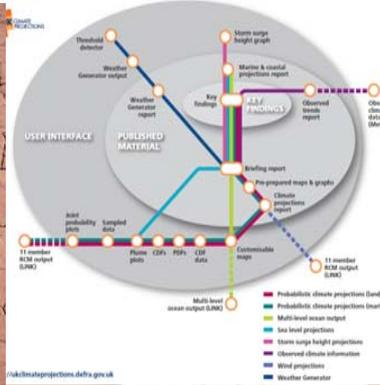


# Adaptation science and policy

## Science-Policy interactions in national adaptation policy

Utrecht, 14-15 September 2009



Dr Chris West, Director  
UK Climate Impacts Programme

# “Adaptation to climate change” is too hard, so....

- Consider two easier problems:
  - Adaptation in a stationary climate
  - Climate change adaptation with perfect decision-making
- What do we learn from these exercises?
- The evolved paradigm for climate change adaptation
- Another, perhaps better adapted to our present situation

# Adaptation in a stationary climate

- Adaptation is still required and still happens; climate risks still have to be managed. Is there an adaptation deficit? – are we well-enough adapted?
- Resilience gives way to efficiency – competitiveness is king
- Only innovation and market changes drive reassessment of goals
- Rules on how the human-planet system operates are forgotten or unknown
- Adaptation is reactive, not proactive
- Adaptation is not separated out as a policy on its own
- Parallels to biological adaptation

# An aside - life history traits

- r-selected species: sparrows, cockroaches, mice, weeds
  - Good at reproduction - many cheap offspring
  - Exploit new or unstable environments
  - Resilient - aim for “good enough”
- K-selected species: otters, albatrosses, okapi, people
  - Good at competition – few precious offspring
  - Depend on stable environment
  - Efficient – aim for “perfect”

# If climate starts to change, or rate increases, ....

- Need to re-balance from efficiency towards resilience
- Adaptation acquires a time element
- Proactive adaptation becomes necessary
- Adaptation to change may become a separate policy
- Need to know rules that govern human-planet system
- Need to identify impacts, consequences of impacts, and potential response actions

# Adaptation in perfect decision-making world

- Awareness of mutual dependence of environment and people – environment not framed only as “victim”
- Awareness of rules that govern society
- Existing portfolio of risks is well-managed - no adaptation deficit
- Adaptation tasks required:
  - Climate change is happening – these are potential impacts
  - Imagine links between impacts and consequences
  - Decision-makers will ensure good management of new risks
- Well adapted world!

# Real situation – Earth - 2009

- Climate change caused by unforeseen result of industrial revolution.
- Effect is so subtle and in such a complex system that the signal is only now just appearing out of the noise,
- Understanding the system seems to need the most sophisticated mathematical modelling.
- All credit to climate scientists for alerting the world to this issue.
- Significant effect on policy.....

# Climate Change-Impact-Consequence-Response

- Climate scientists see a chain of increasing uncertainty (and decreasing importance?).
- Policy-makers see an obvious area of scientific evidence – the “Climate Change” end of the chain.
- Evidence at the other end of the chain is not scientific and may therefore be invisible to policy-makers used to scientific evidence.
- Policy-makers and scientists have a shared interest in pushing their joint process along the chain.
- Resulting paradigm is “Predict, Optimise, Relax”

# Paradigm: “Predict, Optimise, Relax”

- Focus on Climate **Change** – assumes “today” is OK
- Led by physical science model developers
- Uncertainty remains a barrier to decision-making
- Climate remains a separate issue
- Decision-makers will always want better data

# What have we learned?

- Poor decision-making, uncertainty and unknown rules
- Imagination Gap and Adaptation Deficit
- Perils of “Efficiency”
- Ill-prepared for proactive action
- Non-scientific knowledge of consequences and responses – rests with decision-makers, practical men, hands (not brains)

# Paradigm: “Assess, Hedge, Review”

- Focus on Climate **Risks** –assumes “today” needs work
- Led by decision-makers, now empowered to act
- Uncertainty is made explicit and addressed
- Manage current risks, then turn to consider a range of futures
- Climate knowledge appears at the appropriate stage
- Immediate benefits to “day job”
- Adaptation is never finished

# UKCIP and UKCP09



**UKCIP - UK Climate Impacts Programme**

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



**UKCP09 - 2009 Climate Projections**

<http://ukclimateprojections.defra.gov.uk>

**UKCP09 launched on 18 June 2009**