

Swindon Strategic Partnership Conference

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**TACKLING CLIMATE CHANGE TOGETHER:
The Launch of the Swindon Climate Change Action Plan**

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and

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Swindon

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- Towards a Sustainable Energy System: Locally and Nationally
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ENERGY AND THE ENVIRONMENT

- Energy sources of various kinds heat and power human development
- Unwanted 'side' effects
 - ⇒ acid rain / global warming
- Need for sustainable development
 - ⇒ sustainable energy strategy (energy efficiency renewables and micro-generators, and possibly nuclear power)
- Conflict with energy market liberalisation

SUSTAINABLE DEVELOPMENT

- Balancing economic and social development with environmental protection

→ **“people, planet, prosperity”**

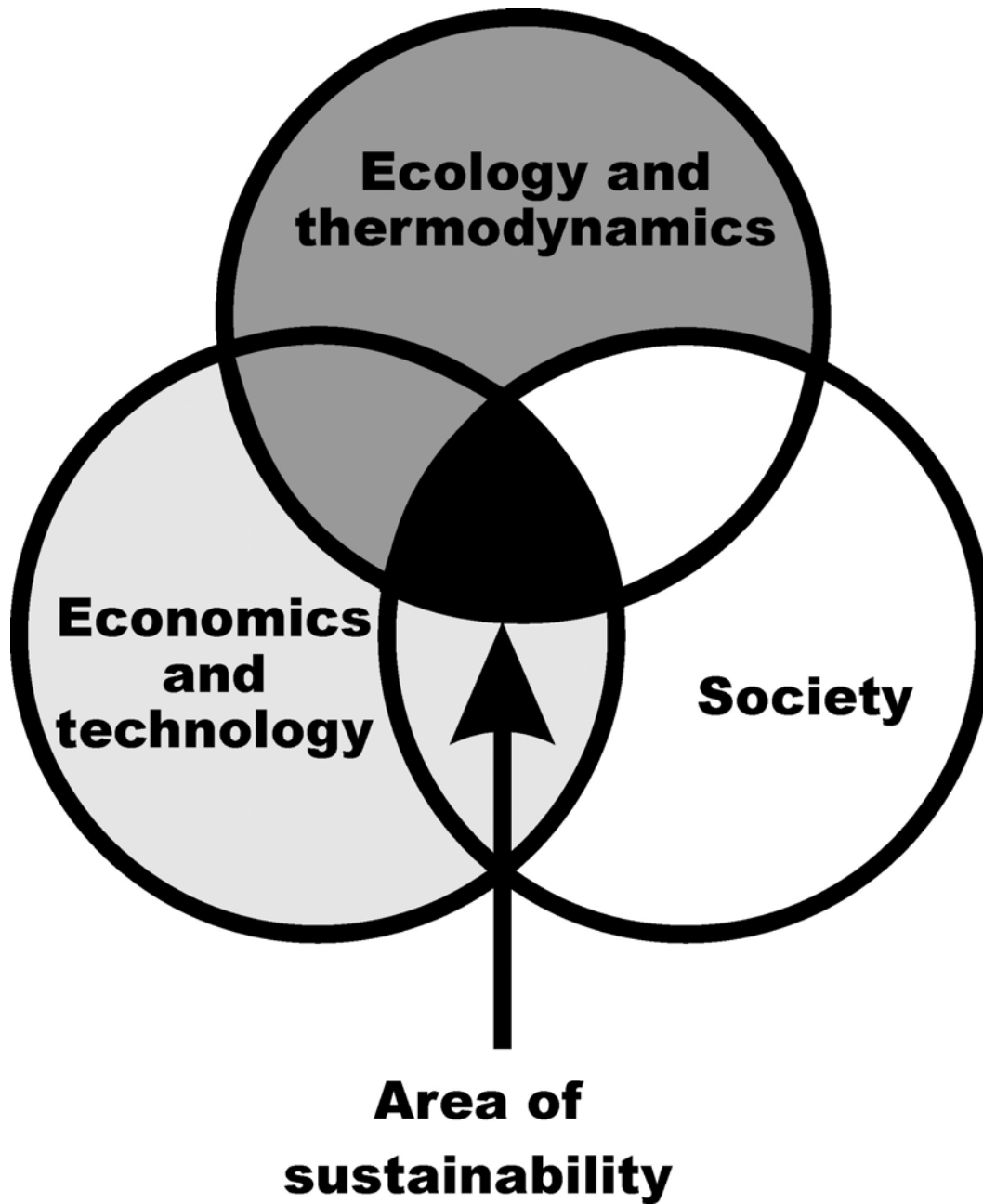
- Meeting the needs of the present without compromising the ability of future generations to meet their own needs [Brundtland Report (1987)]

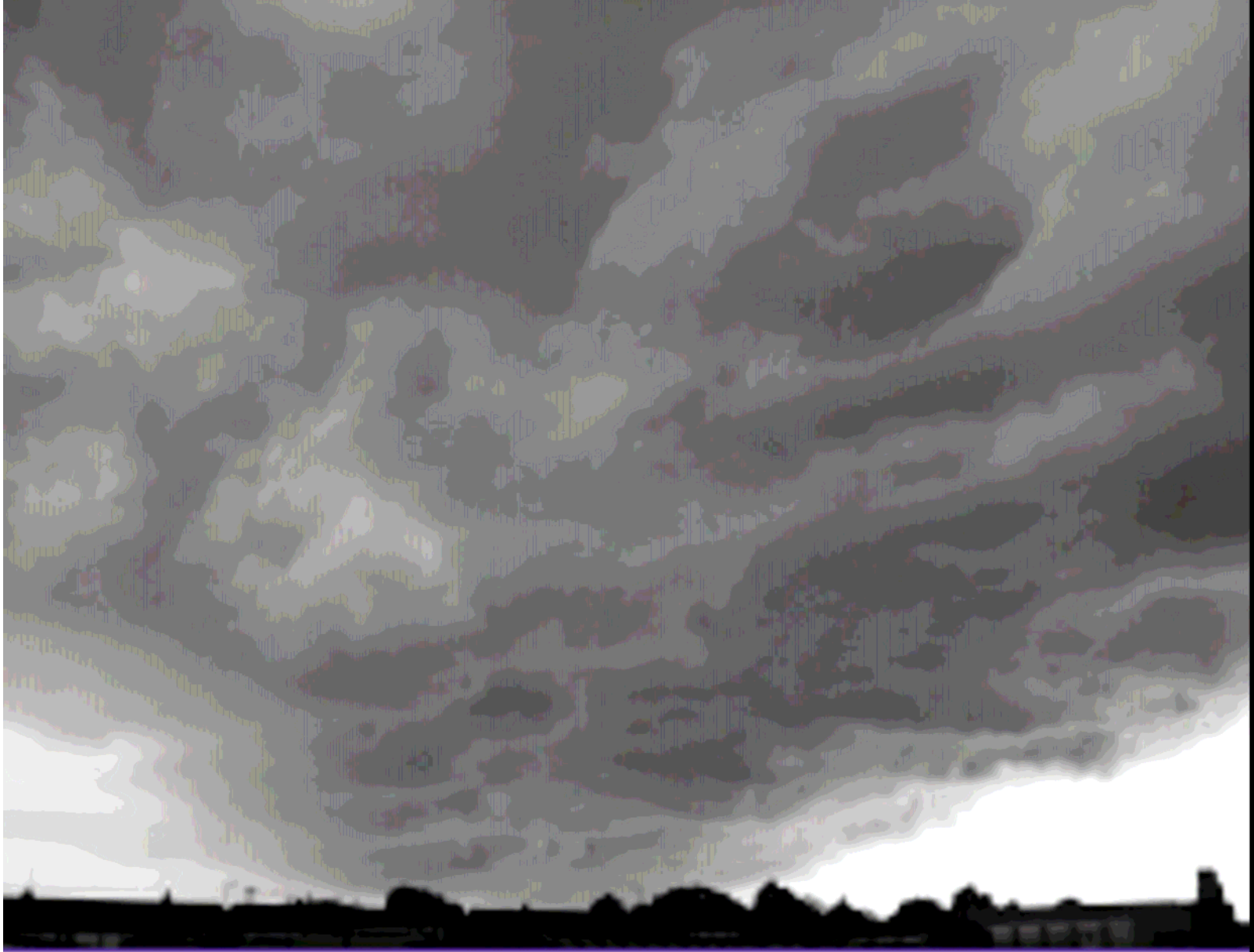
- Sustainable Development versus ‘Sustainability’

↓
Process or journey

↓
destination

After Jonathan Porritt (2000)





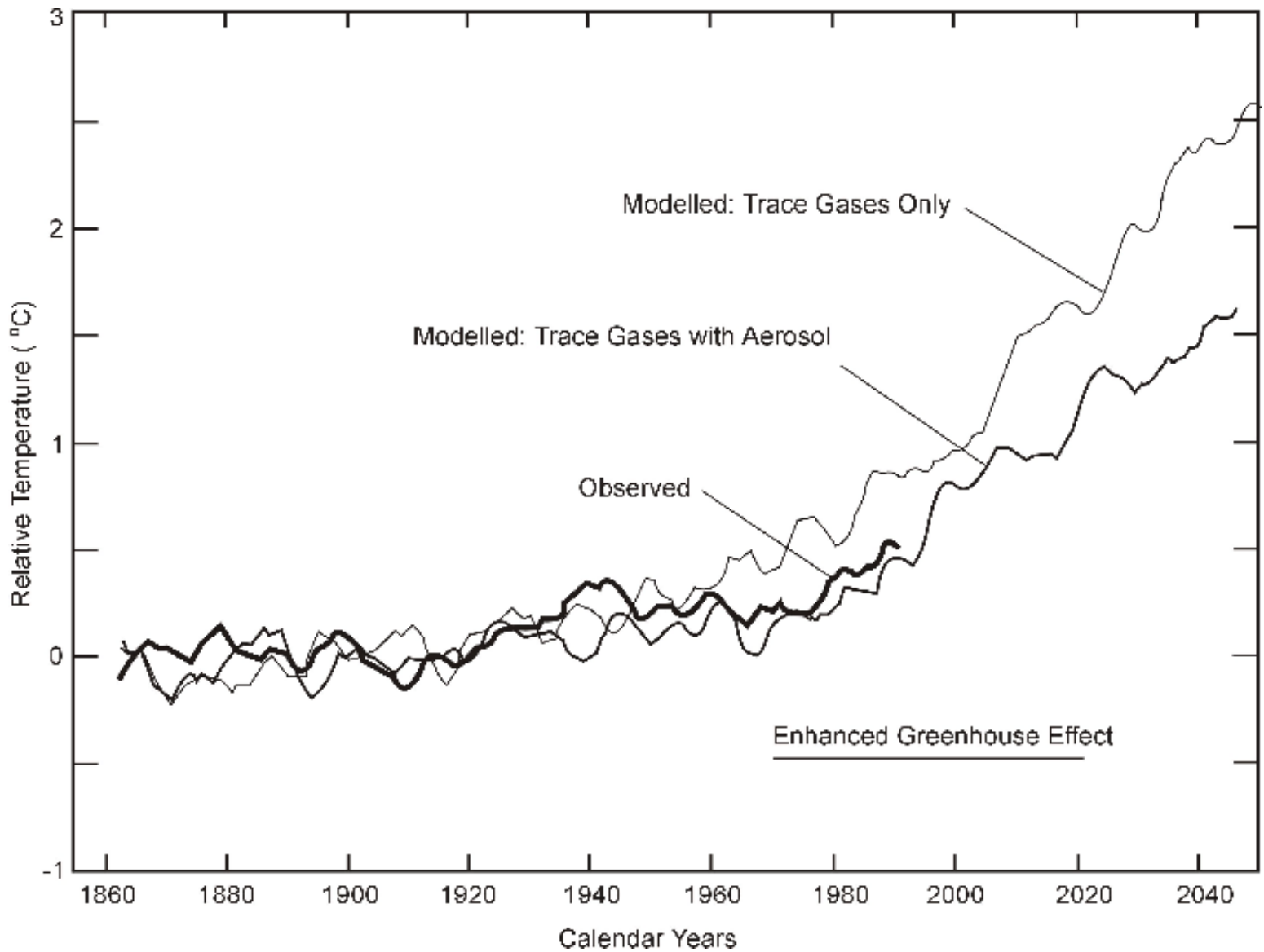
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THE ENVIRONMENTAL IMPERATIVE

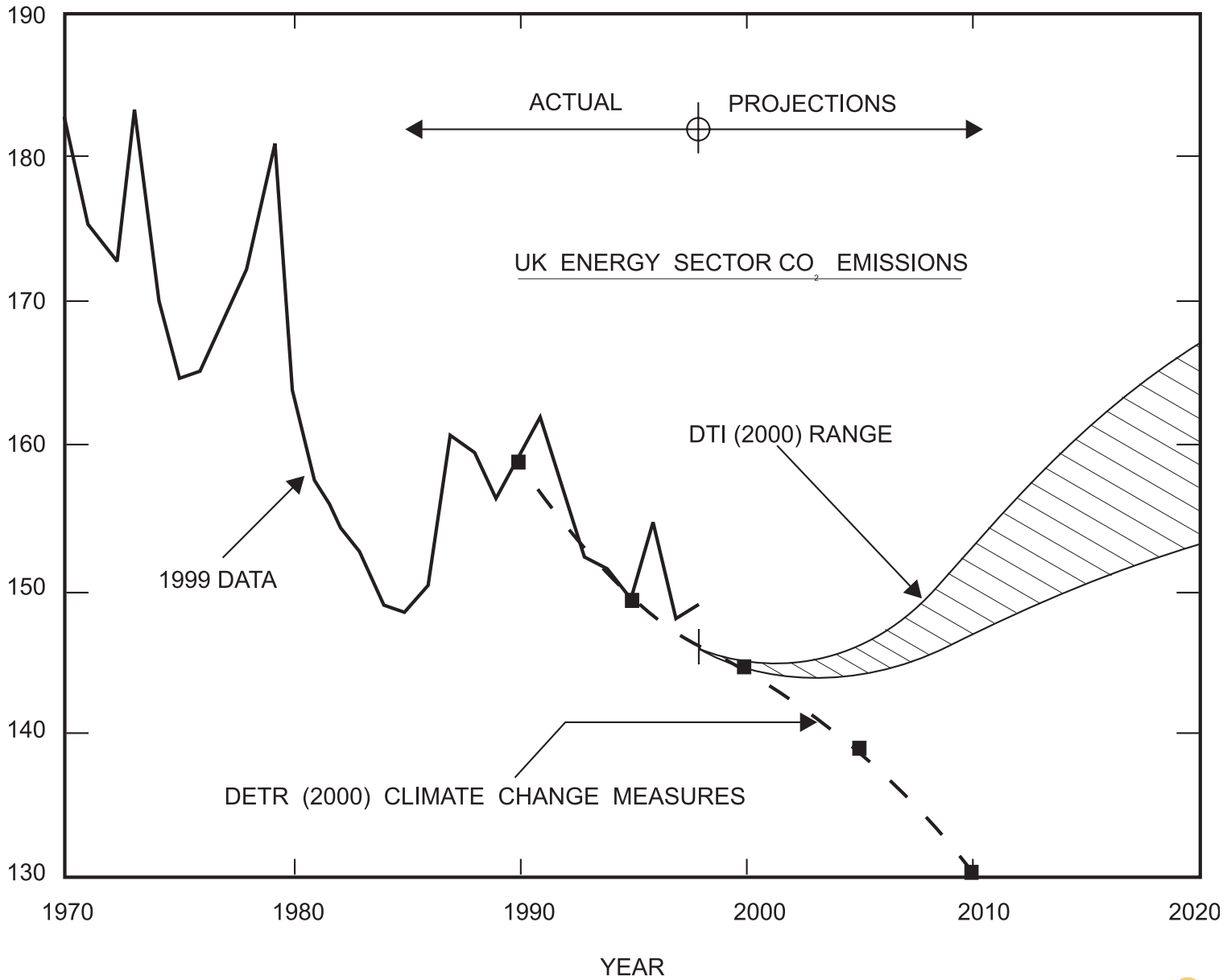
GREENHOUSE GAS EMISSIONS → GLOBAL WARMING → CLIMATE CHANGE

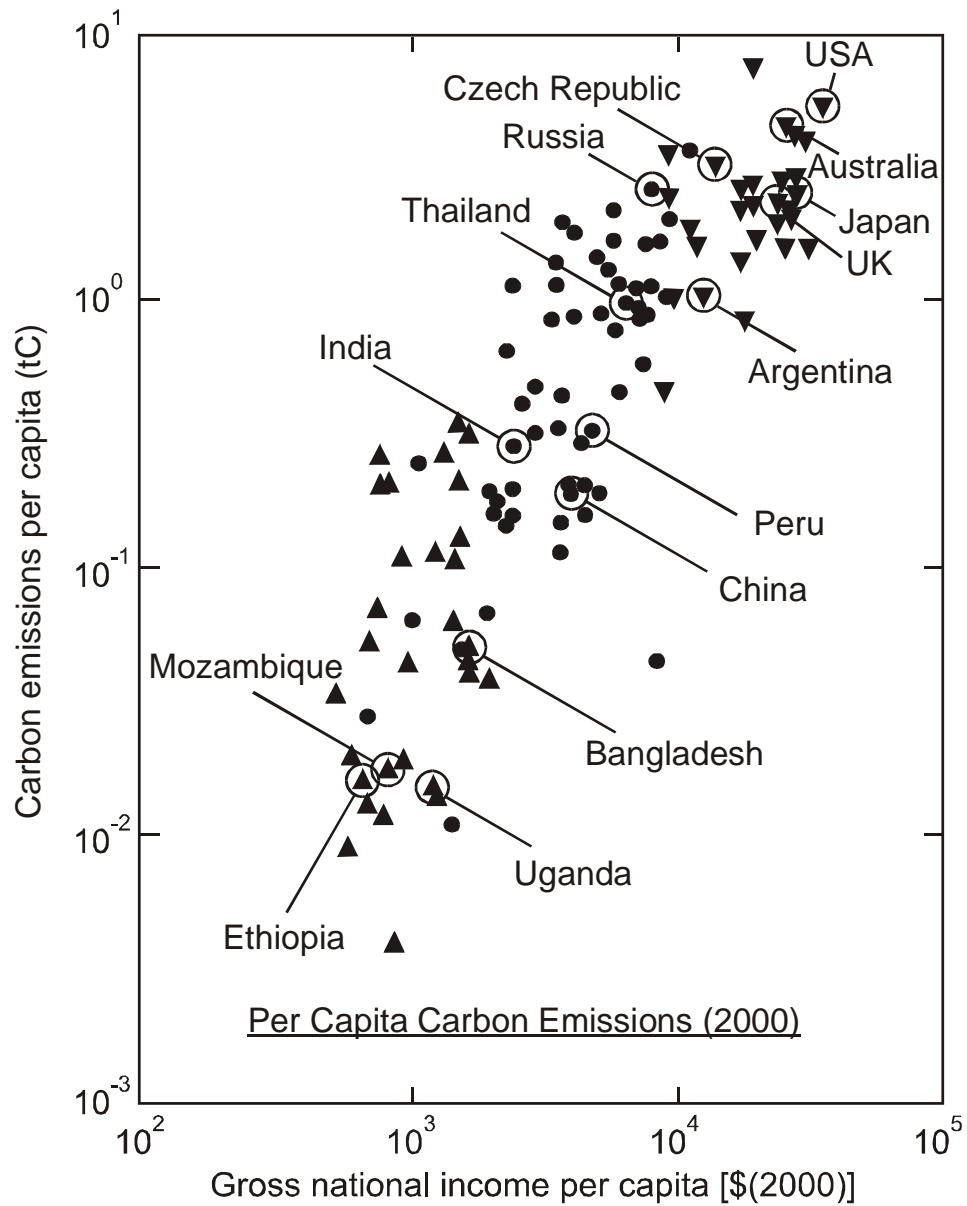
NB: Scientific uncertainties persist

- POLLUTANT EMISSIONS FROM THE ENERGY SECTOR –
 - Global warming: greenhouse gases
 - carbon dioxide (CO₂): around 95% from the UK energy sector
 - nitrous oxides (NO_x)
 - water vapour (H₂O)
 - Global/regional cooling
 - dust particulates; condensation nuclei
 - sulphate aerosols
 - Regional acid rain precursors:
 - nitrous oxides (NO_x)
 - sulphur dioxide (SO₂)



MtC





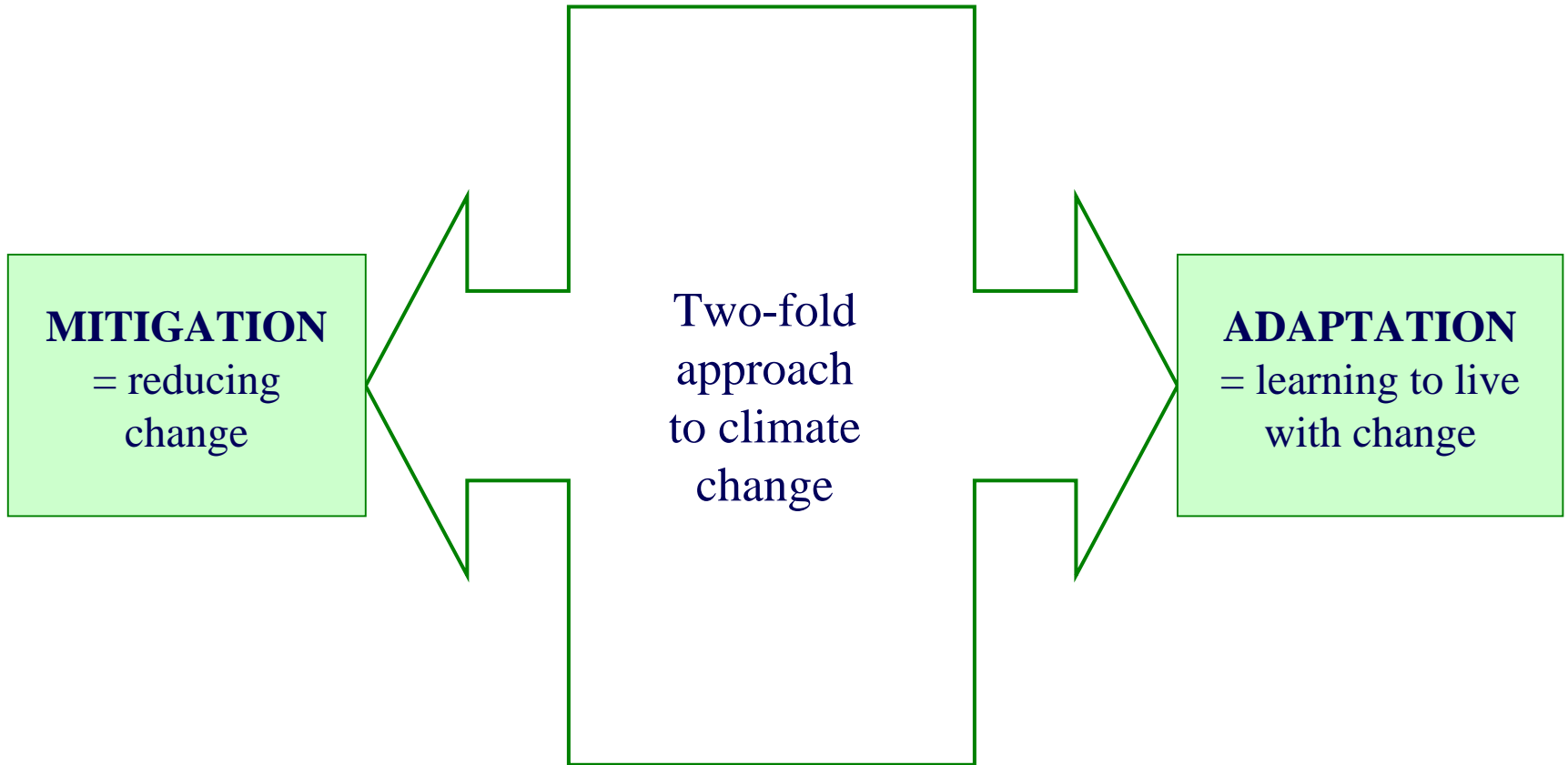
THE ROLE OF THE ACTION PLAN

- In April 2004 the Swindon Strategic Partnership (SSP) launched its Community Strategy for Swindon for the period 2004-2010: “*Our Swindon, Our Community, Our Future*”. One of the six main themes of that strategy was an aspiration to make the Borough a place that values its environment.
- Key to meeting that challenge was the development of a *Climate Change Action Plan*. The document being launched today is therefore the first step along a pathway that will lead to Swindon becoming climate responsive.
- Global warming is an international issue. But we all have a role to play in mitigating and adapting to its effects – ***a whole community approach.***

THE AGREED AIMS OF THE ACTION PLAN

1. To reduce Swindon's contribution to climate change (mitigation)
2. To prepare Swindon for a changing climate (adaptation)
3. To ensure that Swindon Borough develops in a sustainable way

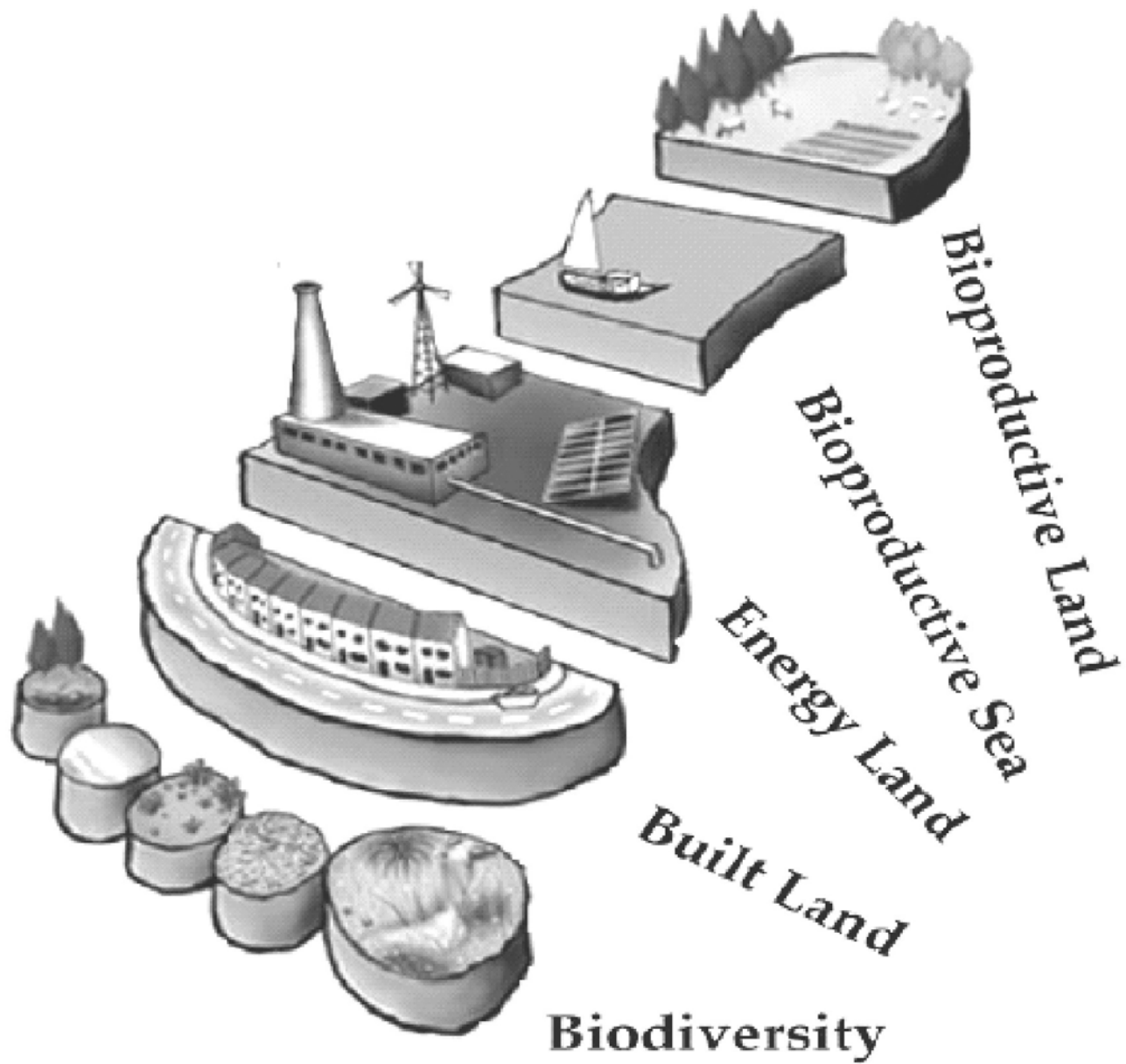
There is much to be done!



CLIMATE CHANGE ACTION AREAS FOR SWINDON

The following areas have been chosen for priority action as a result of the input and feedback from those who attended the Climate Change Workshop in September 2005:-

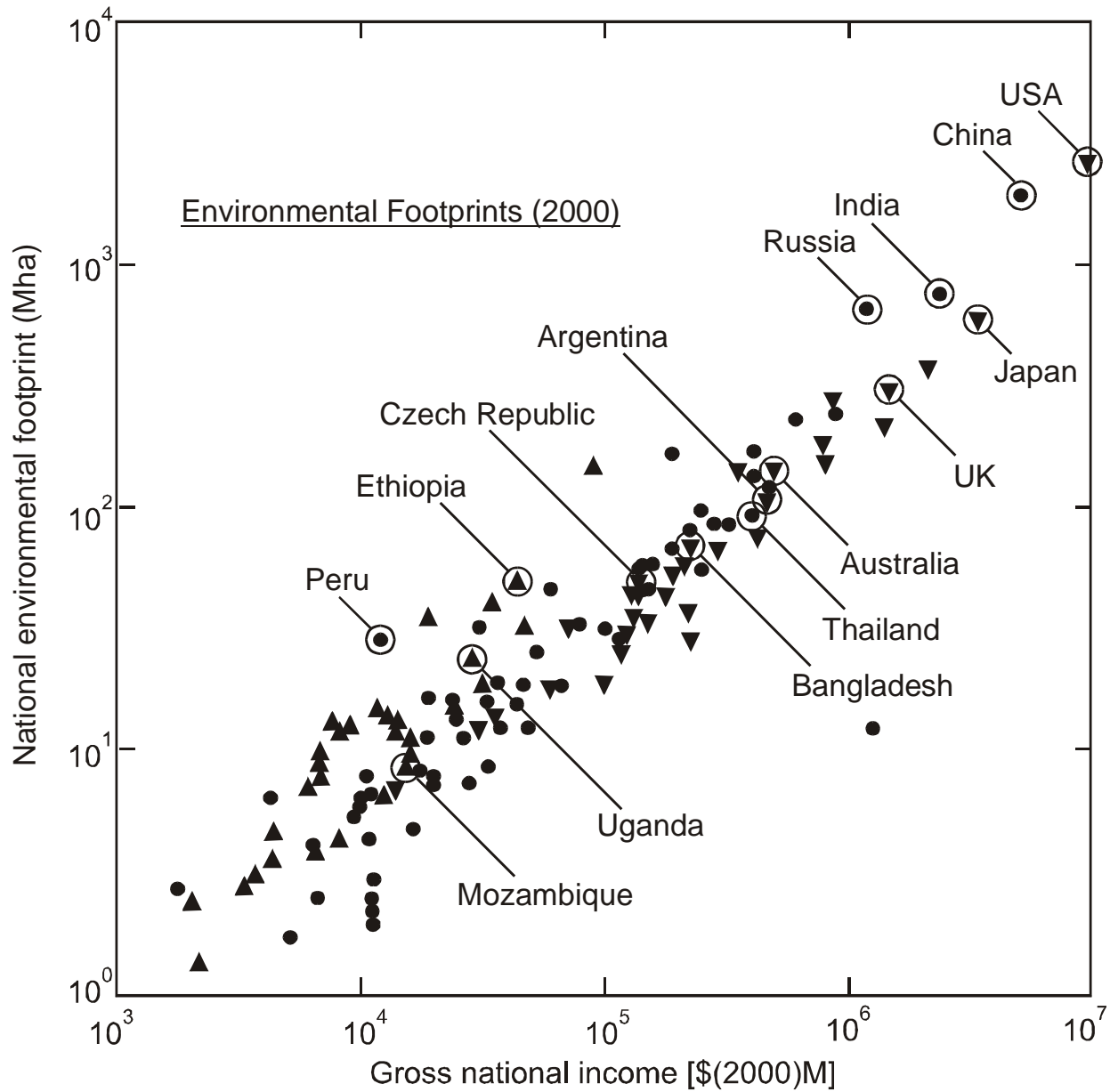
1. Awareness-raising
2. Planning and Development
3. Energy
4. Transport
5. Waste
6. Water
7. Biodiversity and Natural Environment
8. Food
9. Health
10. Pulling It All Together

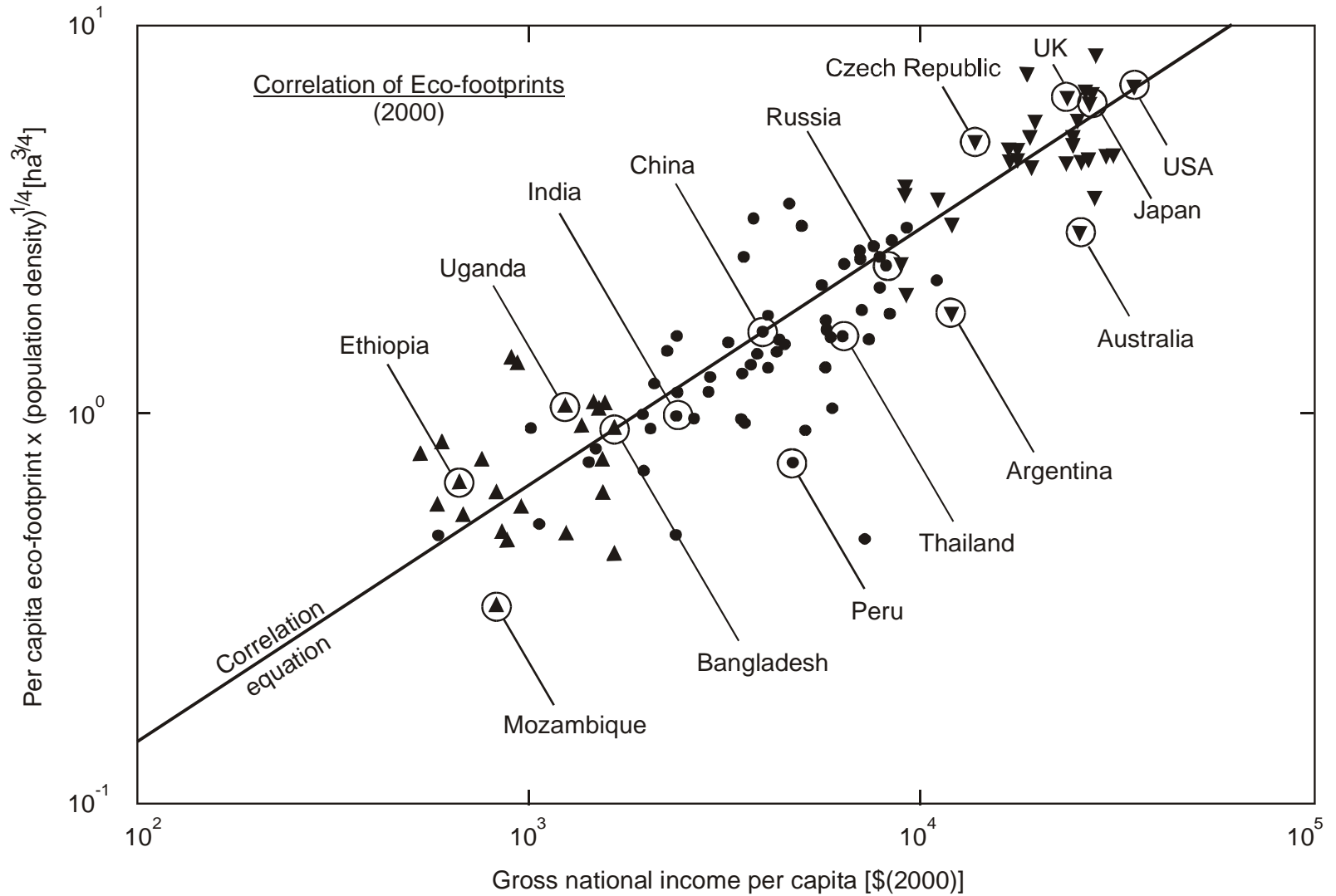


THE ENVIRONMENTAL FOOTPRINTS OF NATIONS

- Environmental footprints represent a partial measure of the extent to which the planet, its regions, or nations are moving along a sustainable development pathway
- Such area-based indicators vary between countries at different stages of economic development and varying geographic characteristics
- The relative significance of population density, economic wealth, and pollutant emission intensity has been determined (from WWF other other international statistics)
- This indicates which individual nations are currently frugal or profligate in terms of their resource use and environmental impacts

Source: Hammond (2006)





RECENT STUDY: THE ENVIRONMENTAL FOOTPRINT OF SWINDON

- Swindon – mainly urban

Study boundary: the unitary authority of the Borough of Swindon

- Footprint and related characteristics -

- ❖ Land area – 1.024 million ha.
- ❖ Environmental footprint - 5.65 gha per Swindon resident.
- ❖ Overshoot of biocapacity – a little over 10 : 1
- ❖ If the world's population reflected this consumption, then we would need the equivalent biocapacity of 2.0 extra Earths to satisfy it!

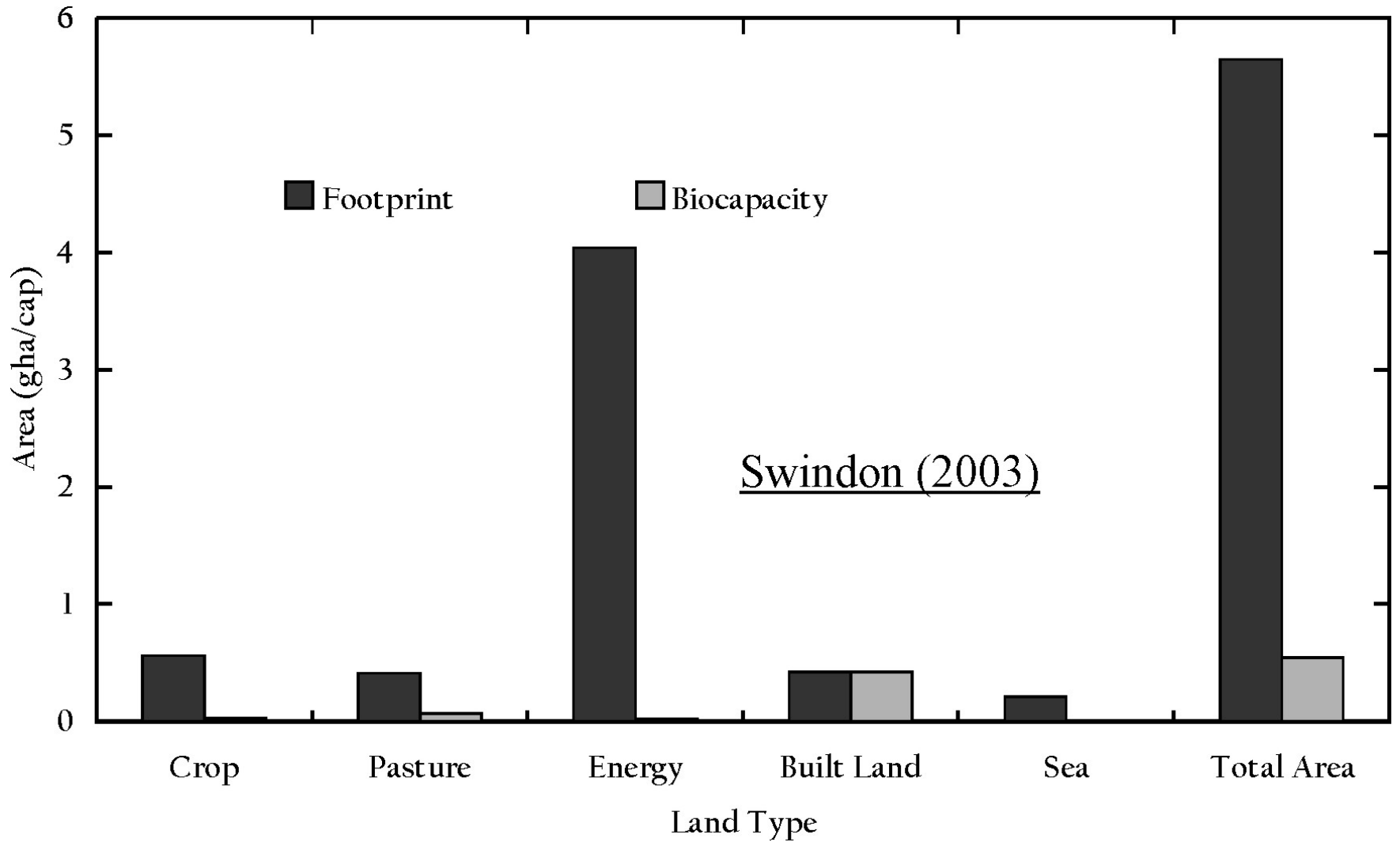


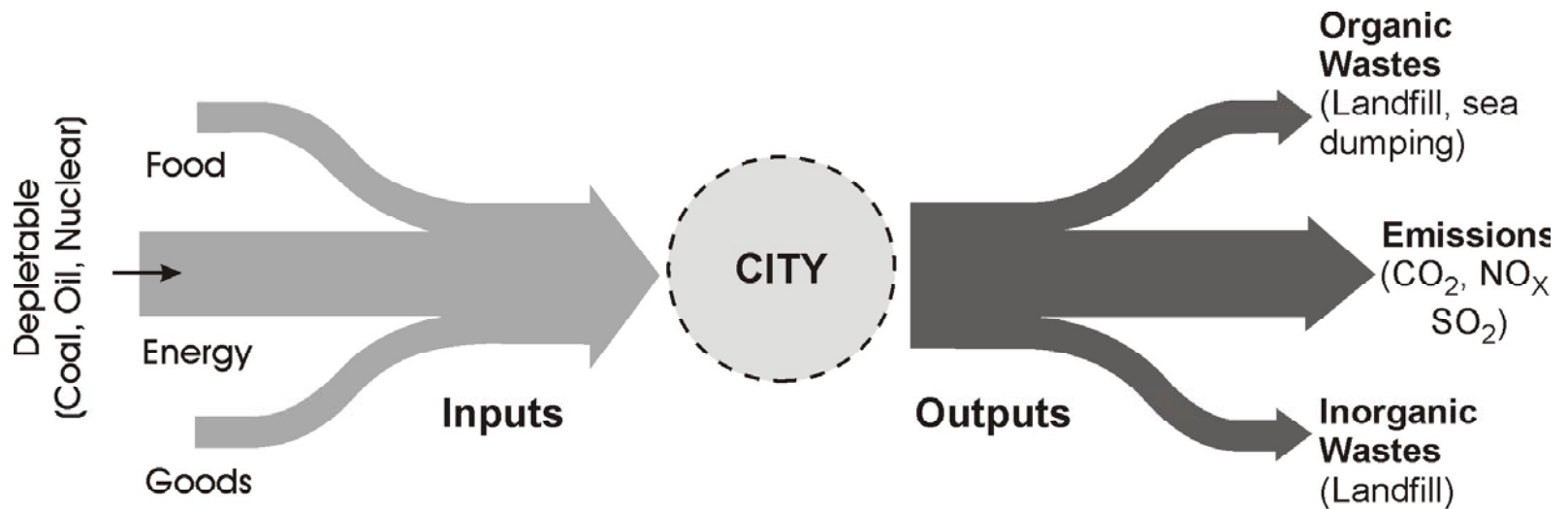
- Study year (data): 2003

Source: Eaton, Hammond & Laurie (2006)

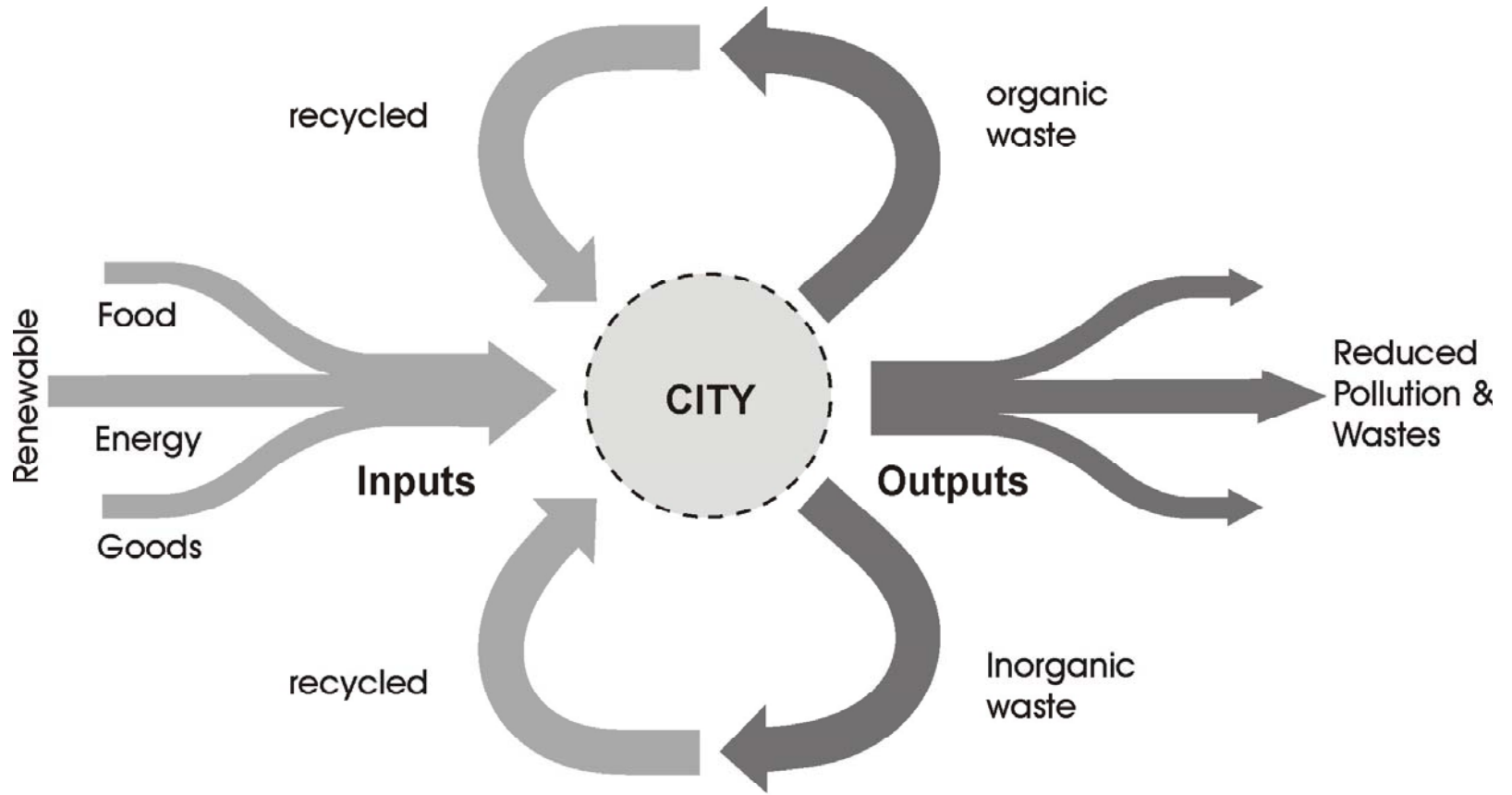


Swindon





(a) ' **Linear** metabolism' cities (consume and pollute at a high rate)



(b) '**Circular** metabolism' cities (minimise new inputs and maximise recycling)

THE CLIMATE CHANGE / ENERGY HIERARCHY

1. Encourage sustainable lifestyles

2. Use less energy
3. Use renewable energy to provide energy services
4. Supply energy efficiently e.g., use combined heat and power (CHP) and community heating

5. Offset residual carbon dioxide emissions that cannot be avoided by other means

ENERGY EFFICIENCY OPTIONS

- **BUILDINGS:** Domestic, commercial, institutional and industrial

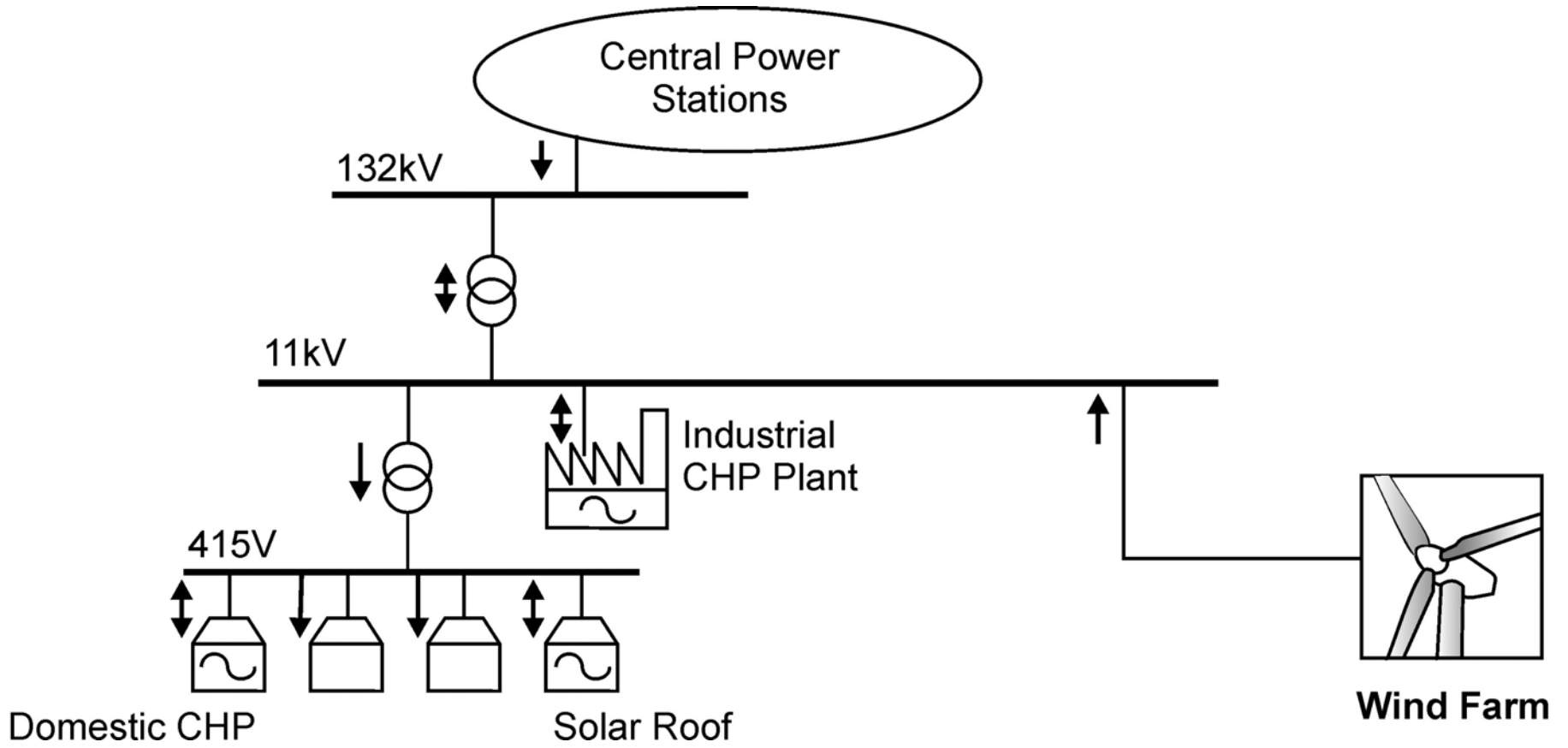
- ⇒ improved thermal insulation
- ⇒ condensing boilers
- ⇒ automatic heating controls
- ⇒ high efficiency and long-life lighting systems

- **INDUSTRY:**

- ⇒ improved combustion processes
- ⇒ dematerialisation and the use of innovative materials
- ⇒ process optimisation
- ⇒ better process monitoring and control

- **TRANSPORT:**

- ⇒ improved efficiency of internal combustion engines
- ⇒ novel powertrains (electric & hybrid vehicles, H₂ or fuel cells)
- ⇒ integrated transport strategies (including walking, cycling and public transport)



WHAT IS MICRO-GENERATION?

Electricity
generation



Micro-wind (Proven)



Solar PV

Heat
generation



Solar thermal



Heat pumps (HeatKing):
air & ground source

Combined heat and power



(Microgen)

Micro-CHP:
Internal combustion
Stirling
Fuel cell

CONCLUDING REMARKS: Tackling Climate Change Together

- Climate change is not just an environmental problem. It is a cross-cutting issue that will affect us all economically and socially, as well as in terms of a warming climate.
- There is clearly a need for urgent precautionary action. It is vital to act now to begin addressing this global problem at a community level.
- Progress with this Action Plan will need to be monitored and its targets revised in the light of the international negotiations.
- The Steering Group has been tasked by the SSP with assessing progress and revising the Action Plan for the next stage; post-2010.
- No doubt that will require even more demanding changes in lifestyles later in the century.

LASTLY: SOME THANKS

- Members of the *Climate Change Action Plan* Steering Group –
 - * Ruth Baker, Wiltshire Wildlife Trust
 - * Tom Charnock, Wilts Association of Local Councils (Swindon Area)
 - * Dr Helen Clayton, Natural Environment Research Council
 - * Jon Madge, Swindon Borough Council (SBC Forward Planning Team)
 - * Janet Maxwell, Swindon Primary Care Trust
 - * Dr Rosemary Power, Faith Representative, SSP (currently Acting Chair)
 - * Dr Gesa Reiss, Great Western Community Forest
 - * Adam Twine, Westmill Wind Farm
- First Chair of the SSP – Mike Bell
- SBC ‘champions’ – Andrew Bennett , David Wren, and Celia Carrington
- Forum for the Future (Jenny Barker and Jessica Gomez-Duran)
- And especially ... Lynn Forrester, SBC Policy Unit



**“DON'T TAKE ANYTHING BUT PHOTOGRAPHS,
DON'T LEAVE ANYTHING BUT FOOTPRINTS”**

Signpost seen by the speaker,
Sinharaja Rainforest Reserve,
Sri Lanka (June 2001)