



**University of Brussels (ULB)**  
**June 10, 2015**

**COEURE**  
**Economic approaches to Energy,  
Environment and Sustainability**

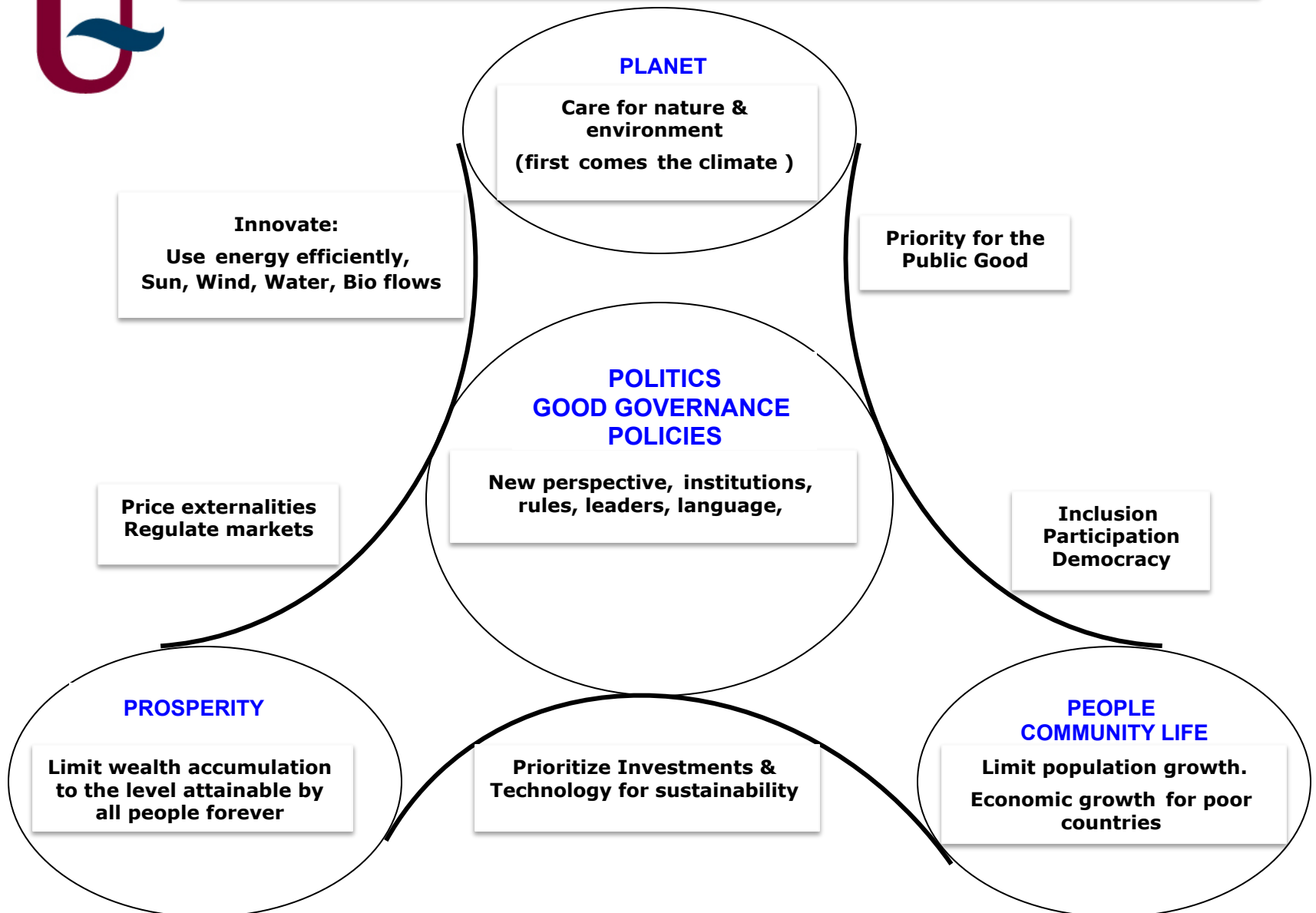
**Referee report:**  
**Disruptive analysis for drastic & urgent transition  
changes**

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- **IPCC Assessment Reports (1990, 1995, 2001, 2007, 2013-14) + Special Report Renewable Energy 2012**
- **Stern (2006): drastic & urgent change  $\Delta$**
- **Earlier  $\Delta$ : WCED (1987) Sustainable Development  
Radical Political Economy program  
iff  
Full contents & message is maintained  
e.g. Politics as center of 4 dimensions**

# Sustainable Development: 4 dimensions (WCED)

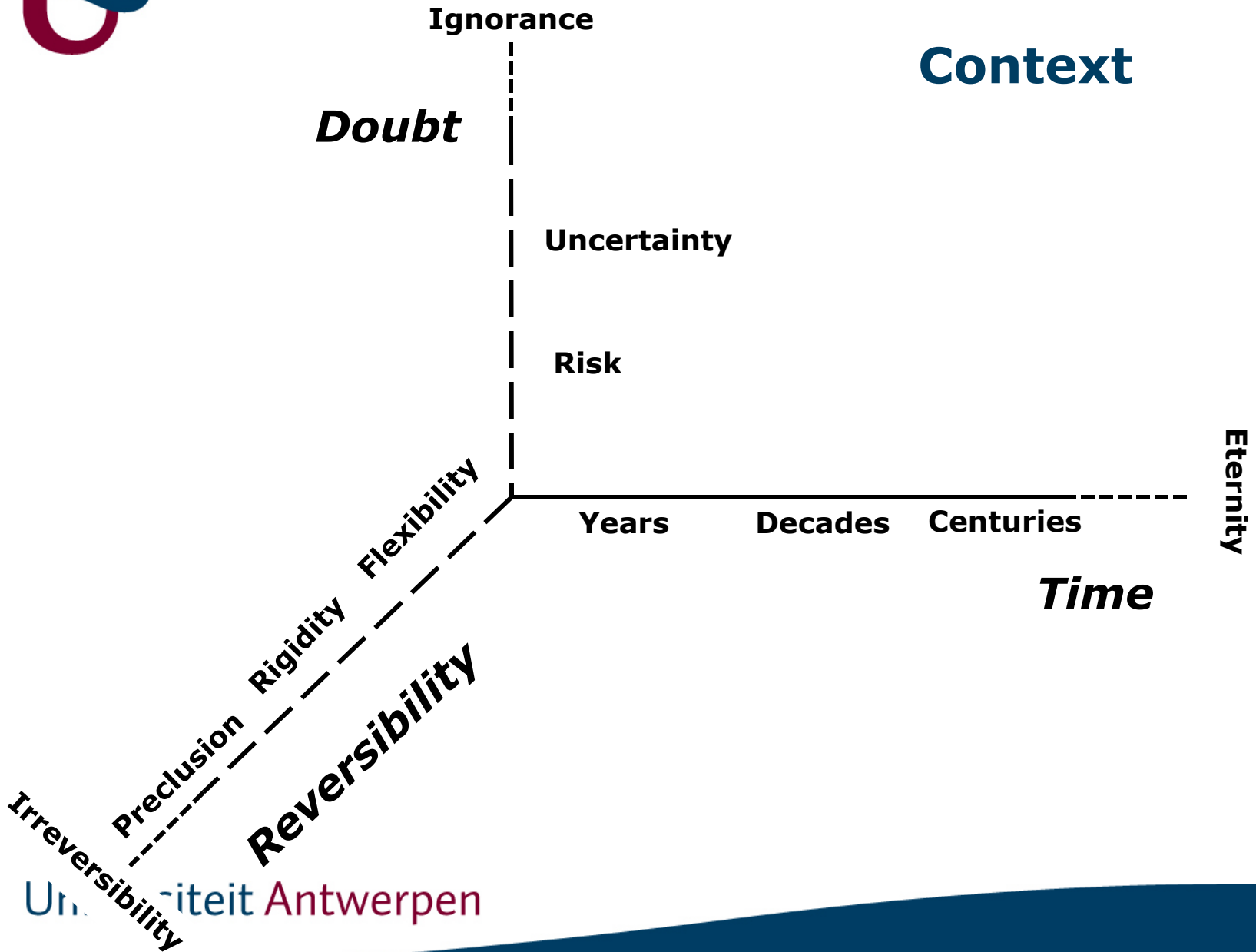




## Environmental-ecological economics Survey paper omits

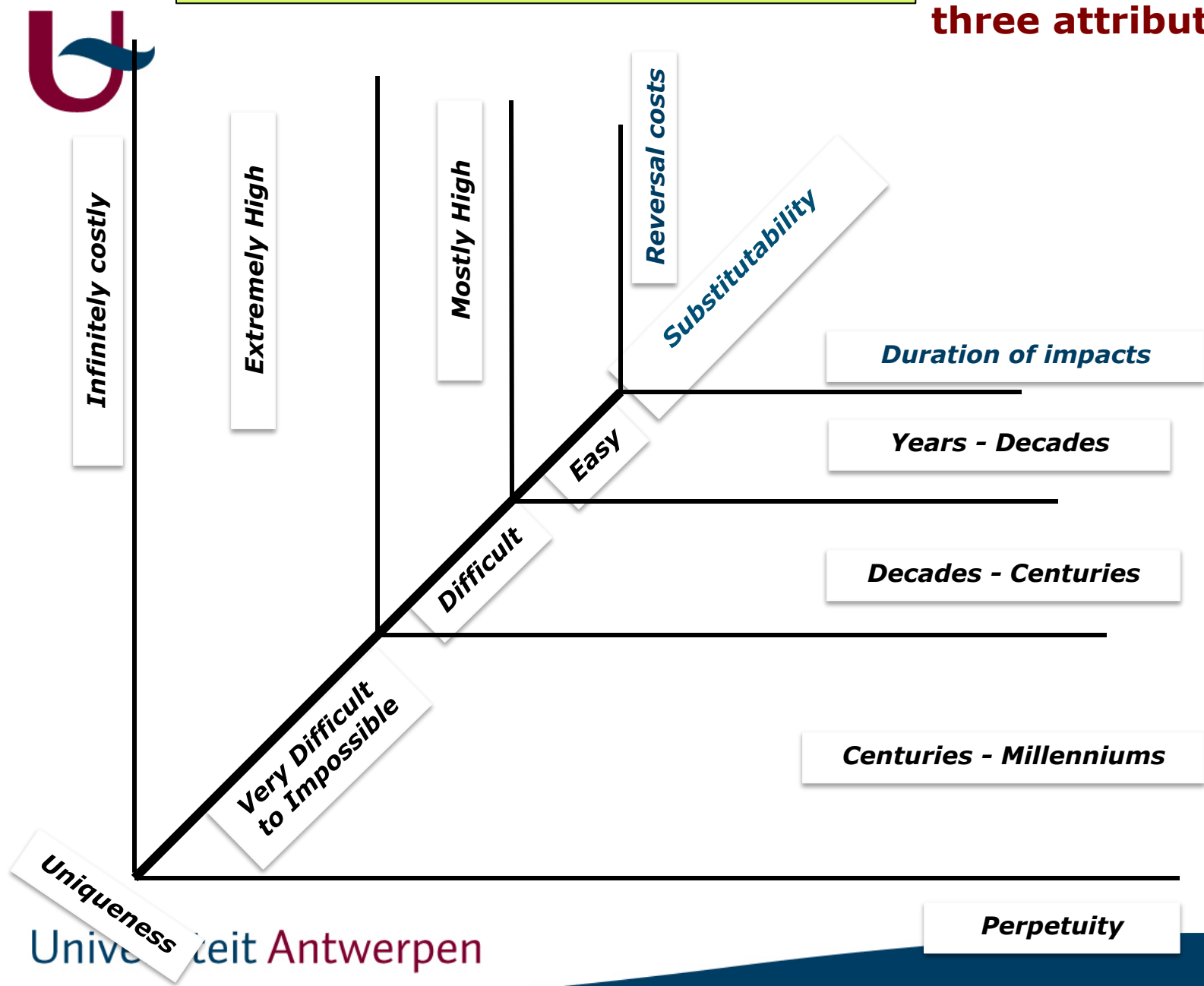
- **Decision-making under uncertainty (1960/70s)**
  - 1960s: Decision Analysis (e.g. Time-sequential reality)
  - 1970s: 'quasi option'
  - 1990s: for mitigation action, economists recommend 'wait & learn' ⇔ 'choose or lose' [due to confusing reversibility and revocability]
- **Decision context** ⇔ **decision components**  
space of: [events, actions, outcomes]
  - Time (nearby to infinity)
  - Doubt (risk, uncertainty, ignorance)
  - **Reversibility** (flexible, rigid, precluded ... irreversible)

# Decision Context



# Reversibility definition

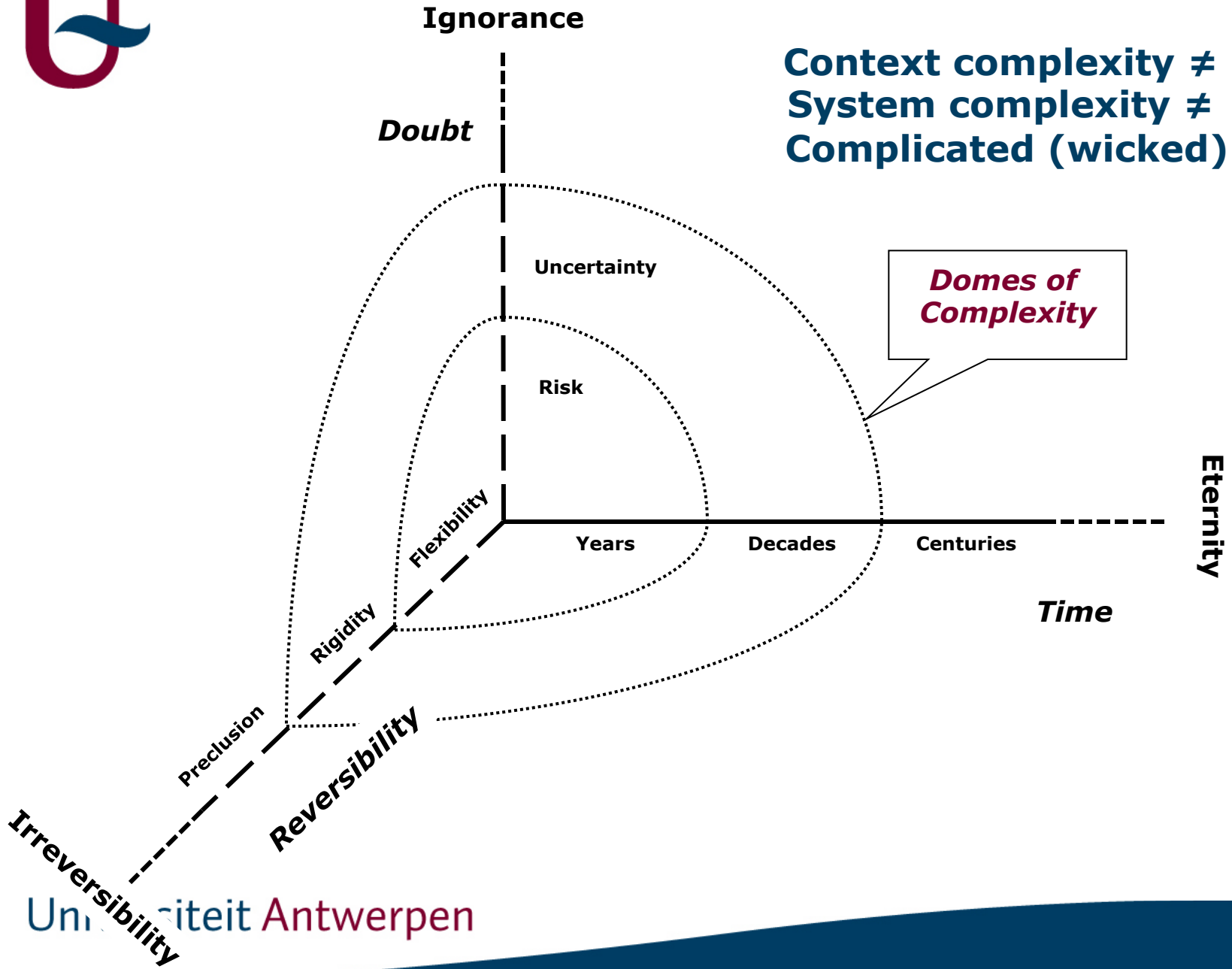
Substantiated by three attributes



# Climate policy ⌘ Context complexity



Context complexity ≠  
System complexity ≠  
Complicated (wicked)





# What kind of policy?

**1. Uniformity Fetish:  
simplistic policy**

**2. Complexity Syndrome:  
clumsy policy**

**3. Rational policies:  
Optimal specificity (diverse)  
Multilevel  
Polycentric**





Climate *policy* is complicated, contentious, ...  
not complex 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

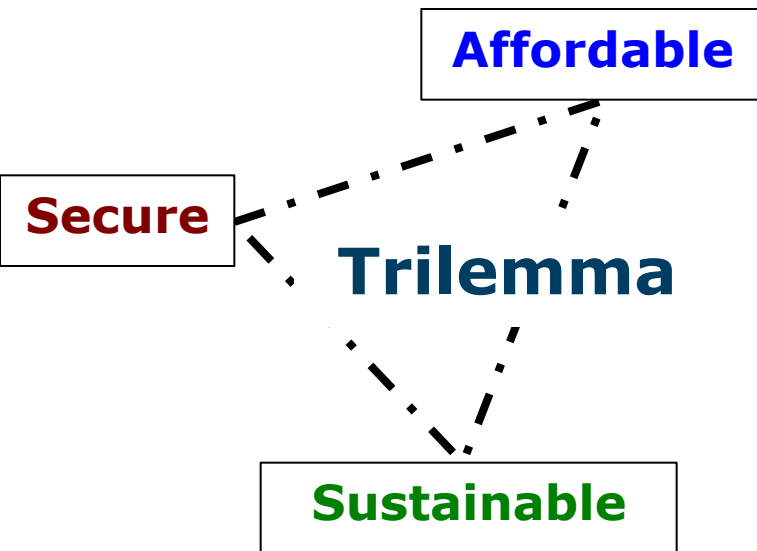
- ❖ yearly rolling baselines
- ❖ yearly pledges & reviews, e.g. reducing Cpp [CO<sub>2</sub> per person] and controlling **main drivers**

### 3) Political economy of **energy** interests, power, money



- **Economics worship the uniform incentive:**
  - **The Globally Harmonized Carbon Tax**
  - **Unique Carbon Prices clearing Emissions Trading markets**
- **Such uniform carbon price is a mirage (fake)**
  - **What is a globally harmonized carbon tax for Benin, Belarus, Belgium, Bolivia, Bulgaria, ...etc... ?**
  - **Emissions trading is disfunctional when diverse activities are amalgamated • markets function if well segmented**
  - **Metaphore: cutting emissions requires hundreds 'cutting instruments' ⇔ single scythe on leveled playing field**
  - **Unequal landscapes are not flattened by a blanket cover**
  - **Triggering billions of diverse actors in trillions of daily activities requires adjusted pressure levels**

**Optimal incentive doses are Specific**  
**Climate Policy: Multilevel, Polycentric & Diverse**



## Cascade

**1. Sustainable:** ambient renewable energy flows = nature decides where & when sources deliver

**2. Secure** ≠ all energy wishes instantly satisfied [security ≠ reliability ≠ obesity]

**3. Affordable:** by technological innovation redundant capacities



### **Lock-in (2014-....) Large energy companies Magritte Group ⌘ EU Commission ⌘ Nuclear discourse**

- **Magritte Group (March 19, 2014) recommends:**
  - **Preference for 'mature renewables in the regular market'**
  - **Priority to the utilization of existing competitive power capacity rather than subsidizing new constructions**
  - **Restore the ETS as a flagship climate and energy policy**
- **EU (April 9, 2014) New Energy State Aid Guidelines**
  - **Refrain the German Energiewende**
  - **Payments for UK coal power capacity**
  - **Subsidize planned EDF EPR at UK Hinkley Point (€115/MWh during 35 years)**
- **Nuclear discourse molds fake reality**
  - **IAEA & IPCC option low-carbon (⇔ renewables)**
  - **No real sustainability assessment**



### **Drastic & urgent transition changes**

- **Energy sector: double transformation to mainly flow renewable electricity supplies**
  - **German Energiewende as locomotive ⇔ Lock-in by major companies, with the 2014 EU State Aid guidelines as substrate**
- **Third chance for nuclear power by old promises?**
  - **IAEA discourse adopted by IPCC in 2014**
  - **Substitute 'decarbonisation' for 'sustainability' (i.e. sustainability assessment no longer needed)**
- **Ongoing trust in non-performing uniform instruments**
  - **ETS as typical example (actually a showcase of captured regulation via comitology)**
- **Thorough critical analyses pave disruptive pathways**