Health co-benefits of the low carbon economy - addressing the governance challenges

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CO₂ over the last 650,000 years

For 650,000 years, atmospheric CO₂ has never been above this line ... until now
Climate Change occurring faster than expected?

- IPCC’s *4th Assessment Report* now looks conservative

- Subsequent research shows increasing rates of:
  - Global Greenhouse Gas emissions
  - Ice melting (Arctic sea ice, Greenland/Antarctic ice-sheets, alpine glaciers)
  - Sea level rise
  - Increasing saturation of carbon ‘sinks’
  - Carbon stored in permafrost = x2 atmospheric carbon
Reducing inequities and total GHG emissions - Contraction and Convergence

http://www.gci.org.uk/contconv/cc.html

This example shows regionally negotiated rates of C&C. It is for a 450ppmw Contraction Budget, with Convergence by 2030.
Health co-benefits of the ‘low-carbon’ economy
(Lancet series 2009)

Through policies in several sectors e.g.

- Housing
- Transport
- Food and agriculture
- Electricity generation
### Benefits of household energy efficiency in the UK
(combined insulation and ventilation control improvements)
(Wilkinson et al 2009)

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Reduced exposures e.g. to fine particles, radon, cold, mould, tobacco smoke</th>
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<td>Premature deaths averted</td>
<td>~ 5400/ year</td>
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<td>Mt-CO$_2$ saved (vs 1990)</td>
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Reduced exposures e.g. to fine particles, radon, cold, mould, tobacco smoke

- Premature deaths averted: ~ 5400/ year
- Mt-CO$_2$ saved (vs 1990): 55
Health and GHG benefits of Indian improved stove programme -150 m over 10 years

Wilkinson P Smith KR et al 2009

• 2 Million premature deaths averted (mainly women and children)
• Reductions in black carbon, methane, ozone precursors ~ 0.5-1.0 billion tonnes of CO$_2$ eq over the decade
Cost <$50 per household every 5 years
Urban Transport Pathways modelled: Increased active travel and low carbon driving in London and Delhi (Woodcock et al 2009)
## Health effects of increased active travel by disease (London)

Diabetes, depression and bowel cancer not shown (Woodcock et al 2009)

<table>
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<tr>
<th>Disease</th>
<th>Change in disease burden</th>
<th>Change in premature deaths</th>
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<tr>
<td>Ischaemic heart disease</td>
<td>10-19%</td>
<td>1443-2207</td>
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<tr>
<td>Cerebrovascular disease</td>
<td>10-18%</td>
<td>866-1271</td>
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<tr>
<td>Dementia</td>
<td>7-8%</td>
<td>195-250</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>12-13%</td>
<td>203-211</td>
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<tr>
<td>Road traffic crashes</td>
<td>19-39%</td>
<td>47-86</td>
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</tbody>
</table>
Figure 1: Potential annual NHS expenditure averted by year and health outcome from Increased Active Travel scenario

• 80% of total emissions in sector from livestock production

• Reducing animal source saturated fat by 30 % in the UK could reduce heart disease deaths by ~ 15% (~ 18,000 premature deaths) and a similar % in São Paulo, Brazil
Premature Deaths Avoided in 2030 from reduced particulate air pollution due to lower carbon electricity generation (Markandya et al 2009 Lancet)
What are the challenges to governance?

- Influencing international negotiations
- Engaging the UN and international agencies
- Integrating health into national sectoral policies
- Developing integrated indicators of health and development
- Overcoming vested interests
Barriers to policy change

- Vested interests
- Organised denialism
- Political short-termism
- Divided public opinion
- Dysfunctional financial and tax systems
- Perception that change is expensive and difficult
Current (2009-10) climate finance flows in US $bn (Buchner et al 2011)
Developing governance at appropriate levels

Integrated view of institutions and sectors relevant to climate change and health

Int J Env Res. Pub Health 2012 Bowen, Friel, Ebi, Butler, Miller, McMichael
Governance actions (McQueen et al 2012 WHO)

- Evidence support
- Setting goals and targets
- Coordination
- Advocacy
- Monitoring and evaluation
- Legal mandate and framework
- Financial support
- Implementation and management
Examples of integrated indicators

- Affordable access to clean energy
- Active travel in urban centres
- Consumption of animal source saturated fat
- Use of biofuels that compete with food production
Bringing together science and advocacy communities

- Making links between policies on-
- Social determinants of health
- Non-communicable disease prevention
- The ‘Green economy’
- Environmental protection
- International development
- Human Rights
Conclusions

Policies that address public health, development and climate change together are more attractive than focusing on them in isolation. The resulting health and societal co-benefits can help avert health service costs and offset the costs of low carbon policies. Effective governance requires ‘joined –up’ thinking including measures of development beyond economic growth.