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Climate Policy Strategies and Energy Transition

Is Climate Policy Complex?

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Sources:

Beyond Kyoto, plan B: A climate policy master plan based on transparent metrics. *Ecological Economics* 68 (2009) 2930-37
Preparing the design of robust climate policy architectures. *Int. Environmental Agreements: Politics, Law and Economics* 11 (2011) 275-95
Revocability and reversibility in societal decision-making. *Ecological Economics 85* (2013) 20-27

Overview

1. Complexity: hype or help?
2. Climate policy ⌘ Climate change
3. Dissolve complexity in climate policy
4. Practical tools
5. Suggestions

1. Complexity: hype or help?

Every decade, a C-hype [*Steven Strogatz*]

1960s Cybernetics; 1970s Catastrophe; 1980s Chaos; 1990s Complexity; 2000s Consilience

Complex systems: axiomatic definition by common properties [*Thomas Homer-Dixon*]:

- **Many components with high degree of connectivity**
- **Thermodynamic boundaries largely arbitrary**
- **Highly dependent on inflow of information, matter, energy**
- **Non-linear behaviour ≈ effect disproportional to cause**
- **Emergence: system exhibits novel properties surprisingly, not observable from system's individual components**

Ultimate sources of complexity [*Brian Arthur*]:

- **Growth in co-evolutionary diversity of systems**
- **Structural deepening of system components (➔ experts)**
- **Capturing governing grammar of subsystems**

1. Complexity: hype or help?

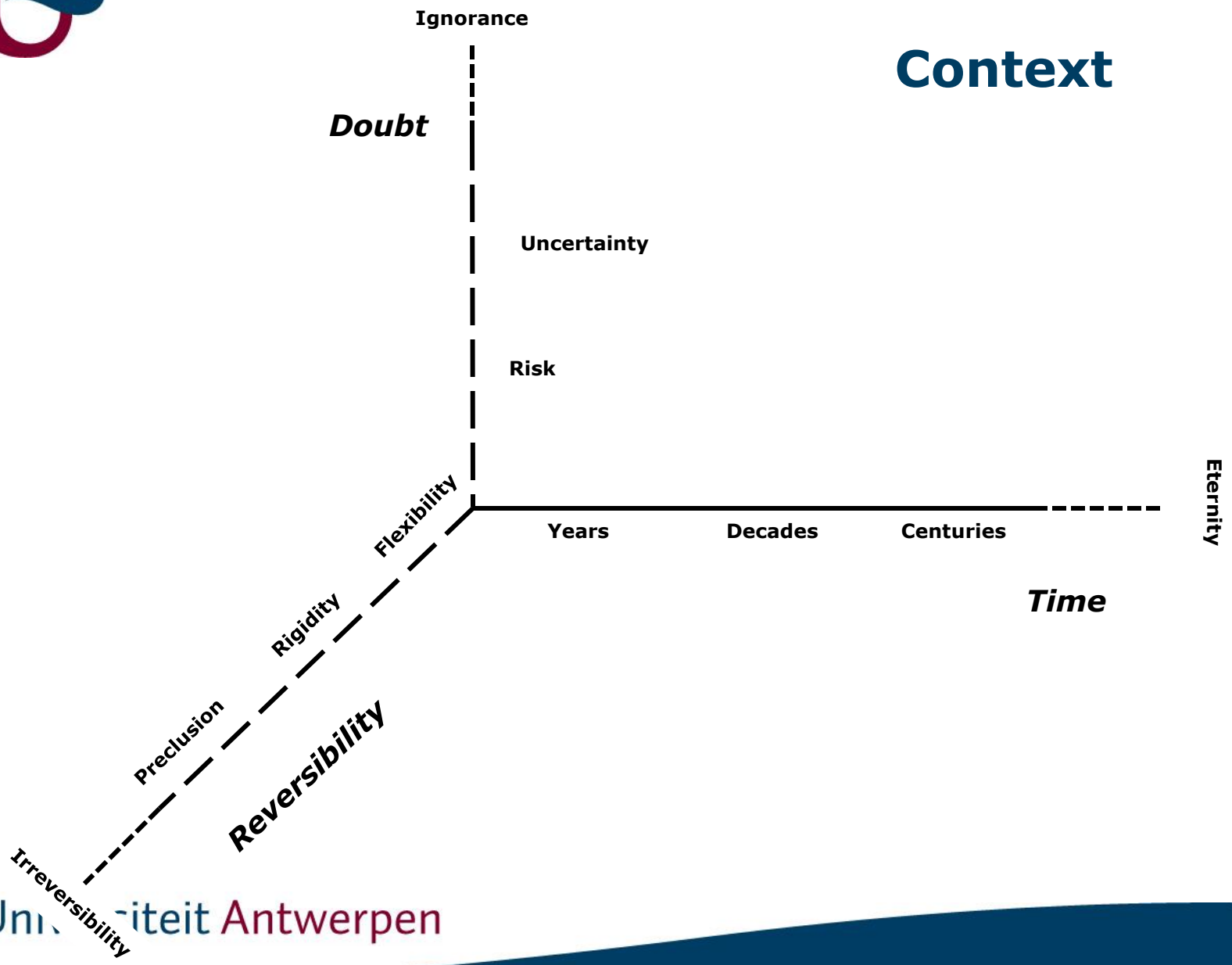
Source of inspiration, but dangers:

- **Confusion**
  - **Wide-ranging holistic thinning**
  - **Unclear vocabulary: diversity, reversibility, potential, resilience, … changing meanings by field (natural/technical/societal), by actors, by case**
- **Inactivity by helplessness: Where to begin? How to cover?**

Reduce confusion:

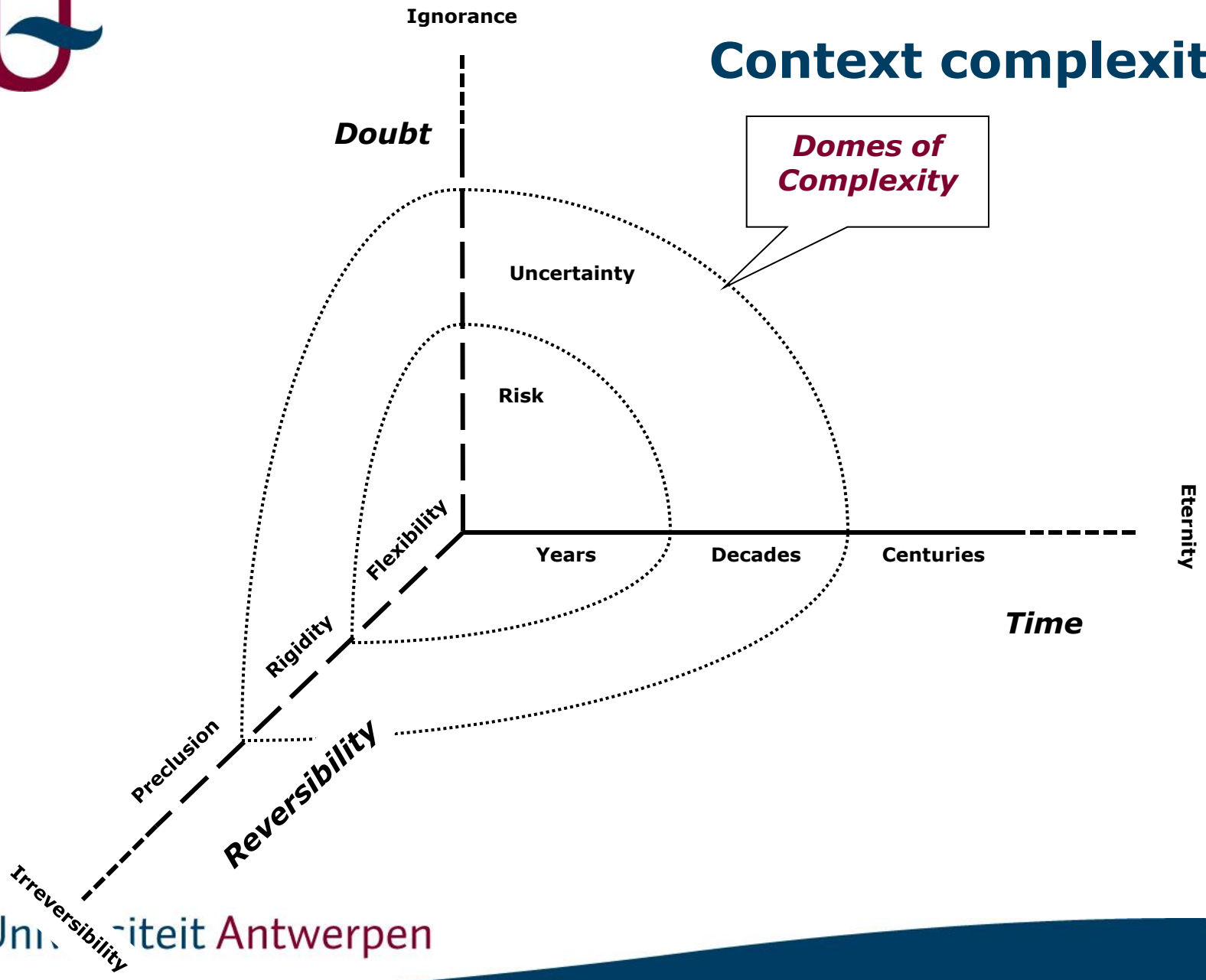
- **Distinguish better societies and economies from ecological and technical systems**
- **Delineate systems complexity (some control) from context complexity (beyond control)**
- **Clarify, specify concepts, glossary**
- **Complicated ≠ complex**

2. Climate policy ⌘ Climate change



2. Climate policy ⌘ Climate change

Context complexity



3. Dissolve complexity in climate policy

Climate *policy* is wicked, complicated, contentious, … but of low complexity if managed by

1) Problem decomposition

- **Mitigation: by GHG source: energy-related, land use, industrial gases; by societal-economic sector; by region; by emitting activities & related actors**
- **Adaptation: by hazard, sector, region, exposed people**

2) Time-sequential decision-making

- **yearly rolling baselines**
- **yearly pledges & reviews, e.g. reducing Cpp [CO_2 per person] and controlling main drivers**

3) Political economy of energy interests, power, money

Identify the essence of Climate Policy

1. **Atmosphere is unique: saving is first priority [*UNDP*]**

2. **The ultimate global commons need 'mutual coercion, mutually agreed upon' [*Hardin*] = global public policy**

3. **Excessive use of fossil fuels + atomic power**
   *** root cause of problems = Gordian knot of change**
   *** ban is necessary & sufficient, desirable for SD**

4. **Build distributed, efficient, renewable, sustainable energy systems: responsibility of the rich ⇔ offsets - others will follow /emulate**

5. **Decentralised levies & subsidies: fine-tuned price pressures case by case ⇔ scythe of global uniformity like 'global emissions trading', or 'universal carbon tax'**

3. Dissolve complexity in climate policy

Identify and address major challenges:

1. **Urgency:** deliver by performing institutions, trained & experienced people, proven data, established MRV, …
   No futile experiments (ETS), let the cobbler stick to his last

2. **Global commons:** nested approaches & polycentric governance; respect diversity by proper specificity

3. **Top-down (gothic cathedral) ⇔ Bottom-up (favela):**
   Urban Planning = lightweight common framework & decentralize construction works

4. **Incentivize interests:**
   * boost National Budget Reforms (levies & subsidies)
   * Graduation of countries on GDP/person scale
   * yearly $-transfers from rich to poor based on each measured progress in mastering emission drivers

Construct the solid way

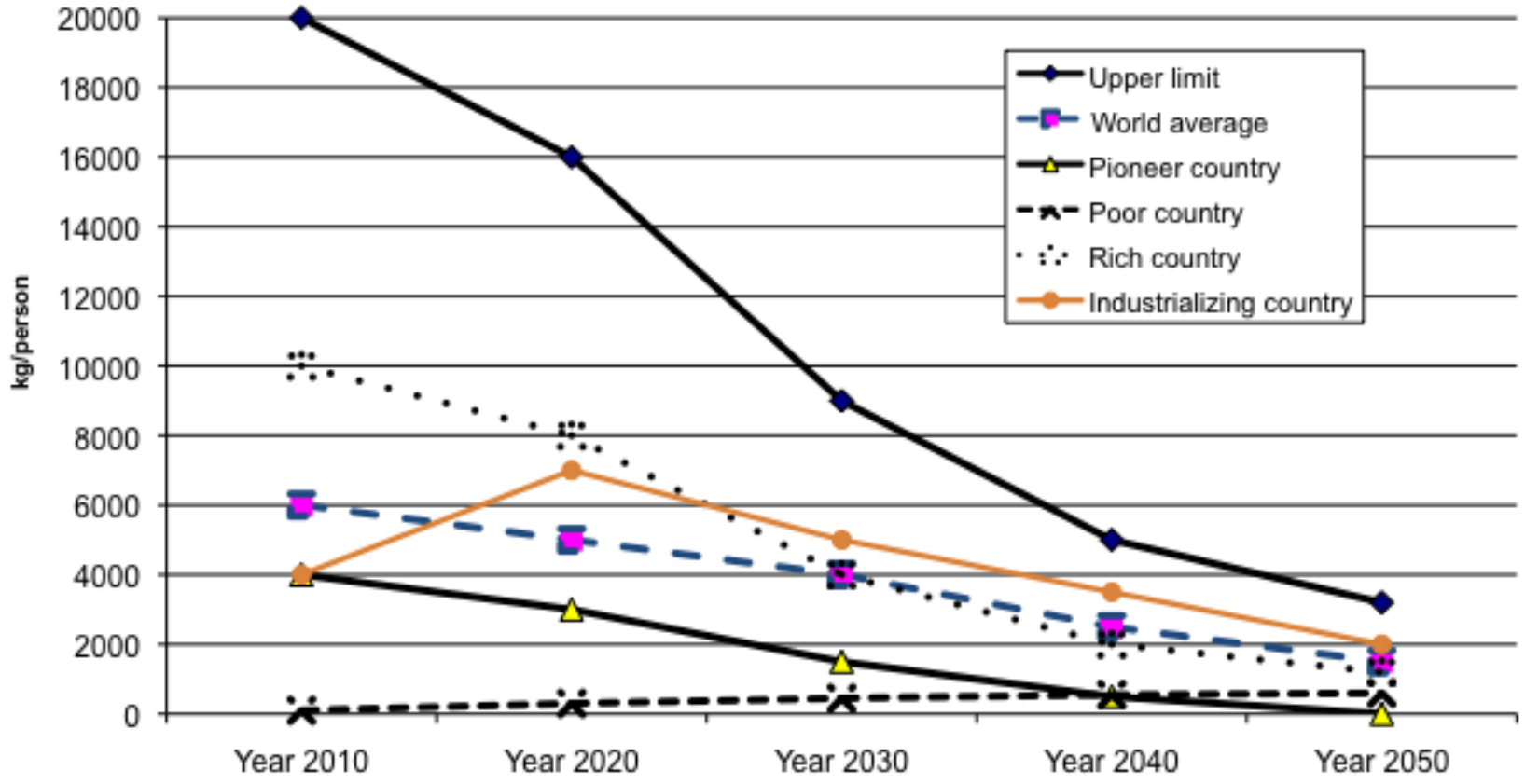
1. **Common Resolve Emulation (⇔ Zero-sum)**
   Team spirit, mutual learning, try to excel

2. **All countries equal at UN-level**
   First agreement among the big emitters + join-ins

3. **Goal directions >>targets; Practices >>projects**
   Contraction & Convergence ceilings 2010-2050

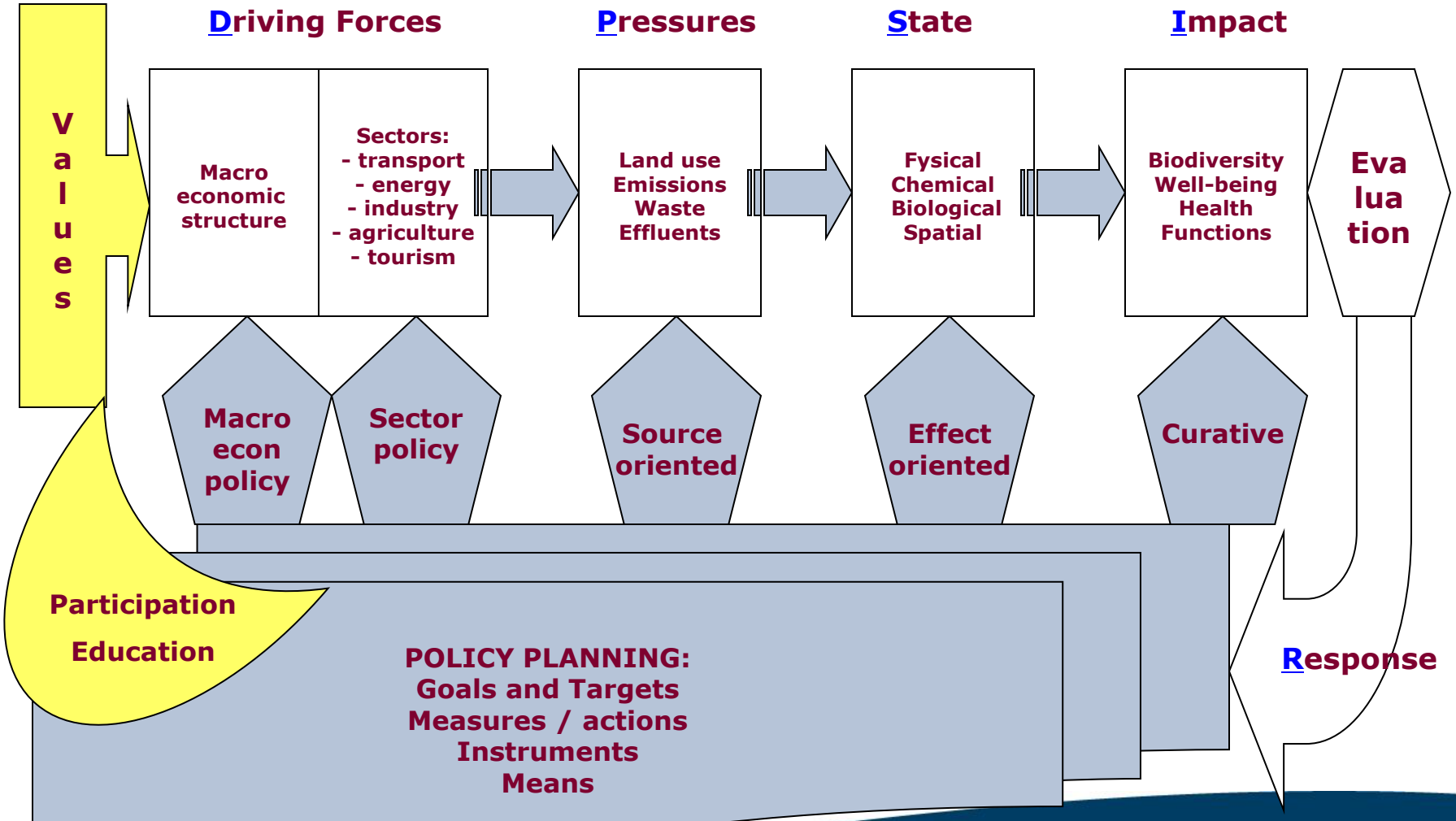
4. **Yearly Progress by country on 3 indicators**
   Reduction of non-sustainable energy intensity
   Increased use of sustainable renewable energy
   Restructure GDP by Budget Reforms

Serious about +2° C = CEILING on all countries' averages emissions/person



DPSI@R framework for scientific analysis

Mitigation – Abatement – Damage - Adaptation



Overhaul COP – save UNFCCC

1. **End Kyoto**
   Distributed renewable energy & low energy intensity as substrates of related societal power and true change

2. **End COP circus, Limit UNFCCC to Climate Issues**
   UNFCCC at fixed seat, e.g. Addis Abeba + Bonn
   Experts in climate, energy, impacts, adaptation, …
   Focus on Parties' home work

3. **Separate UN initiatives on other major issues**
   Refresh debate on population, demography, migration,…
   Technology transfers (property rights; patents)
   ETHICS commission on wealth accumulation, redistribution and equity

Rational Radicalism

- Rational
  - Money makes the world go around
  - Interests are stronger than intentions
  - Build expertise (especially on the bolts & nuts of system components)

- Radicalism (reverse thinking precedes the construction of a sustainable society)
  - Out-of-the-box, contrary to common wisdom
  - Stop lock-in, extrapolation scenario thinking
  - Novel solutions require new guides
  - Prick mirages (ETS, offsets)