

# *Climate Change Workshop*

4 March 2010

- Welcome
- Some complexity principles
- Psychology: the missing dimension
- Introductions
- Setting the agenda & open space
- Small group discussion
- Report Back and Next Steps

## Theories

### *Natural sciences*

Dissipative structures  
chemistry-physics (Prigogine)

Autocatalytic sets  
evolutionary biology (Kauffman)

Autopoiesis (self-generation)  
biology/cognition (Maturana)

Chaos theory

### *Social sciences*

Increasing returns  
economics (B. Arthur)

*Generic  
characteristics  
of complex  
co-evolving  
systems*

**self-organisation**

**emergence**  
**connectivity**  
**interdependence**  
**feedback**

**far from equilibrium**

**space of possibilities**

**co-evolution**

**historicity & time**

**path-dependence**

**creation of new order**

# *A Complexity Perspective*

- Need to use complexity to understand
  - the **co-evolutionary** processes at a geo-systemic level
  - multiple dimensions
  - phase transition
  - the **role of governments** in addressing CC
  - the **global-local** dynamic at multiple scales
    - e.g. following a global framework which encourages local exploration of the space of possibilities and self-organisation
- It is a dual & simultaneous **top-down and bottom-up processes**



The image features a Venn diagram with three overlapping circles set against a background of the Earth from space. The top-left circle is brown with a fine grid pattern and is labeled 'GEO SPHERE'. The top-right circle is light blue with a fine grid pattern and is labeled 'BIO SPHERE'. The bottom circle is a darker blue with a fine grid pattern and is labeled 'ANTHROPO- SPHERE'. The circles overlap in the center, and the Earth's blue oceans and white clouds are visible through the gaps between them.

**GEO  
SPHERE**

**BIO  
SPHERE**

**ANTHROPO-  
SPHERE**

# *A Complexity Perspective*

- Government/s' role:
  - creating **enabling environments** that facilitate local change
  - longer term vision
  - support research (e.g. on the long-term impact of current adaptation to CC; deep sea turbines)
  - provide necessary infrastructure (e.g. electric cars, feed-in tariffs)
- Local:
  - national Governments
  - local Authorities
  - communities
  - individuals