Biodiversity, Transformation and Socially Meaningful Innovation

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MEDIAN

Prologue: there is a crisis…

or is it just one crisis?

- Financial /Economic
- Social/Demographic
- Energy
- Climate change
- Biodiversity and ecosys
- Water
- Contamination nical and radioactiv
- New f of contamination (C nanotechs?…)

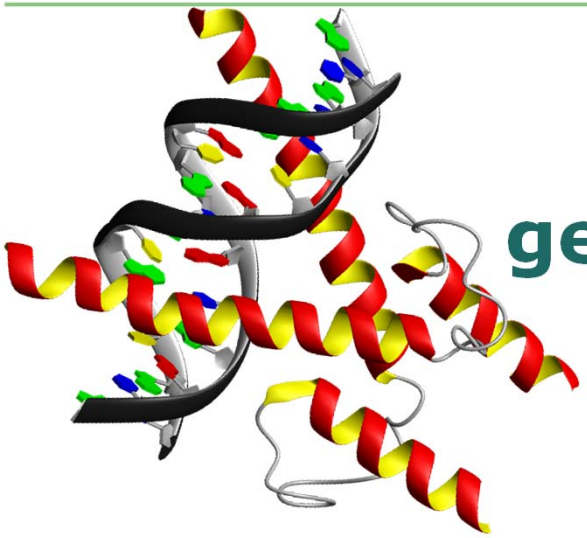
A series of systemic crises

Global environmental crisis

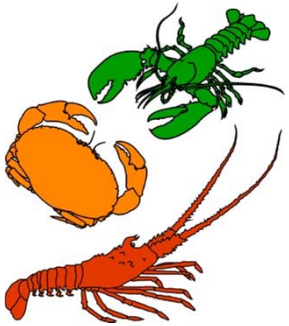
Content

- The biodiversity crisis
- Comparing the crises: commonalities, differences
- Interconnectedness
- Biodiversity at the heart of the picture
- Time for transformation
- Innovation
- Why business

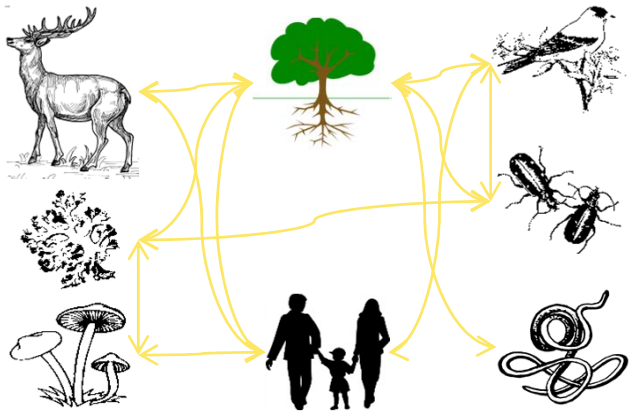
Biodiversity

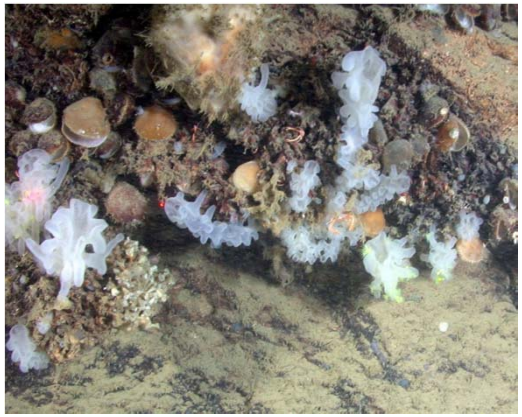


genes ⟷ species

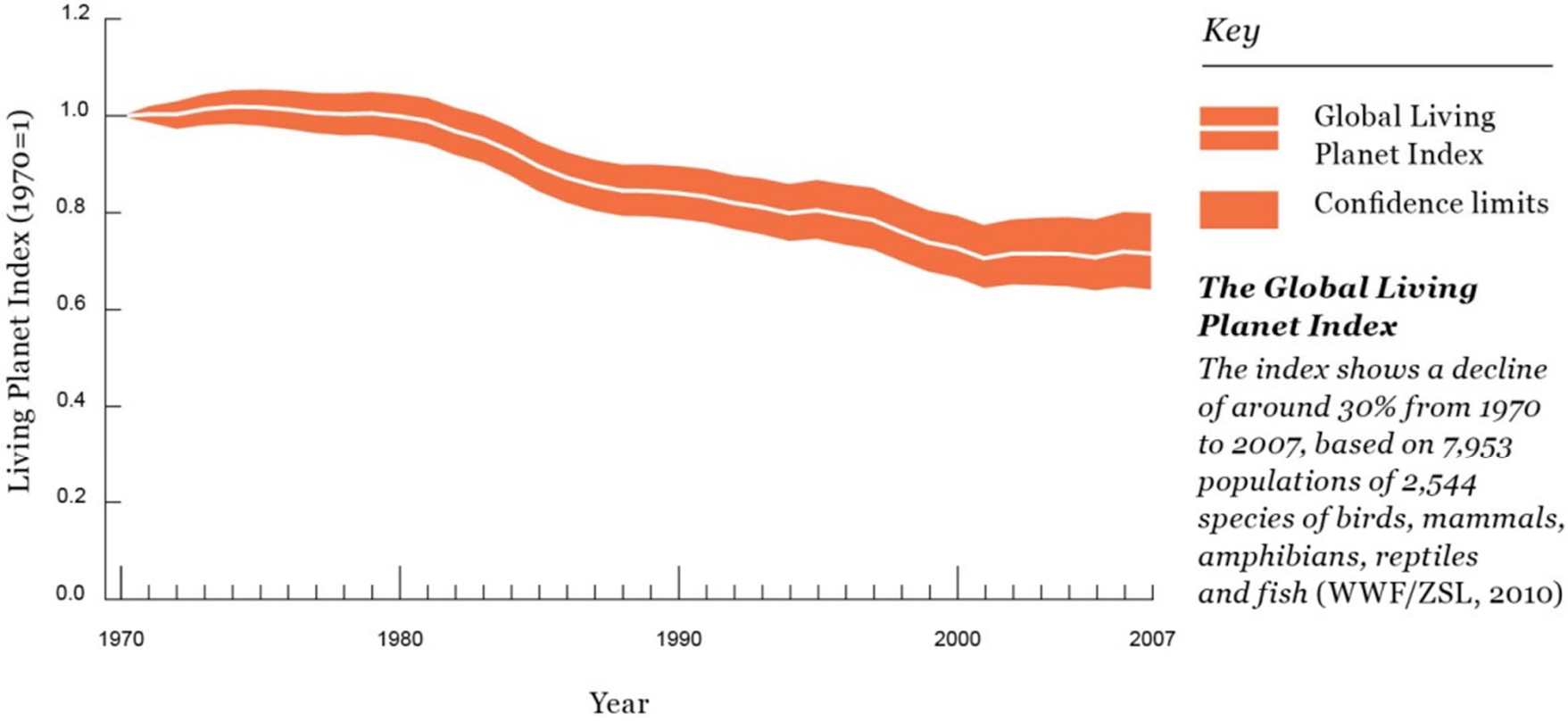


ecosystems





The biodiversity crisis

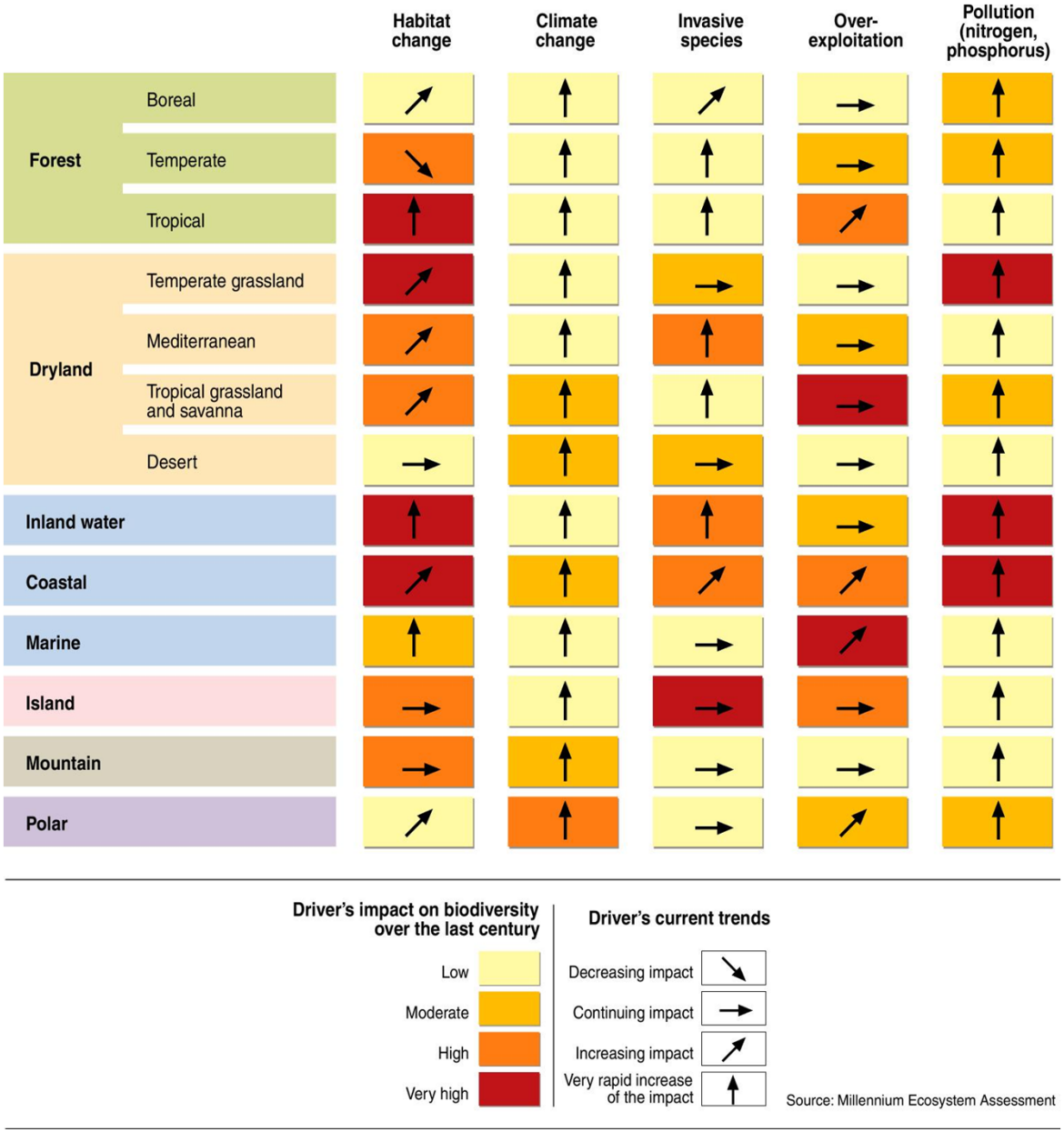


We are loosing species, genes, populations, ecosystems at accelerating rates (species: 1000x higher rate than natural rate)

Drivers of biodiversity loss / change

- lifestyles
- production and consumption patterns
- population growth
- economic growth
- conflicts
- land- and sea-use changes
- climate change, ocean acidification,
- over-exploitation of natural resources
- Pollution
- invasive species
- soil erosion
- ...

Direct drivers growing in intensity



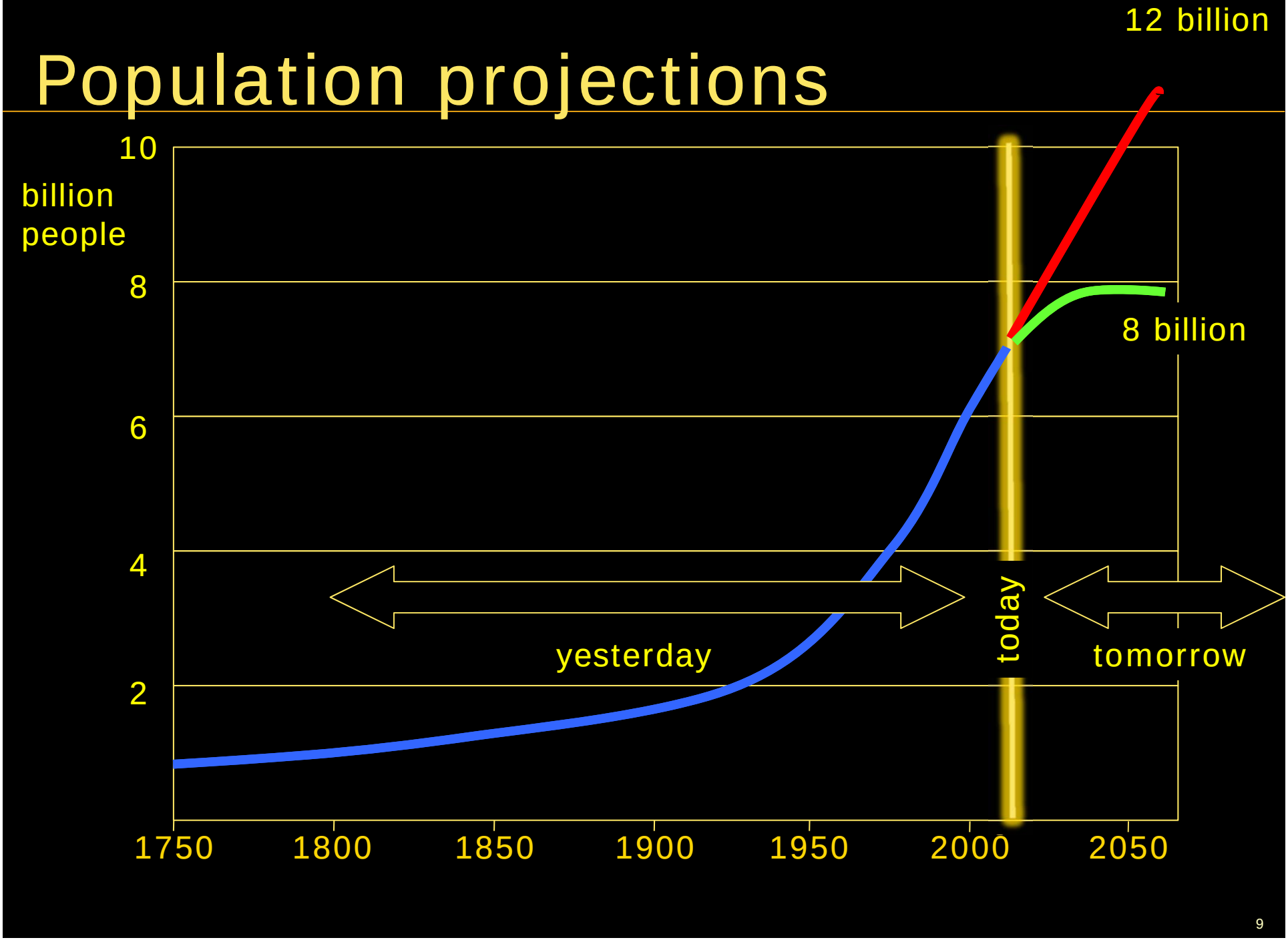
Most direct drivers of degradation in ecosystem services remain constant or are growing in intensity in most ecosystems

Millennium Ecosystem Assessment, 2005

The living world…

- Gives us
  - oxygen, food, fibre, medicine, fuel, …
- Ensures that
  - water and air are pure, plants are pollinated, seed are dispersed, pest and disease controlled, …
- Helps to
  - dispose of waste, recycle nutrients, regulate floods, absorb carbon, regulate climate, …
- Allows us to be human, giving us
  - inspiration, recreation, well-being, discovery, …
- Provides options for the future
  - choice for future generations, buffer against the unexpected, …

Population projections



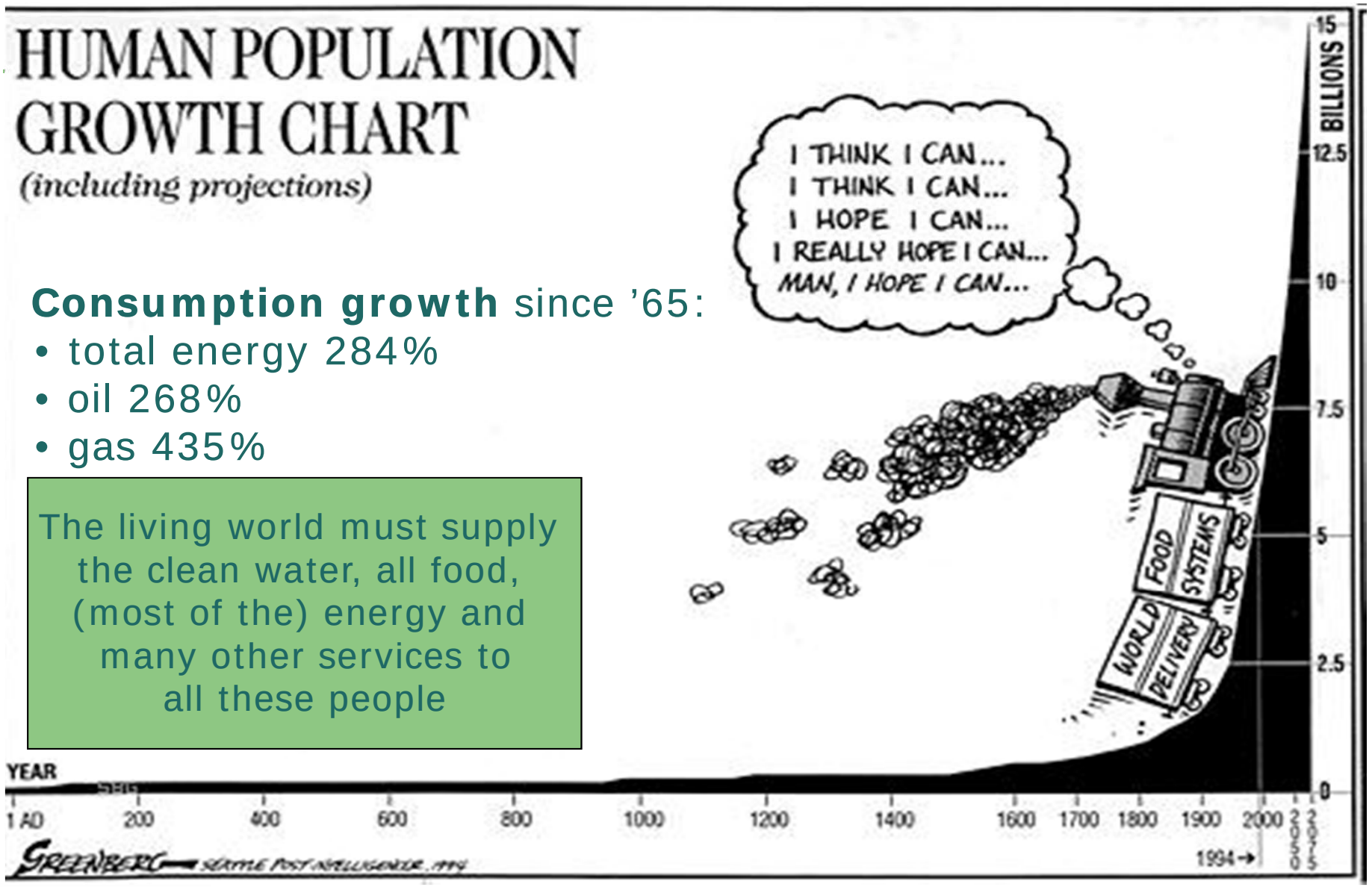
HUMAN POPULATION GROWTH CHART

(including projections)

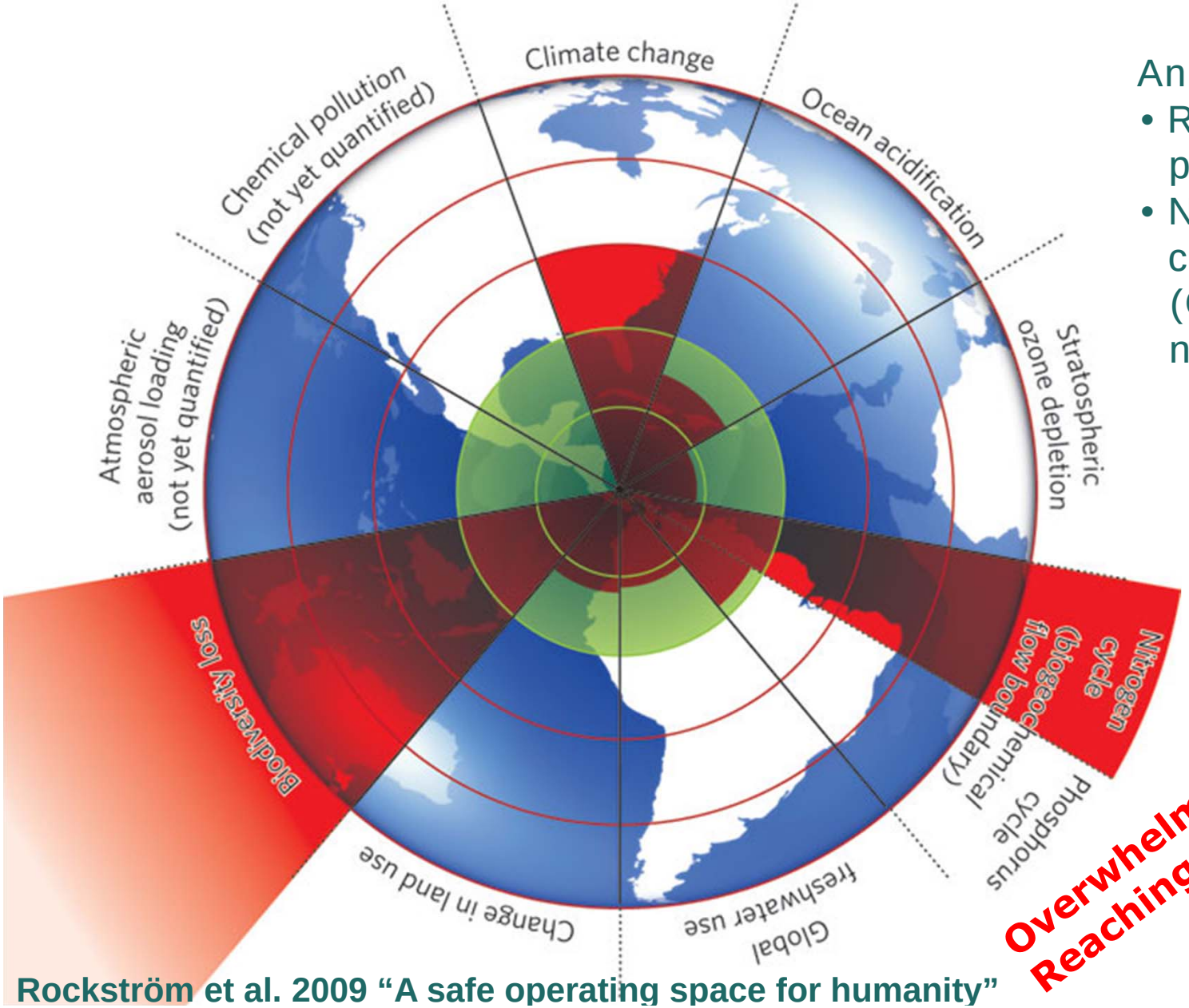
Consumption growth since ’65:

- total energy 284%
- oil 268%
- gas 435%

The living world must supply the clean water, all food, (most of the) energy and many other services to all these people



Environmental issues… (crises)



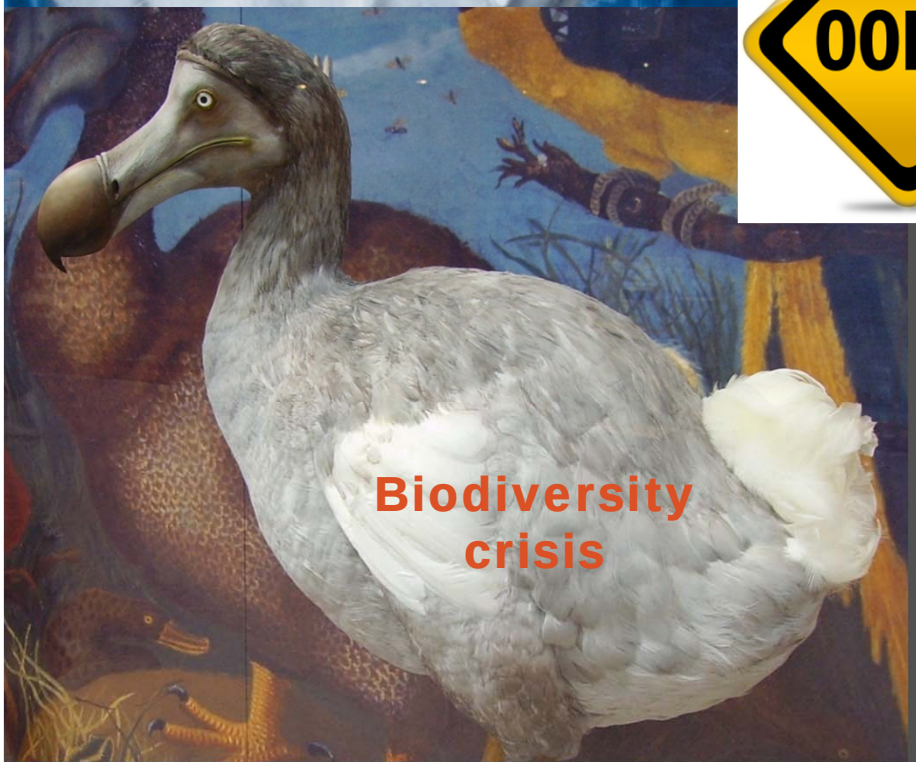
And…

- Radioactive pollution
- New forms of contamination (GMOs, nanotechs?…)

Overwhelming the system? Reaching ecological limits?

Rockström et al. 2009 "A safe operating space for humanity"

Comparing 3 crises



Some common underlying causes

1. Ignorance of complex system, e.g. thresholds, tipping points and systemic risks
2. Early warnings & late lessons ignored
3. Misplaced faith in models
4. Strong imbalances between stocks and flows
5. Debts and risks passed on to distant others incl. future generations
6. Misleading market prices that exclude many costs and risks
7. Non-transparent transactions, products and impacts
8. Socially malign incentives
9. Not accounting for what matters
10. Dominance of free market deregulatory ideology

Some common & pervasive consequences

- Capitals (financial, economic, social, natural) destroyed
- Inequities and injustices exacerbated
- Environmental, social & economic insecurities increased
- Meltdown in trust in financial, political and business elites
- Economic & political ideological vacuums created
- **Opportunities now for radical ideas and practices?** (and risks!)

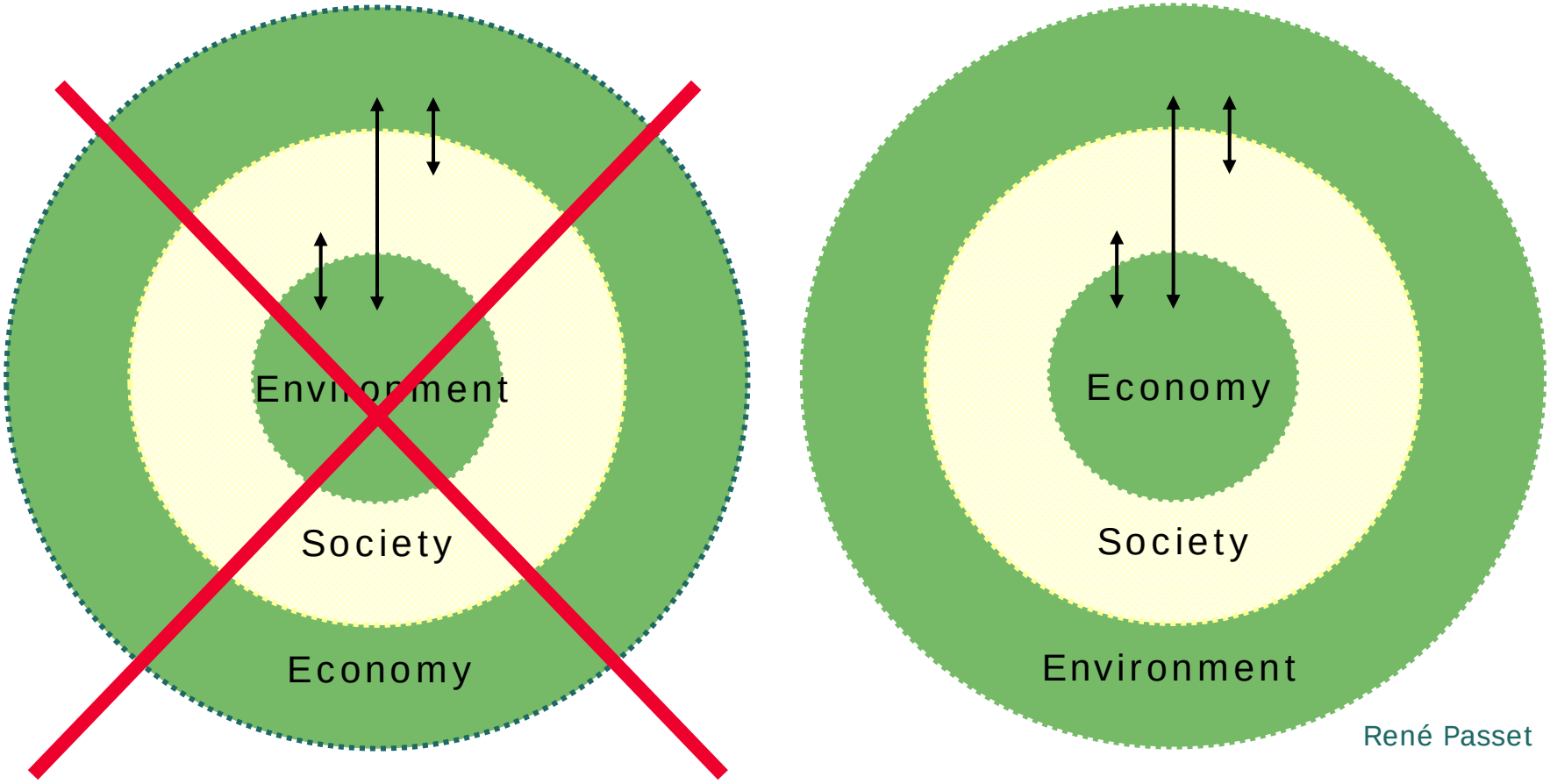
Some key differences…

- Financial and energy systems are (hu)manmade… the biosphere is not
- Financial crisis is visible, short term, largely reversible …

  Climate and biodiversity crises are to a large degree not (yet) visible, longer term, mostly irreversible
- Financial systems are more volatile: perceptions, expectations & behaviour rapidly change the system dynamics
- **All societies and economies depend on ecosystems, not vice-versa!**

Have we looked at things the wrong way?

A different take on sustainability:

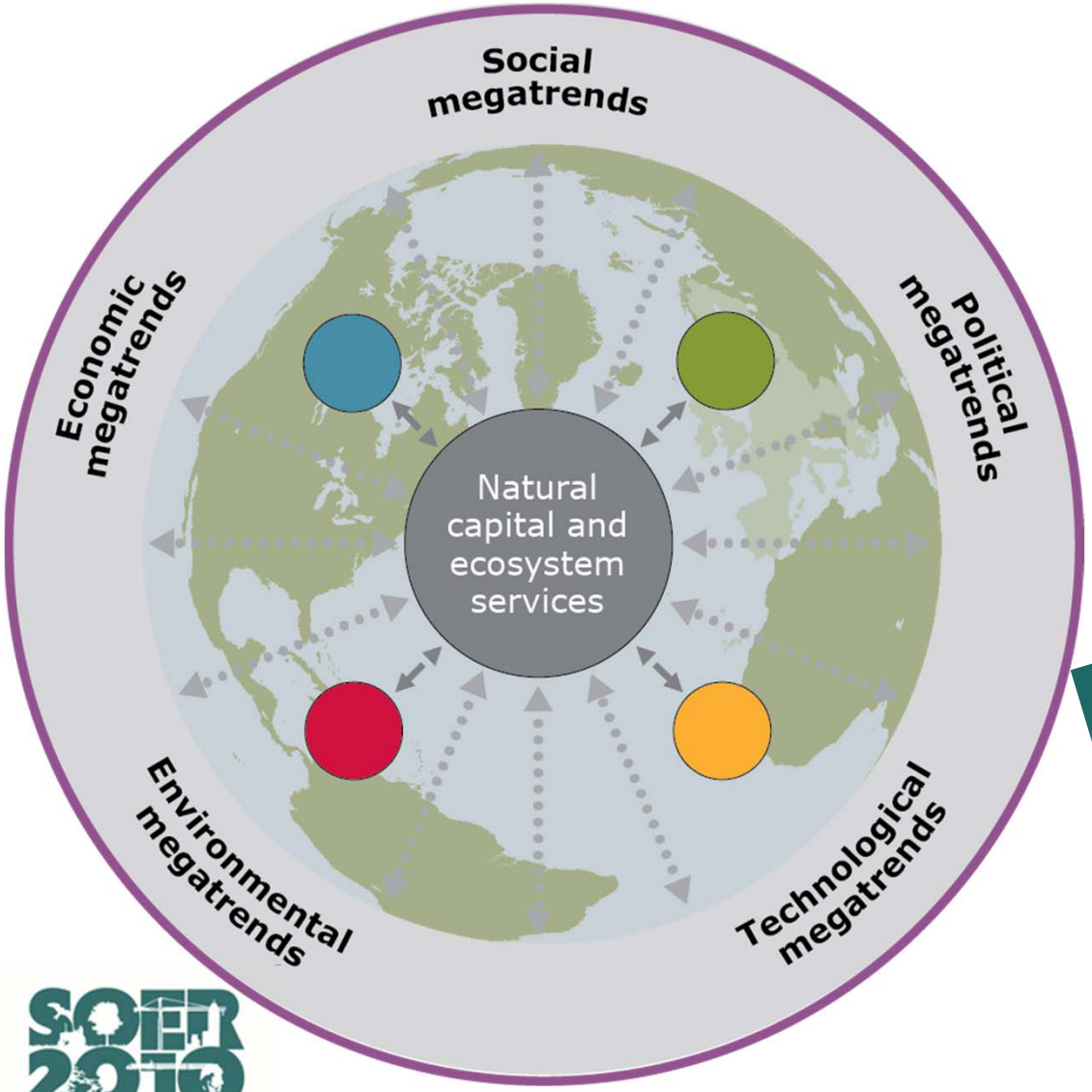


René Passet

Any civilisation is ultimately dependent on its ecological foundations

Interconnectedness

- A complex landscape of interconnected environmental and societal challenges:
  - poverty; food security; population; water; health; biodiversity; energy; climate change; chemical contamination; ocean acidification,...
- Interconnections between systems, risks, crises
- Biodiversity:
  - ✓ reveals interconnectedness
  - ✓ offers an interesting way to think about the other crises



Placing biodiversity and ecosystems at the heart of the issue landscape

Because we are living beings and it is our inescapable life-support system!

SOER 2010

Environment policy priority areas

- Climate change
- Nature and biodiversity
- Natural resources and waste
- Environment, health and quality of life

European Environment Agency

Time for transformation

- Current system builds on irreversible destruction of non-substitutable natural capital ⇒ environmental destruction as an unavoidable side-effect …
- Often our environmental policies and strategies are case-by-case "end-of-pipe" add-ons to an unchanged system …
- More than mitigation and adaptation capacities is needed: **transformative capacity**

"The ability to fundamentally alter the nature of the system over the long term, when current ecological, social, or economic conditions become untenable or are undesirable" (T. Elmqvist)

Innovation

- Dominance of a **narrow concept of innovation** as a way to bring more products to markets and deliver economic growth, jobs, profits in the short term

vs.

- **Concentrating on human health, wellbeing and quality of life**, and embarking on a more ecologically, socially and economically sustainable path

Re-balancing market-focussed innovation and socially meaningful and responsible innovation

Innovation with a human purpose!

Innovation: a transformative tool

Transform how we feel, think, relate to others and to nature, create, live, act, … and **do business!**

Some old ways won't work…

A role for business

- The time is ripe for a new business model
- Business can be reinvented to make more sense:
  - Business to provide a service to society
  - While maintaining our ecological life-support system
  - We can avoid the confusion of means and ends
- Some ingredients:
  - Innovation with a human purpose
  - Accepting fears, doubts and the feeling of helplessness
  - Values and ethics
  - Enthusiasm and optimism
  - Creativity and dreams
  - Harmony
  - Humour

Always take the time to nurture these!

Thank you!

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