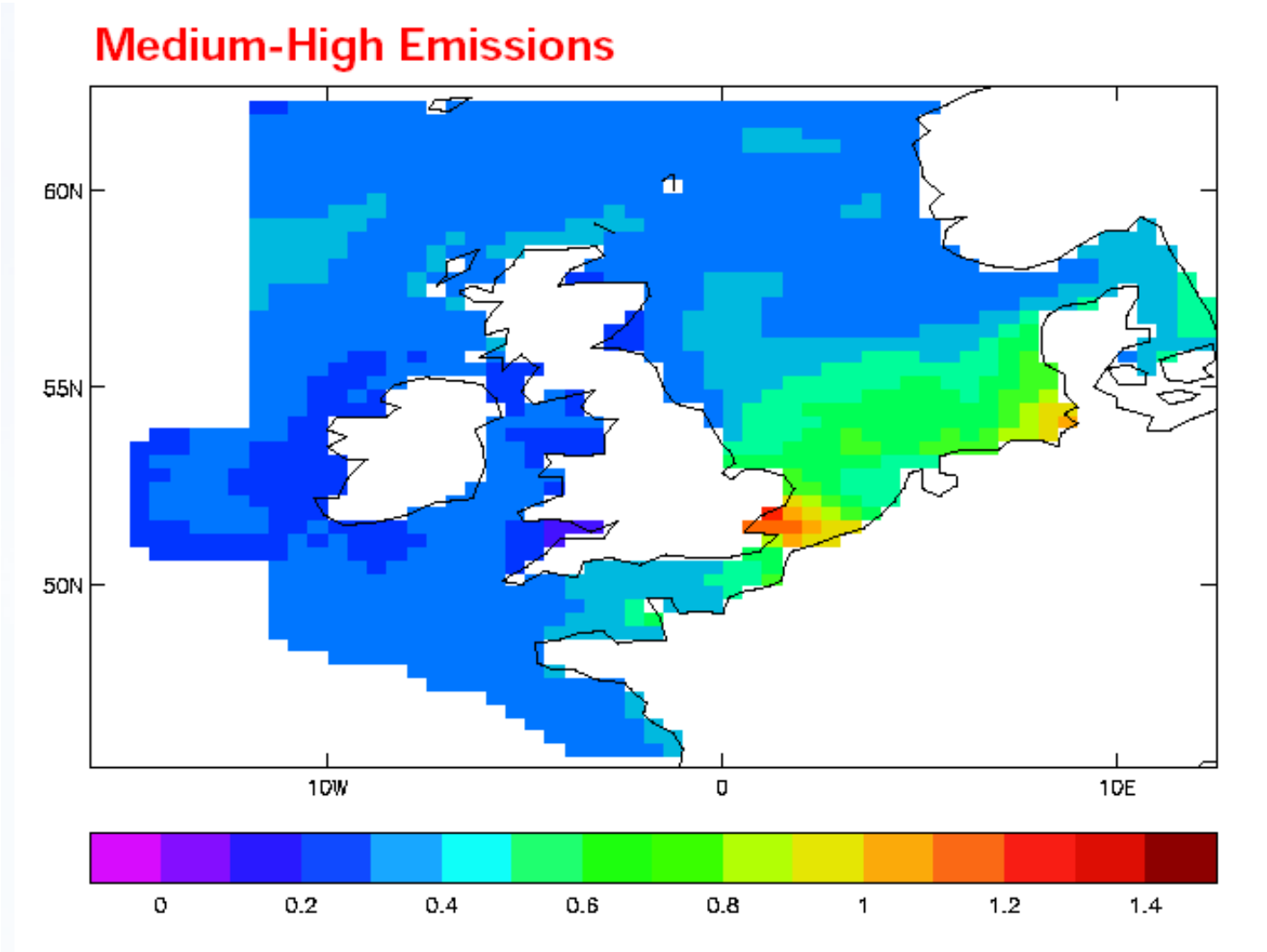
Large Increase in Winter Precipitation (20%+)



Source: Met Office Hadley Model, in Hulme et al (2002)

Combined Effect of Seal Level Rise and Storm Surges

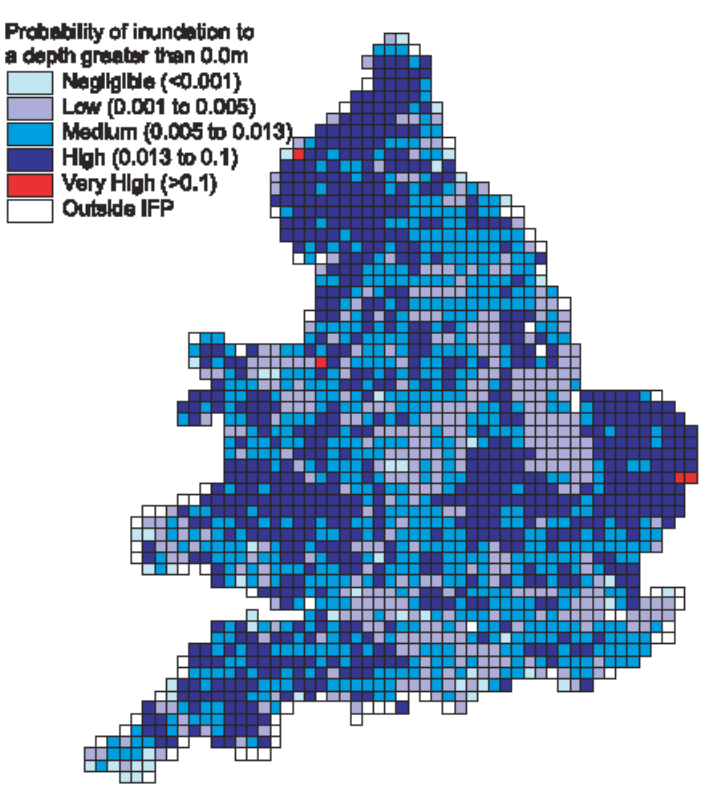
(Increase in Surge Height in metres)

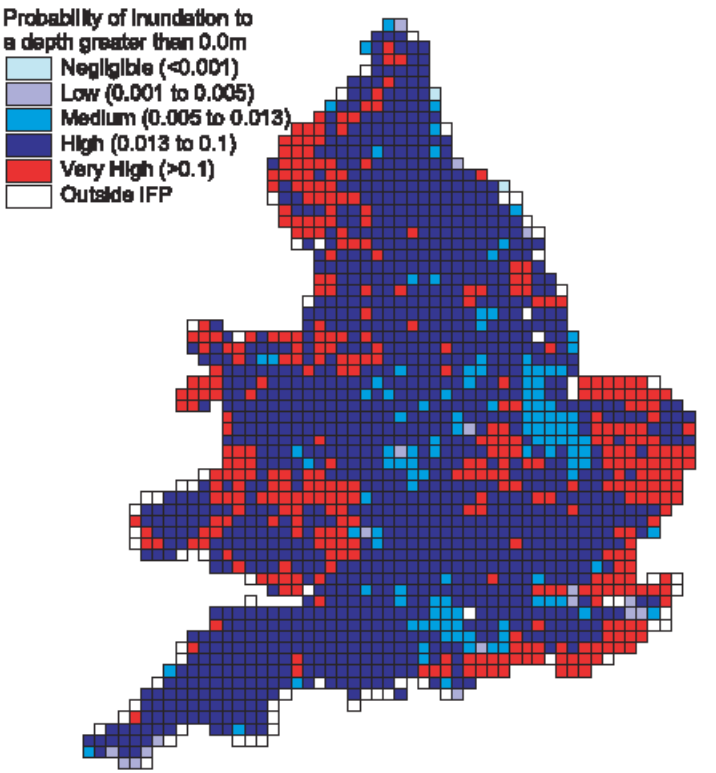


Comparison of Flood Risk

(Assuming Medium/High Emmisions):

2002 vs 2080



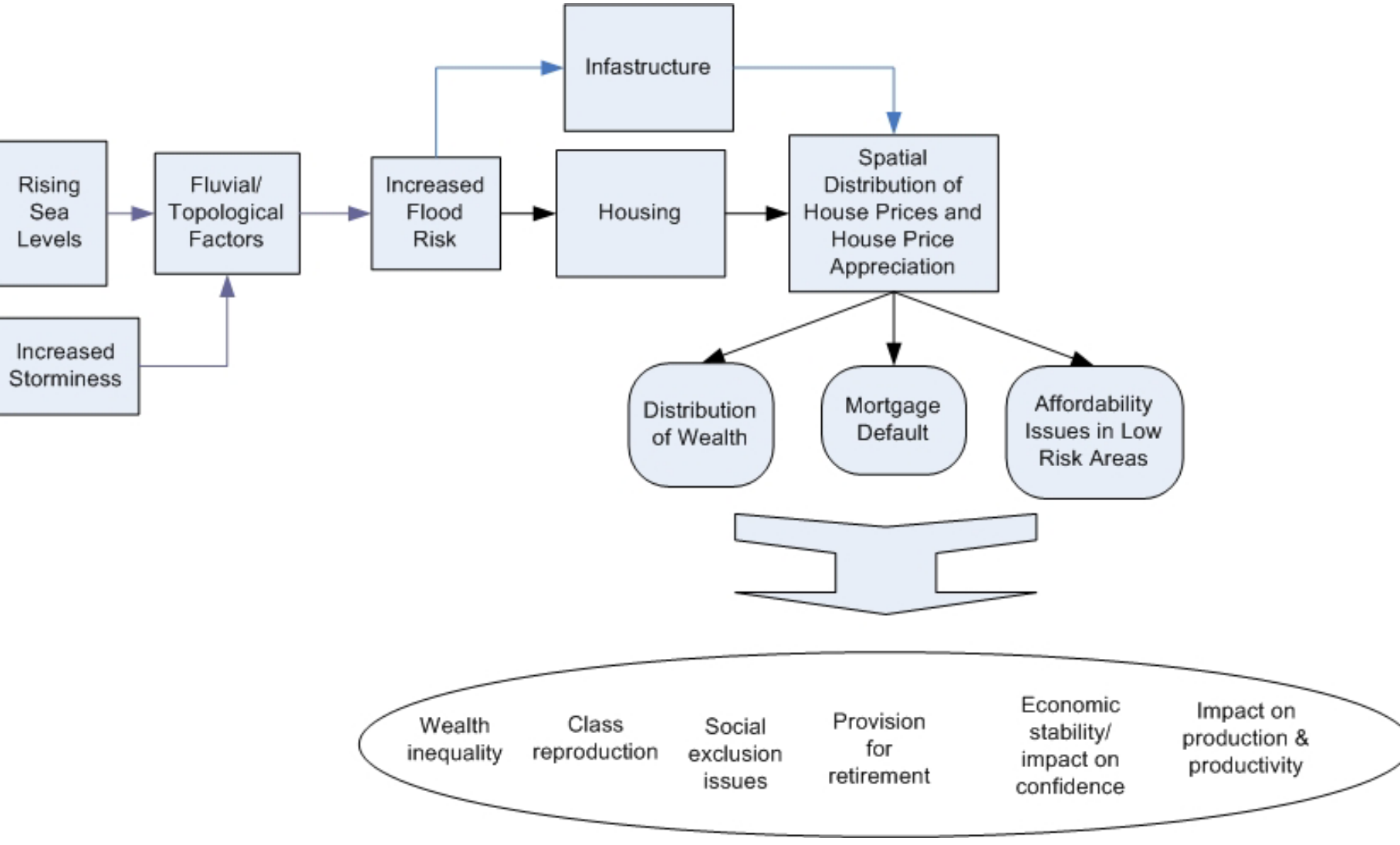


Source: Foresight Report 2002

Recent Evidence suggests these predictions may underestimate the pace of change:

- Global warming faster (& maybe less reversible) than expected
  - Due less heat reflected
    - Ice caps melt => earth's surface darker => less heat reflected into space
- Ice sheets melting at a faster rate than expected
  - Due to fracturing
    - Warming => lakes form on surface => drainage holes => ice sheet becomes unstable => fractures into icebergs

  $\Rightarrow$ Sea levels rising faster than anticipated.


Infastructure
Rising Sea Levels
Fluvial/ Topological Factors
Increased Flood Risk
Housing
Spatial Distribution of House Prices and House Price Appreciation
Increased Storminess
Distribution of Wealth
Mortgage Default
Affordability Issues in Low Risk Areas
Wealth inequality
Class reproduction
Social exclusion issues
Provision for retirement
Economic stability/ impact on confidence
Impact on production & productivity

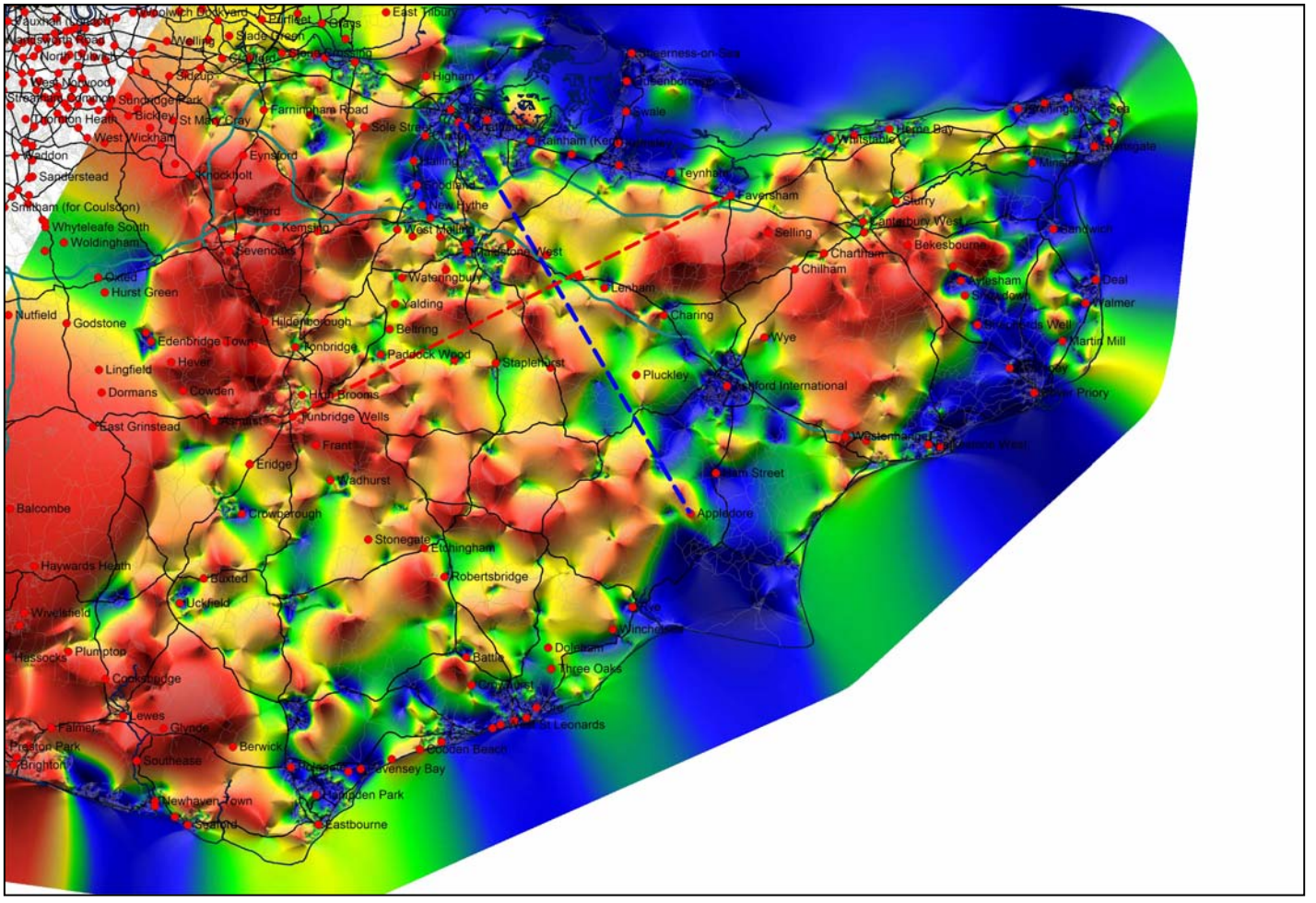
Future Trajectories in Wealth Inequality

- Flood risk could redraw the house price map of Britain
  - And in so doing, redraw the house price *appreciation* and *wealth* maps.
- Large local variations in:
  - Topological features
  - Infrastructure
  - Adaptability of dwellings

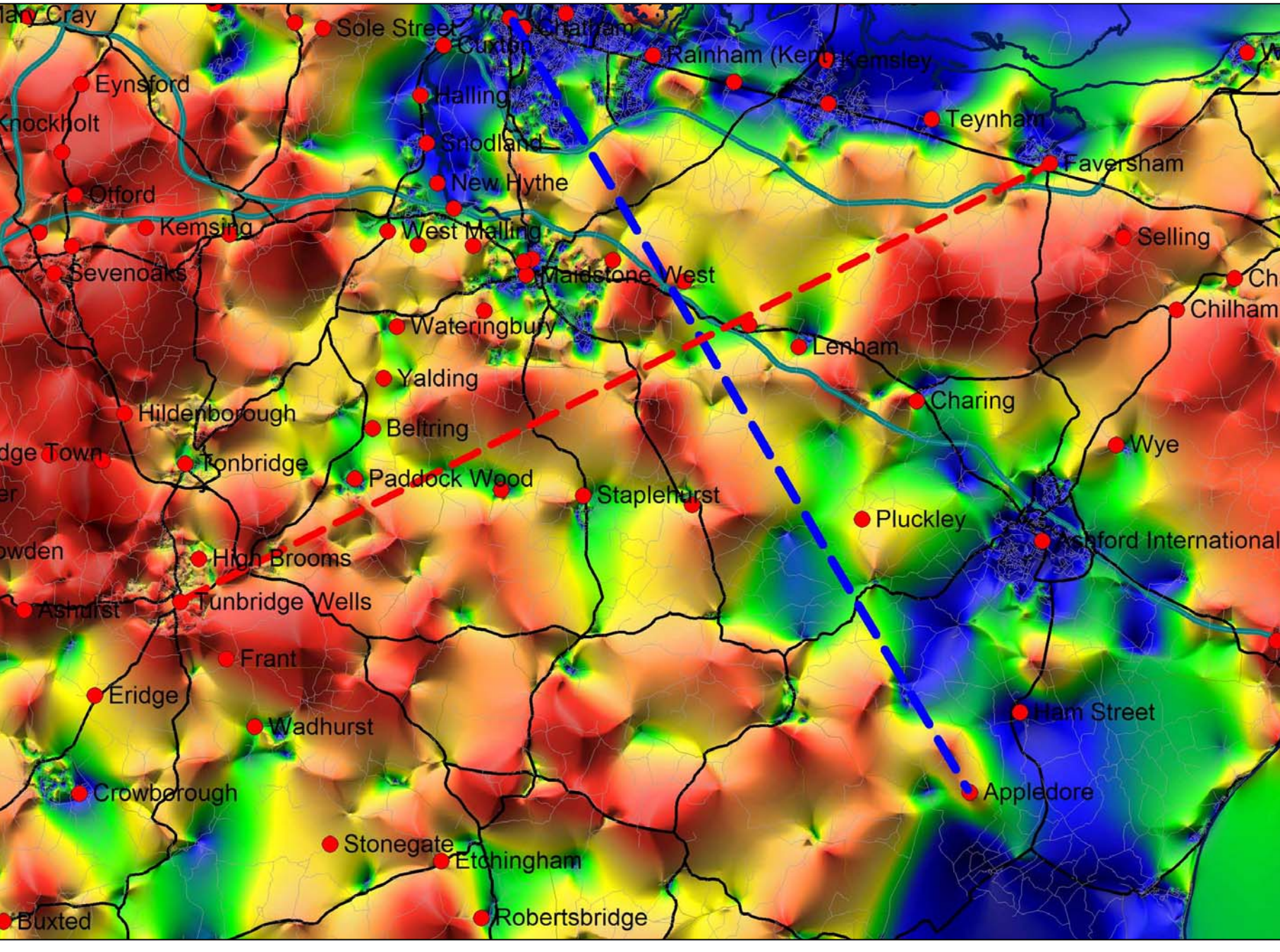
$\Rightarrow$ inequality effects of flood risk could vary hugely, even between neighbourhoods in close proximity.

Constant Quality Price Per Square Metre

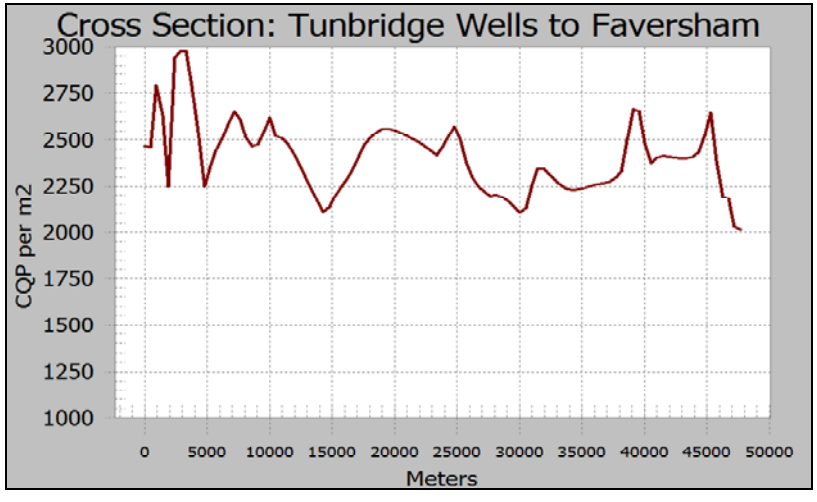
(Ken & East Sussex, December 2004)

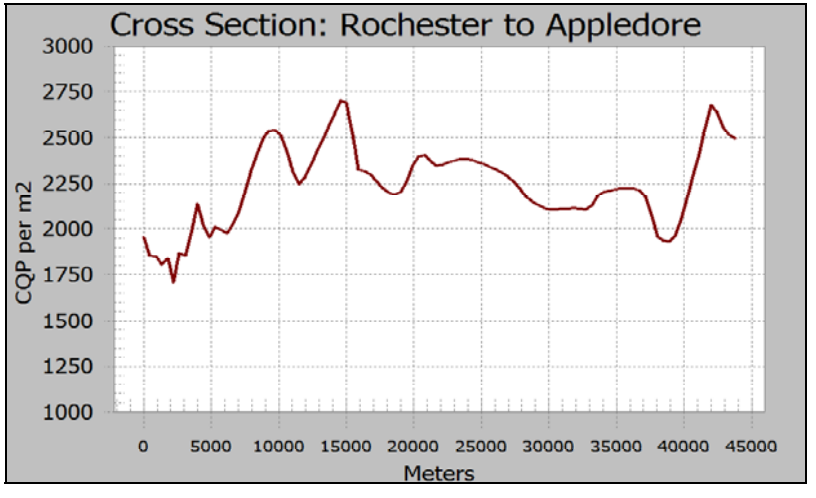


Pryce & Evans (2006) *Identifying Submarkets in England* (Forthcoming)


Sole Street
Rainham (Kent)
Kemsley
Eynsford
Halling
Teynham
Snodland
Faversham
New Hythe
Otford
Kemsing
West Malling
Selling
Sevenoaks
Maidstone West
Chilham
Wateringbury
Lenham
Yalding
Charing
Hildenborough
Beltring
Wye
Tonbridge
Paddock Wood
Staplehurst
Pluckley
High Brooms
Tunbridge Wells
Frant
Eridge
Ham Street
Wadhurst
Crowborough
Appledore
Stonegate
Etchingham
Robertsbridge

Large spatial variation in current price per square metre:

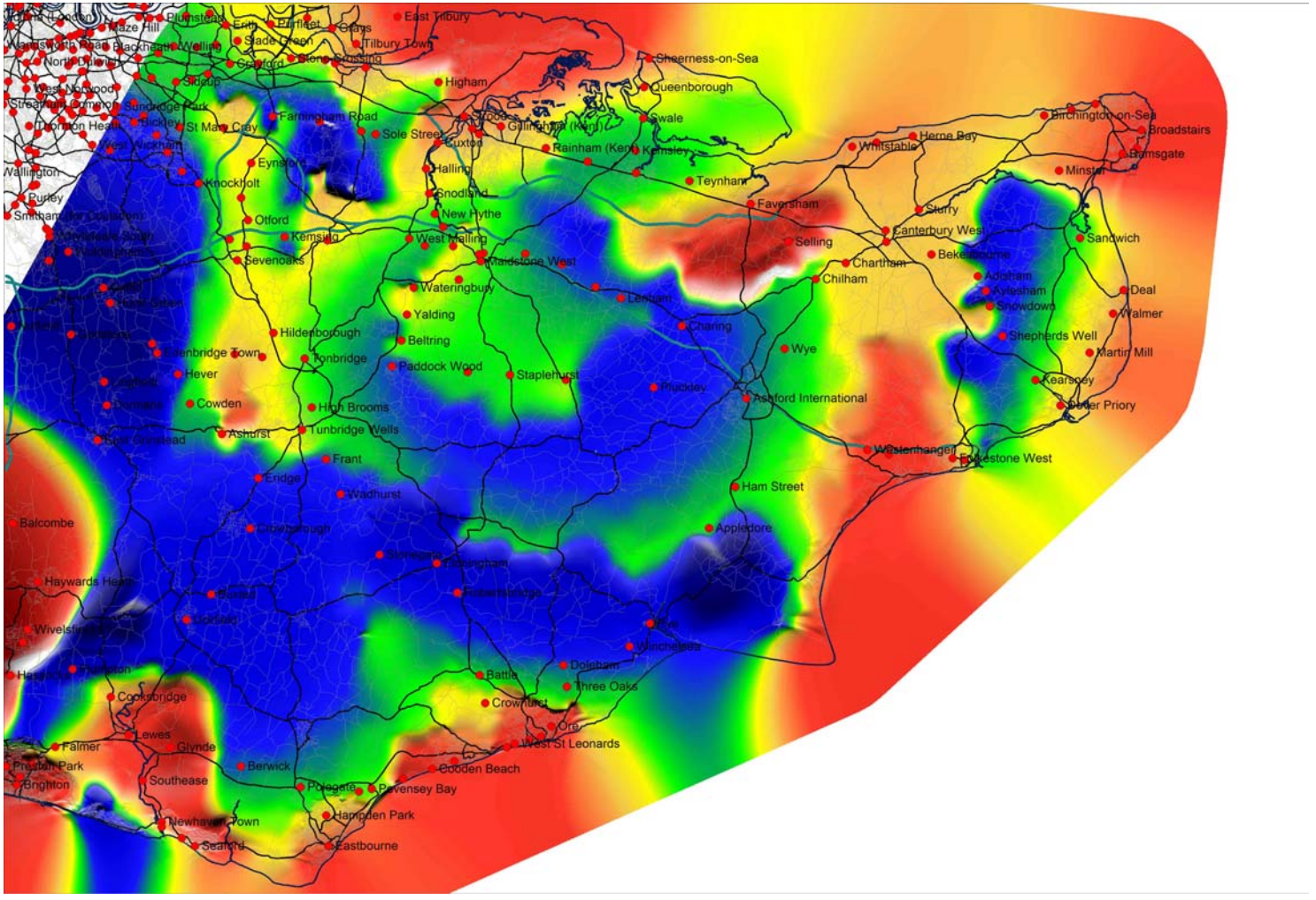




- These Spatial variations hold constant dwelling attributes & size,
  - so variation reflects neighbourhood quality and spatial "well being" factors (local amenities, access to work, crime rates, school perf)
- Significant changes to flood risk could radically affect the "well being" score for certain areas
  - map of house prices and of house price would change significantly.
  - Though little evidence at the moment that long term predictions of flood risk are affecting house price inflation…

Constant Quality House Price Inflation Surface

(Cumulative Increase from January 1996 to December 2004)



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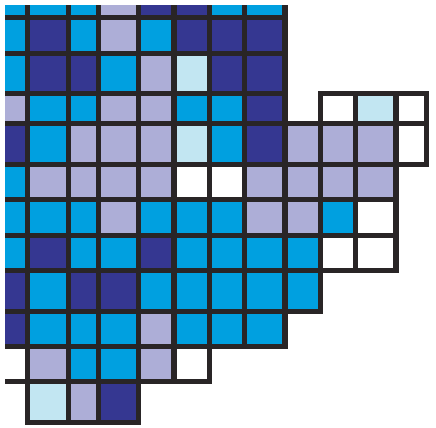
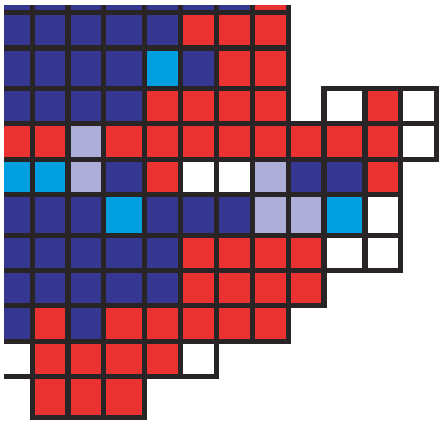
So Far No Evidence of Negative Correlation between HP Inflation and Future Flood Risk:

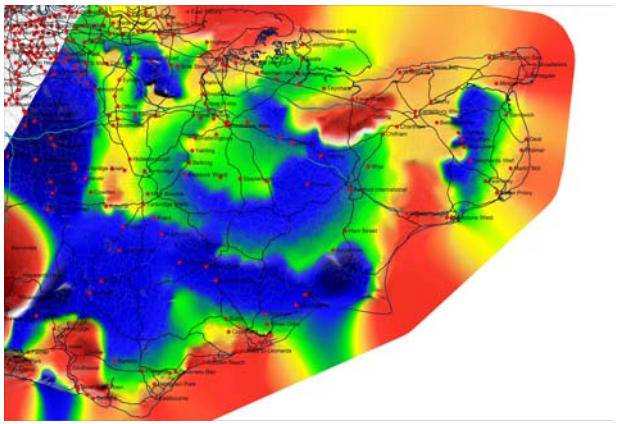
Flood Risk 2002



Flood Risk 2008



CQ House Price Inflation 1996-2004



Source: Foresight Report 2002; Pryce & Evans 2006

Anticipated Non-Linearities:

- Although the rise flood risk will be gradual, the housing market response may not
  - a delayed but very rapid adjustment due to myopia.
  - $\Rightarrow$ Sudden changes in house prices
  - $\Rightarrow$ Sudden increases in migration flows
- Myopia may be strongest among socially vulnerable groups
  - those who are elderly, unskilled, low education
  - $\Rightarrow$ inequalities in exposure to risk may be exacerbated.