

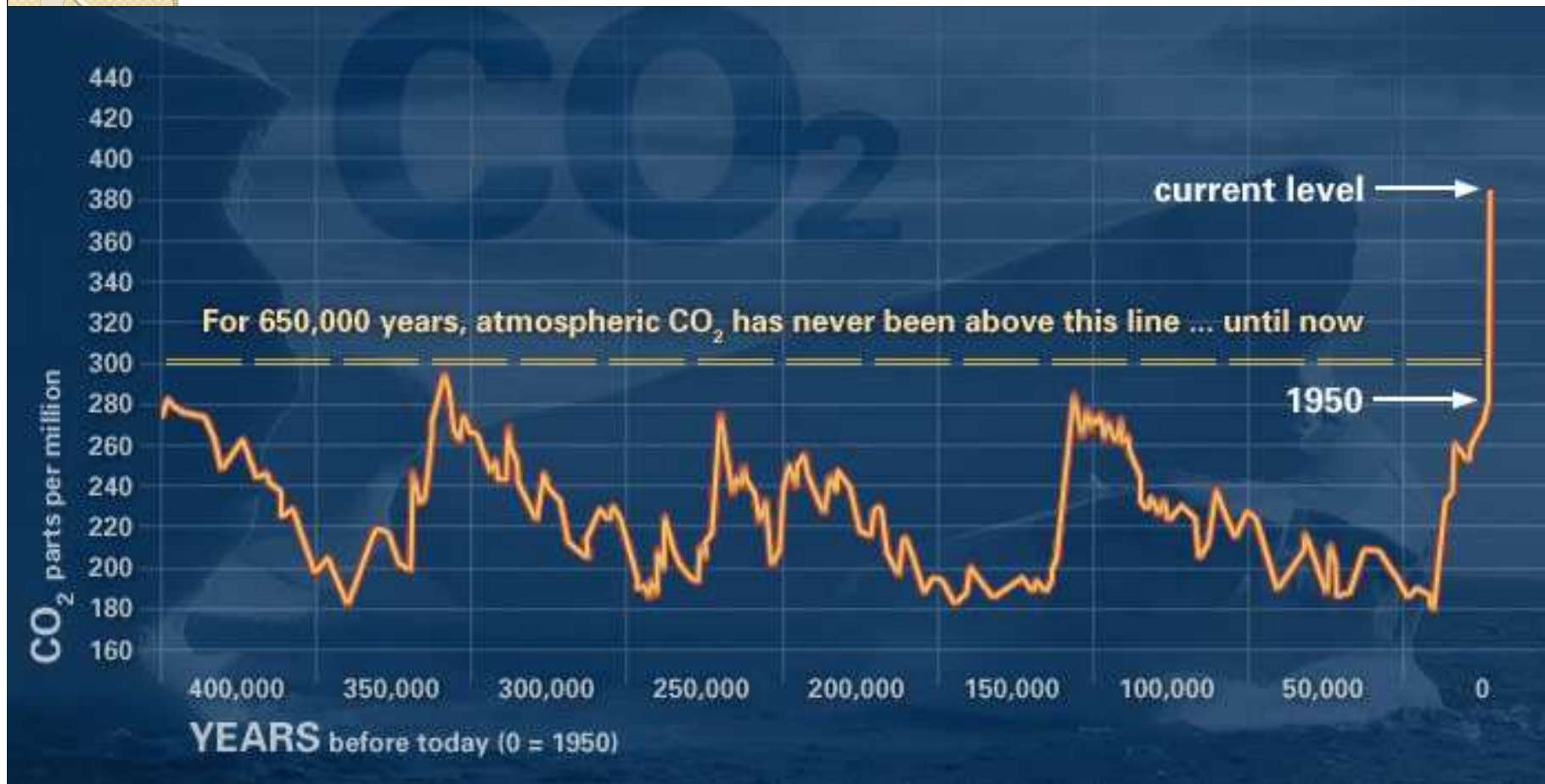
# Health co-benefits of the low carbon economy -addressing the governance challenges

Andy Haines



LONDON  
SCHOOL *of*  
HYGIENE  
& TROPICAL  
MEDICINE

# CO<sub>2</sub> over the last 650,000 years



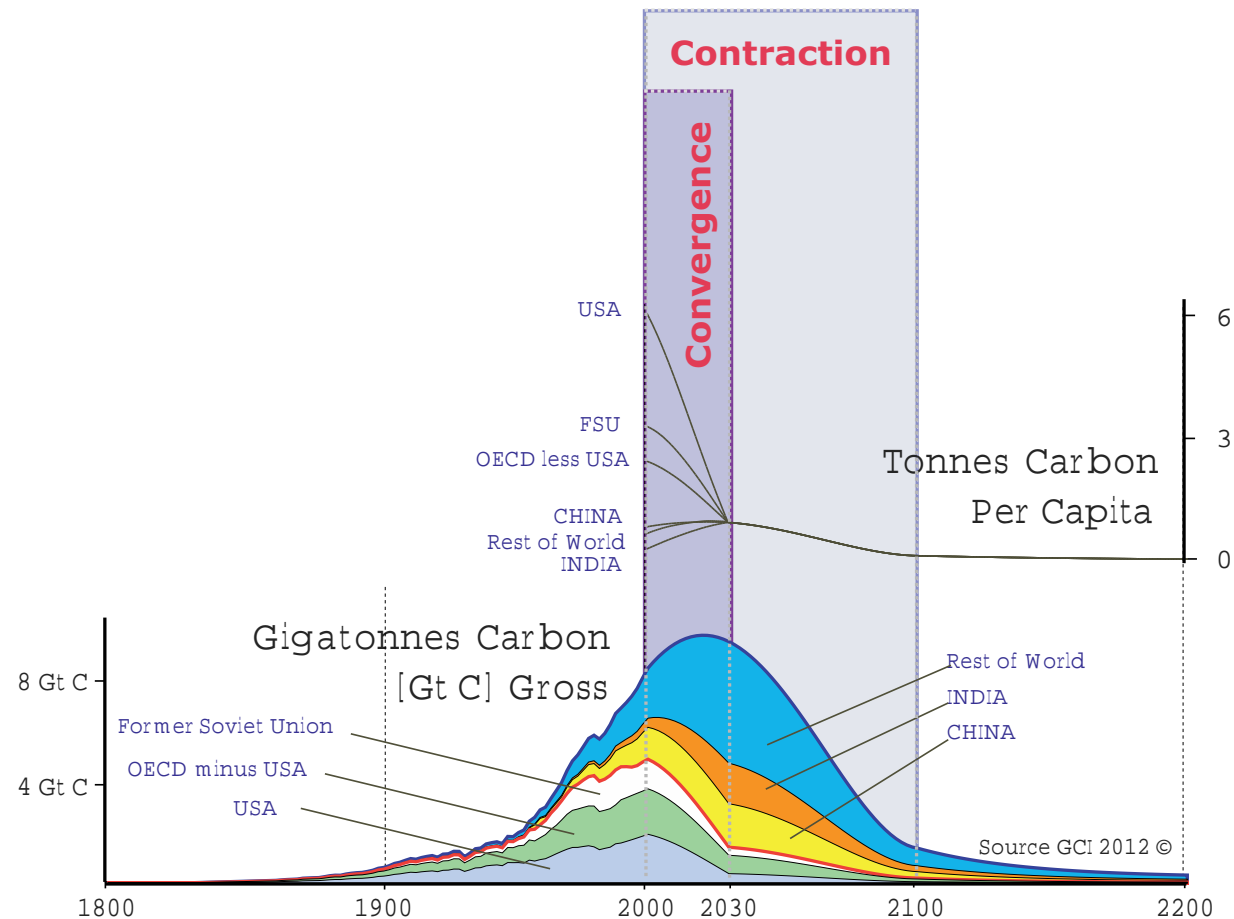
# Climate Change occurring faster than expected?

- 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 rates of global C&C in 6 regions.  
It is for a 450 ppmv Contraction Budget with Convergence by 2030.



# Health co-benefits of the 'low-carbon' economy

(Lancet series 2009)

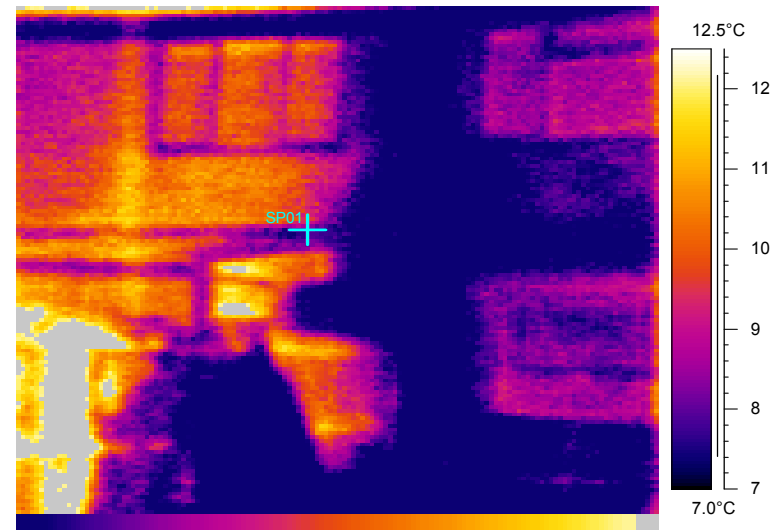
Through policies in several sectors e.g.

- 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)



Impacts	Reduced exposures e.g. to fine particles, radon, cold, mould, tobacco smoke
Premature deaths averted	~ 5400/ year
Mt-CO <sub>2</sub> 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<sub>2</sub> 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)



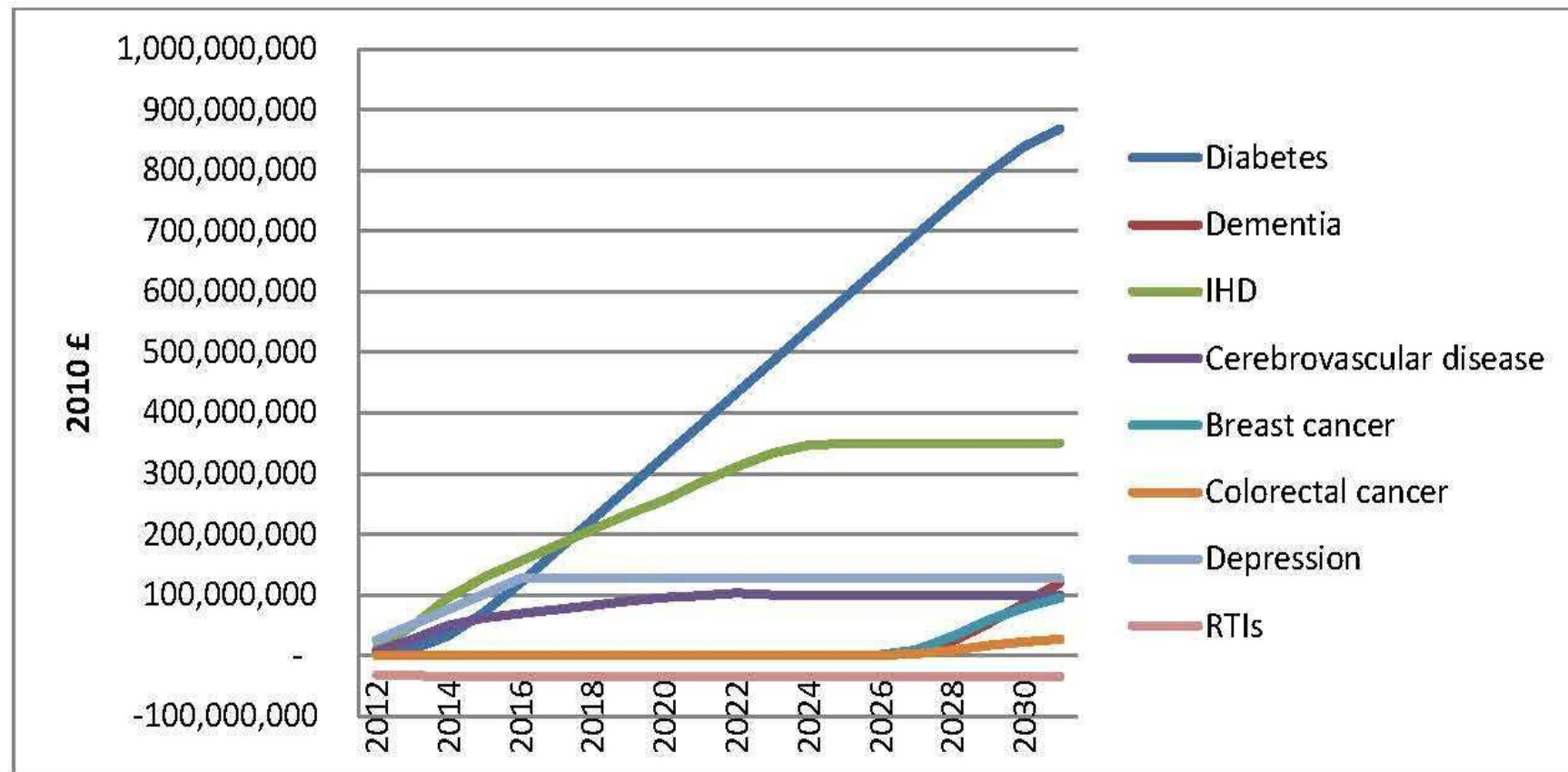


# Health effects of increased active travel by disease (London)

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

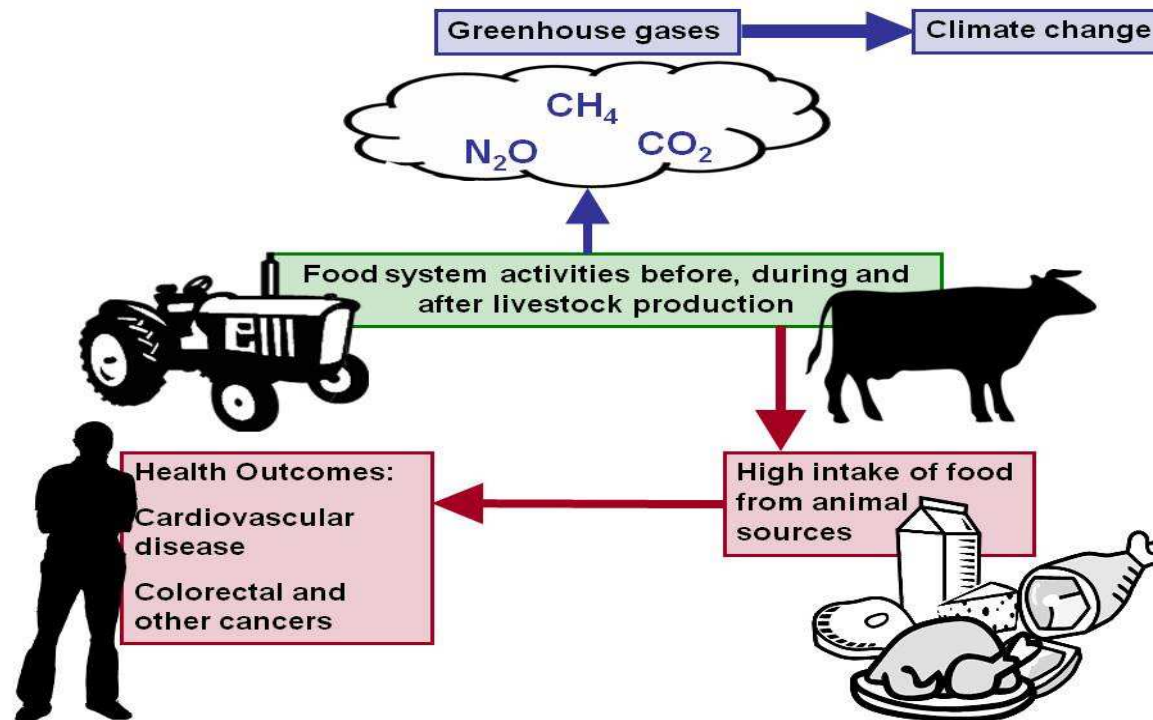
	Change in disease burden	Change in premature deaths
Ischaemic heart disease	10-19%	1443-2207
Cerebrovascular disease	10-18%	866-1271
Dementia	7-8%	195-250
Breast cancer	12-13%	203-211
Road traffic crashes	19-39%	47-86

**Figure 1: Potential annual NHS expenditure averted by year and health outcome from Increased Active Travel scenario**



James Jarrett, James Woodcock, Ulla K. Griffiths, Zaid Chalabi,  
Phil Edwards , Ian Roberts , Andy Haines Lancet 2012

# Food and Agriculture Sector

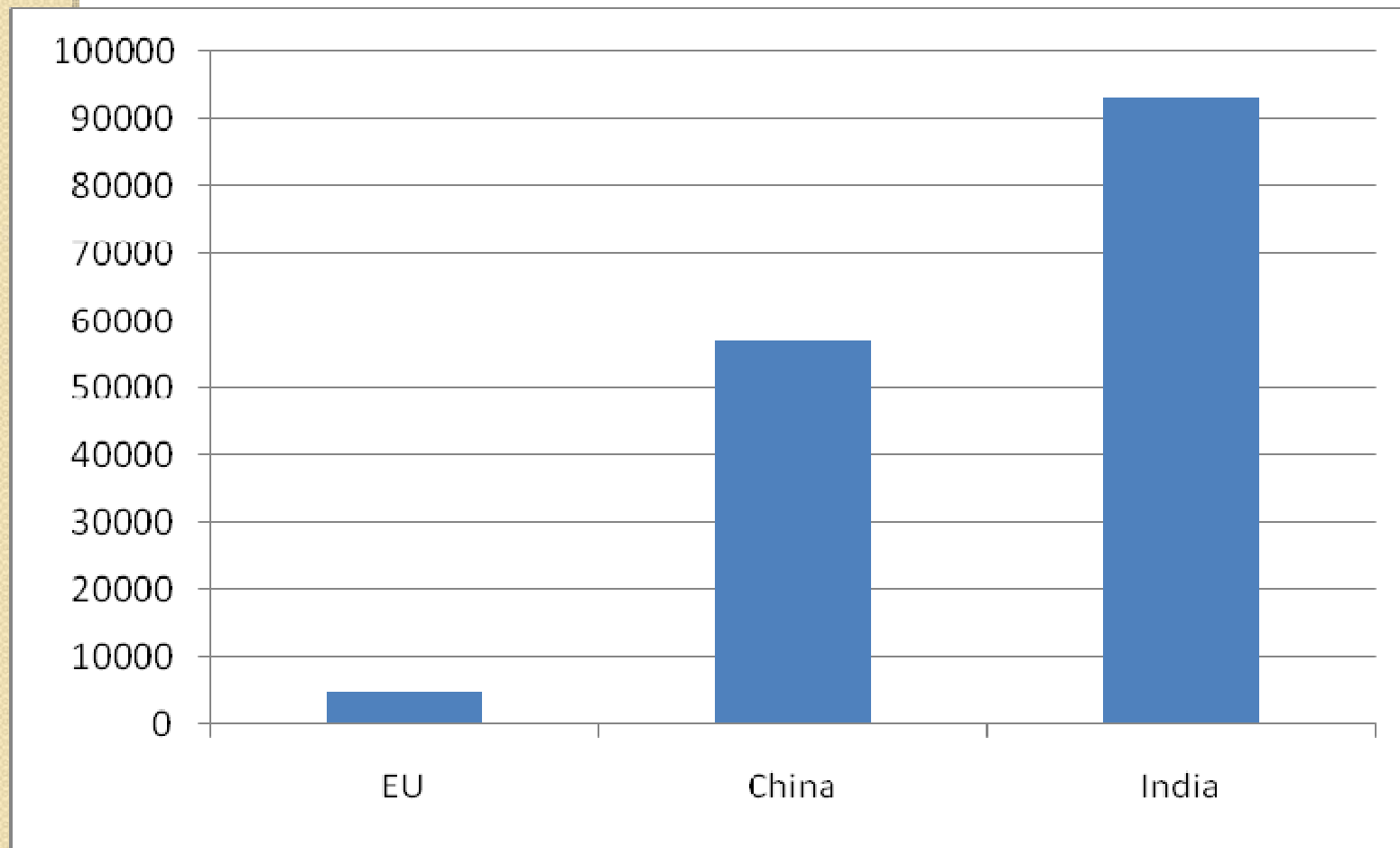



- 80% of total emissions in sector from livestock production
- Reducing animal source saturated fat by 30 % in the UK could reduce heart disease deaths by ~ 15% (~ 18,000 premature deaths) and a similar % in São Paulo, Brazil



# Premature Deaths Avoided in 2030 from reduced particulate air pollution due to lower carbon electricity generation

(Markandya et al 2009 Lancet)



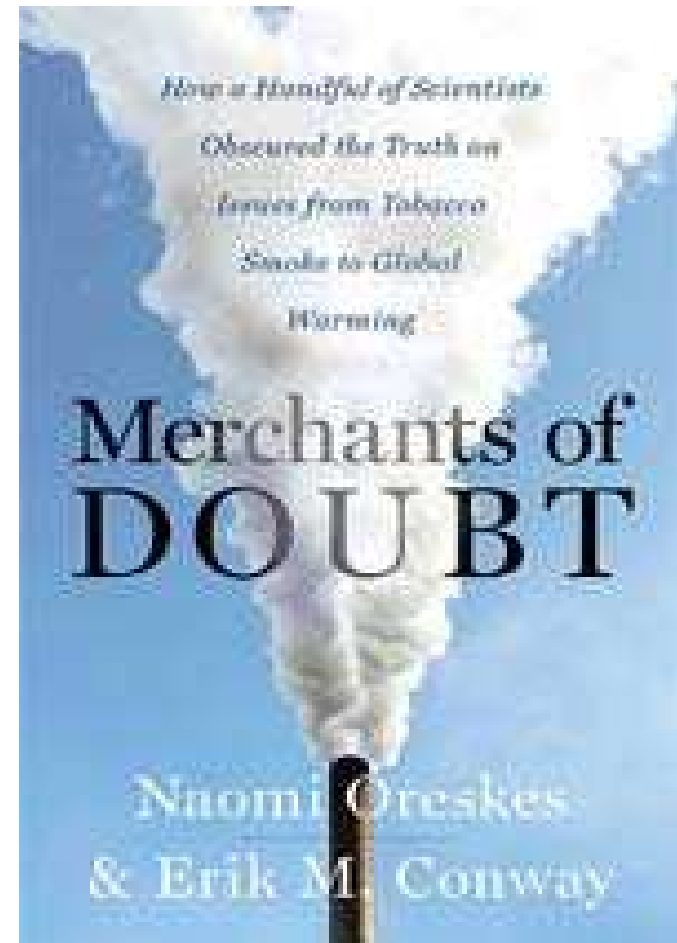


# **What are the challenges to governance?**

- 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

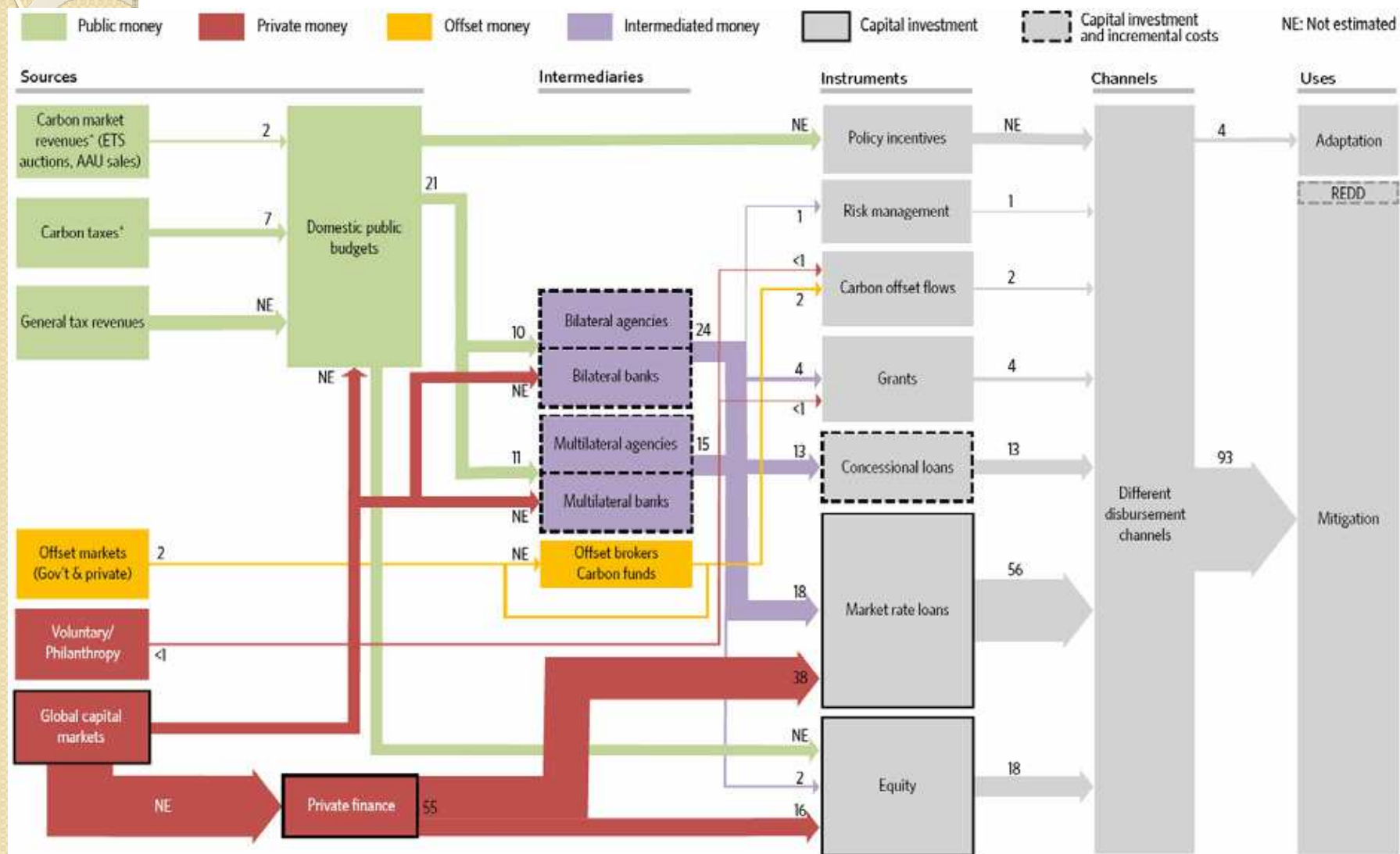
# Barriers to policy change

- Vested interests
- Organised denialism
- Political short-termism
- Divided public opinion
- Dysfunctional financial and tax systems
- Perception that change is expensive and difficult



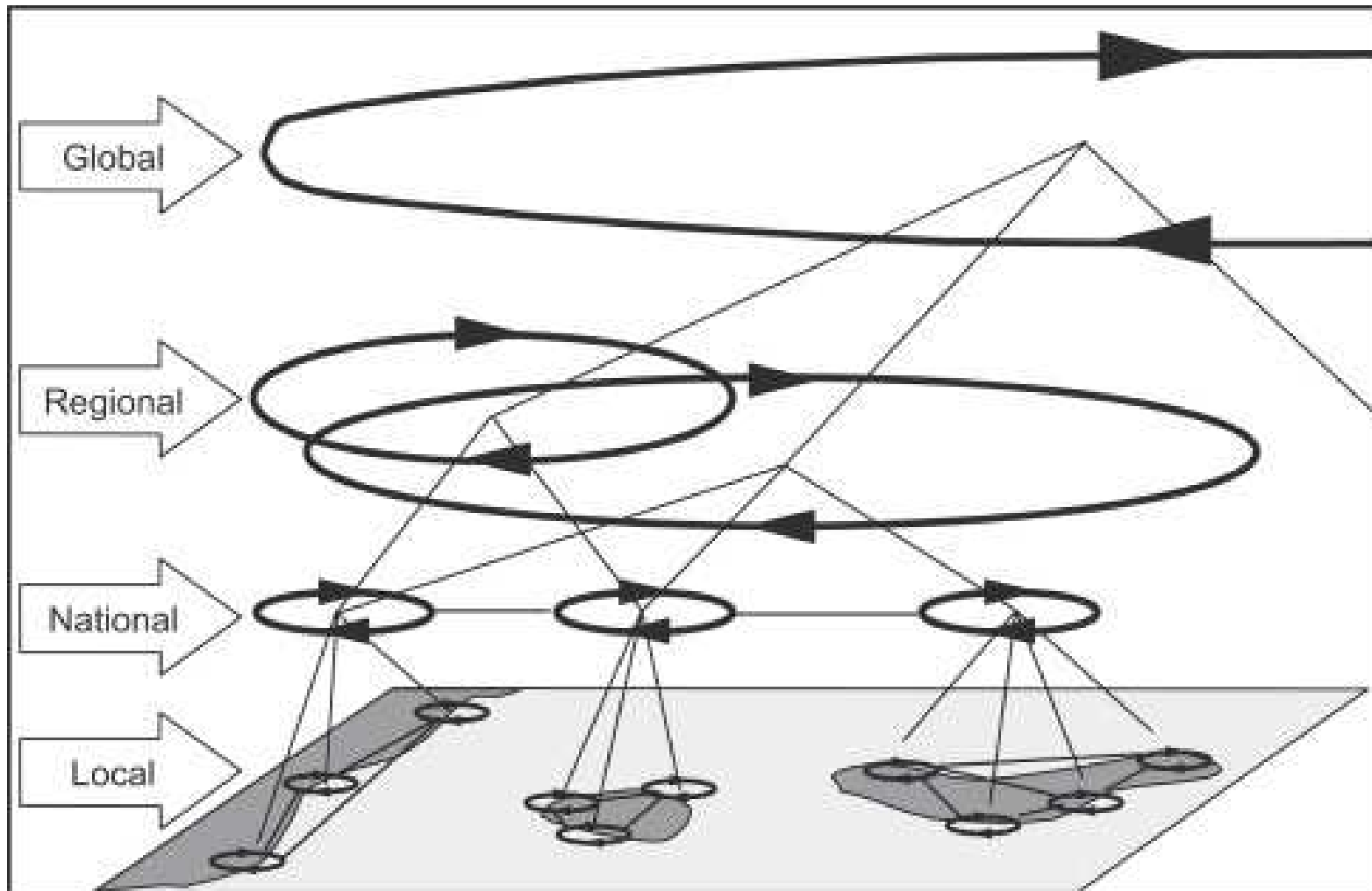


# Current ( 2009-10) climate finance flows in US \$bn (Buchner et al 2011)



# Developing governance at appropriate levels

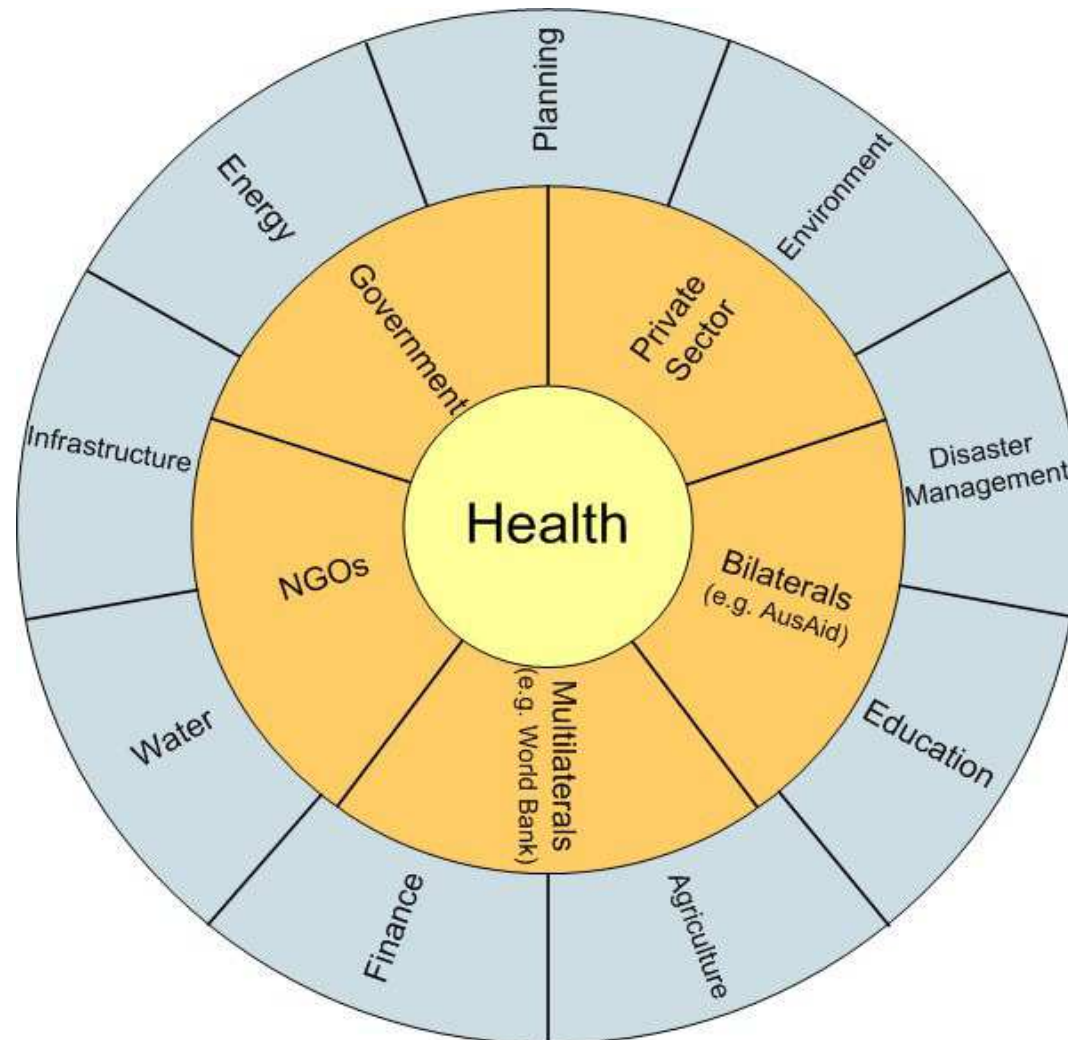
Fanning et al Marine Policy <http://www.sciencedirect.com/science/article/pii/S0308597X07000097>



# 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



figure from TMG-Foundations goals  
...tmgcmr.org



## **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.**