

Redefining sustainability in the Anthropocene

A complexity-based paradigm for responsible research and regenerative economics

Sustainability Conference
Clermont-Ferrand

December 4-6th 2019



SAPIRR

Systems Approach of Public Innovation and Responsible Research

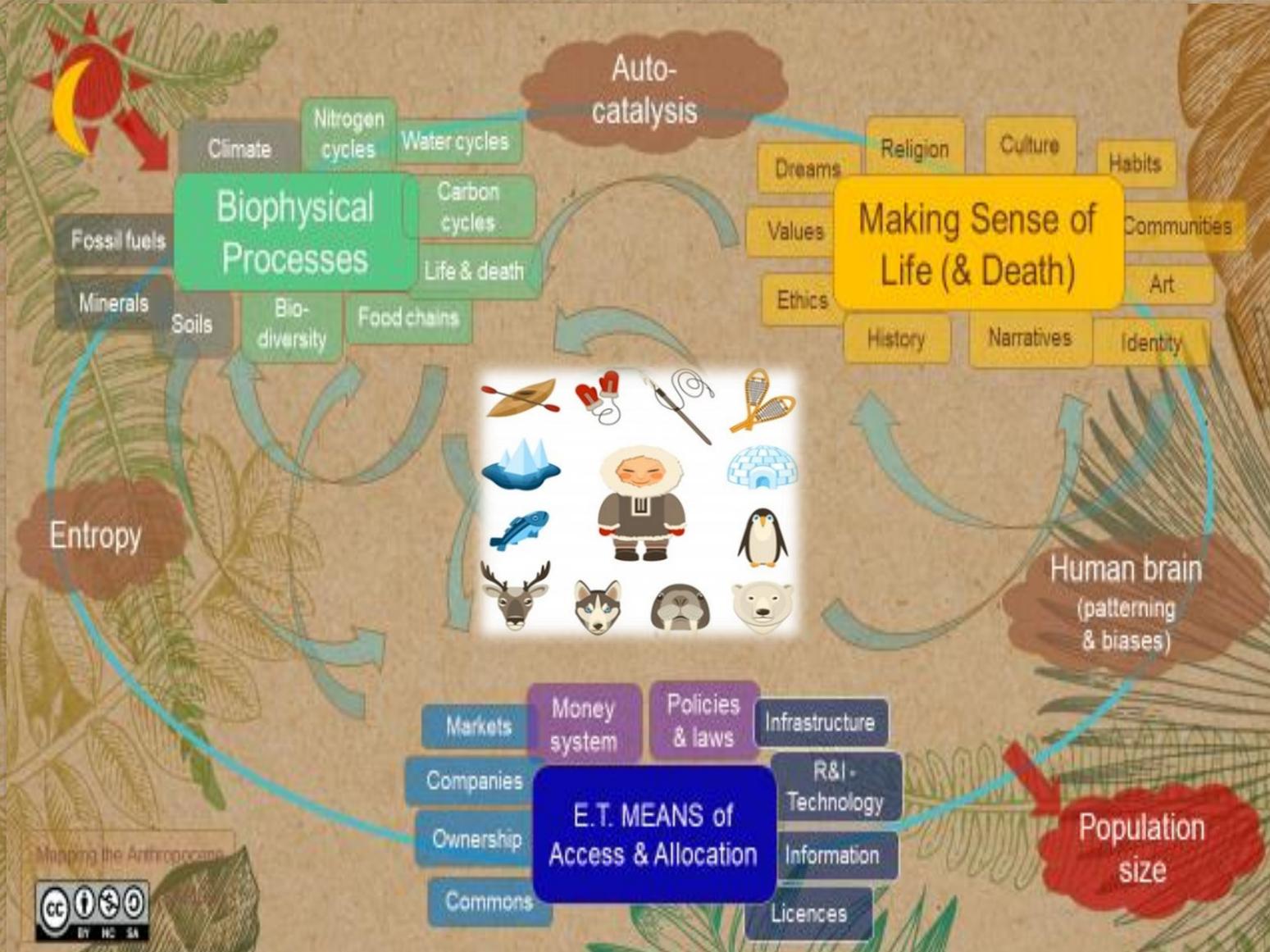
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EU CHAPTER CoR-EU

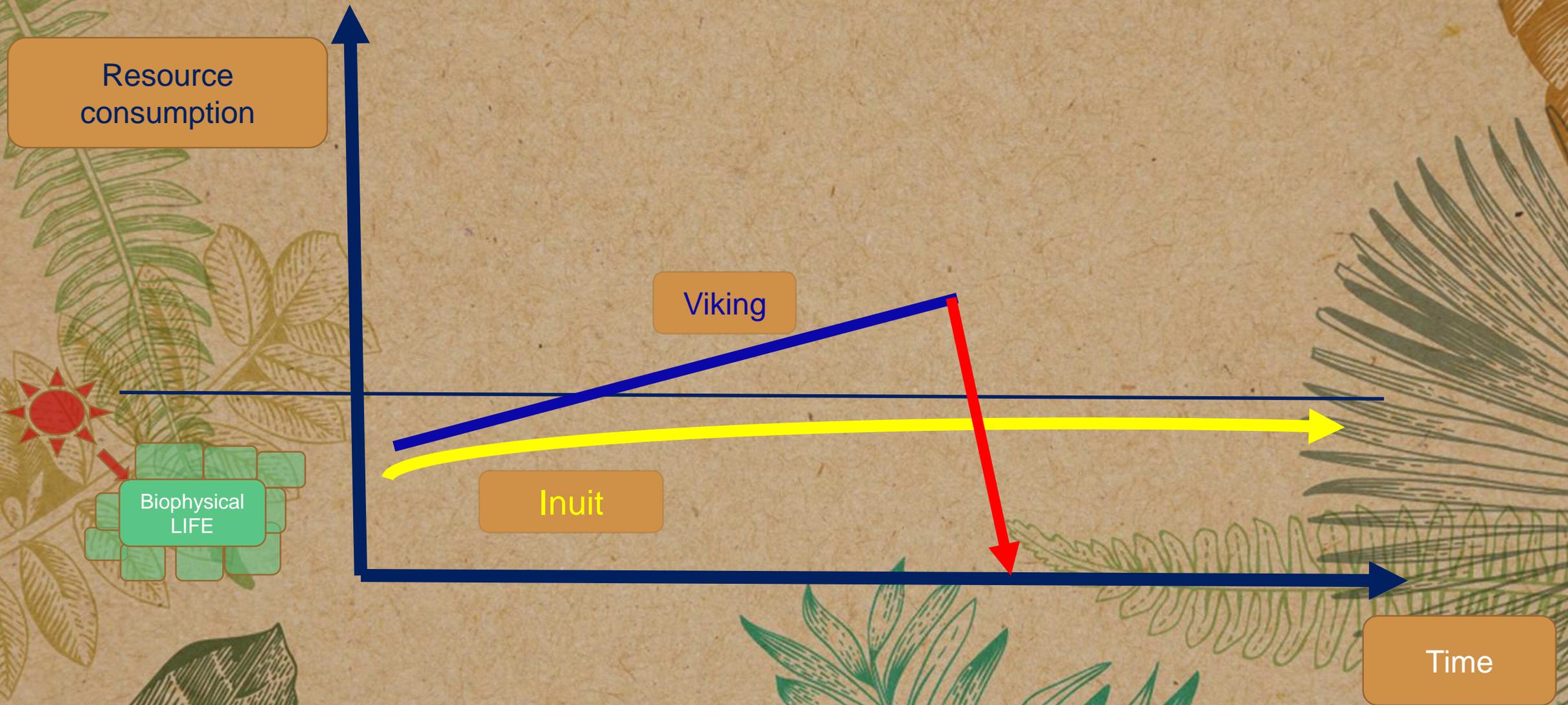
Stories of systemic complexity for the Anthropocene



Sources:

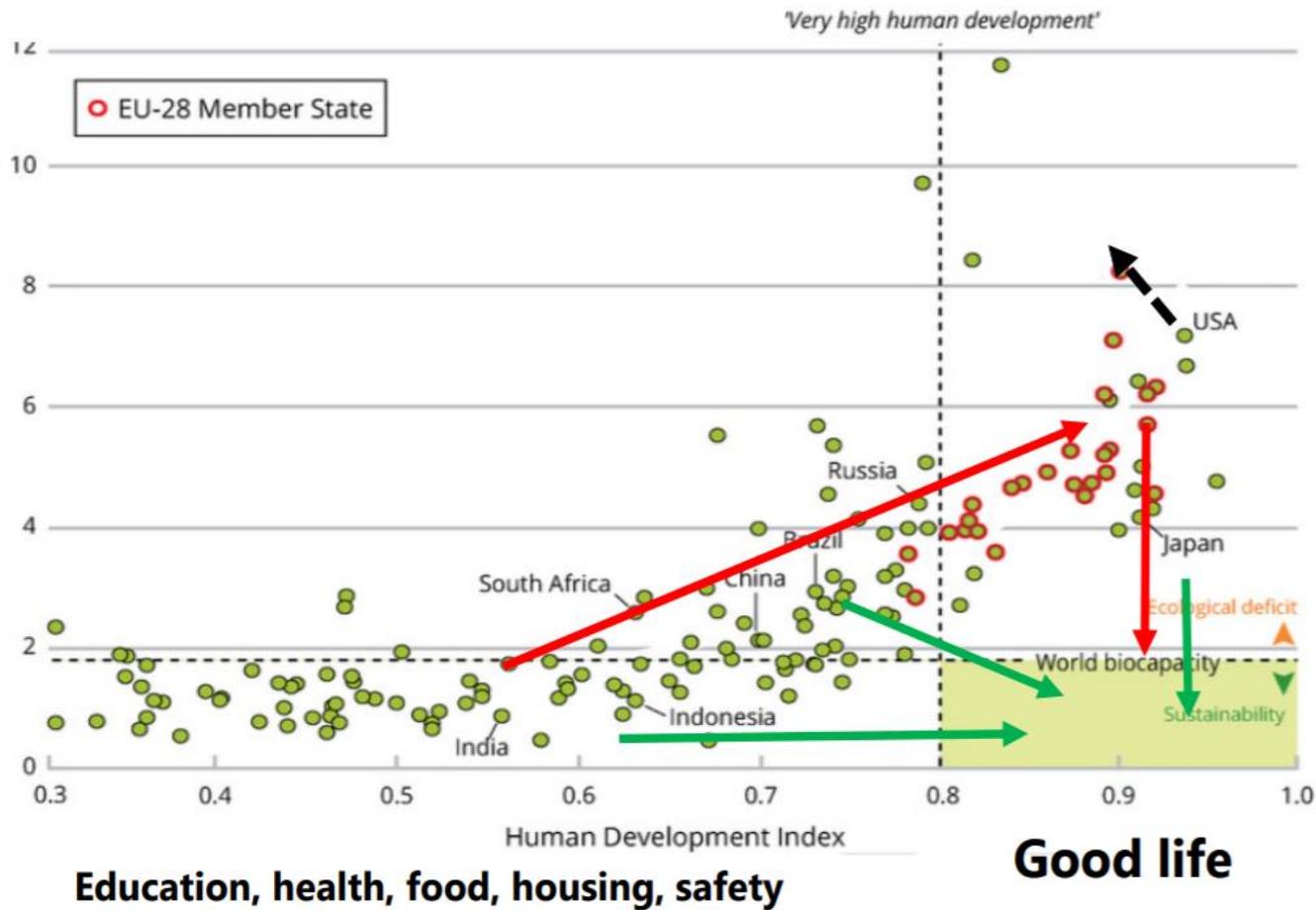
- Jarred Diamond, *Collapse*
- Jeremy Lent, *The patterning instinct.*

Socio-economic systems over time: non-linearity



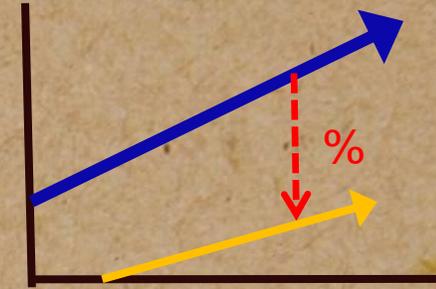
'Human development' as (wicked) problem

Ecological footprint
Planets needed for 'development'



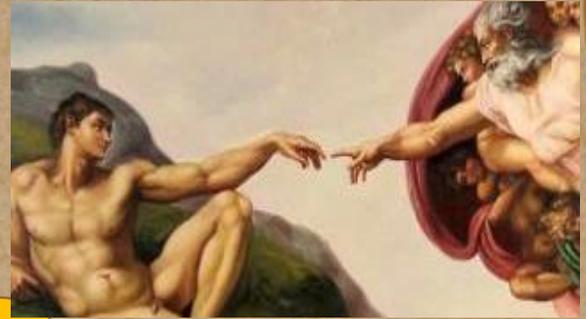
(Global Footprint Network, 2012; UNDP, 2014)

European Environment Agency



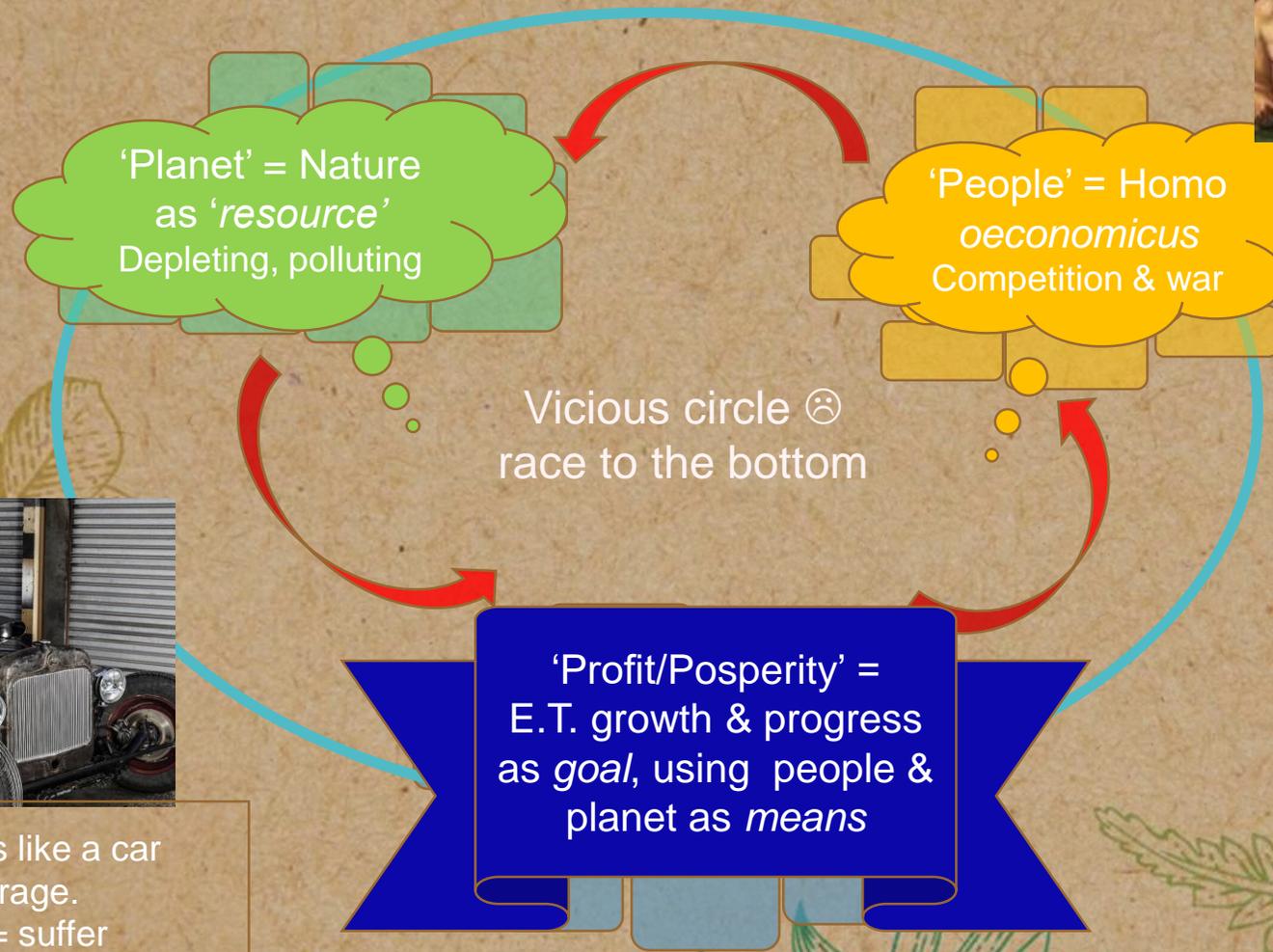
Education & health care based on 're-distribution' of % of E.T. growth; this explains why HDI-development always exceeds planetary limits

Are we any wiser than the Vikings? Western model of 'development' = lock-in



Indo-Europeans' belief man is created in the image of god, standing above nature
e.g. Science: "decipher & rewrite the book of life"

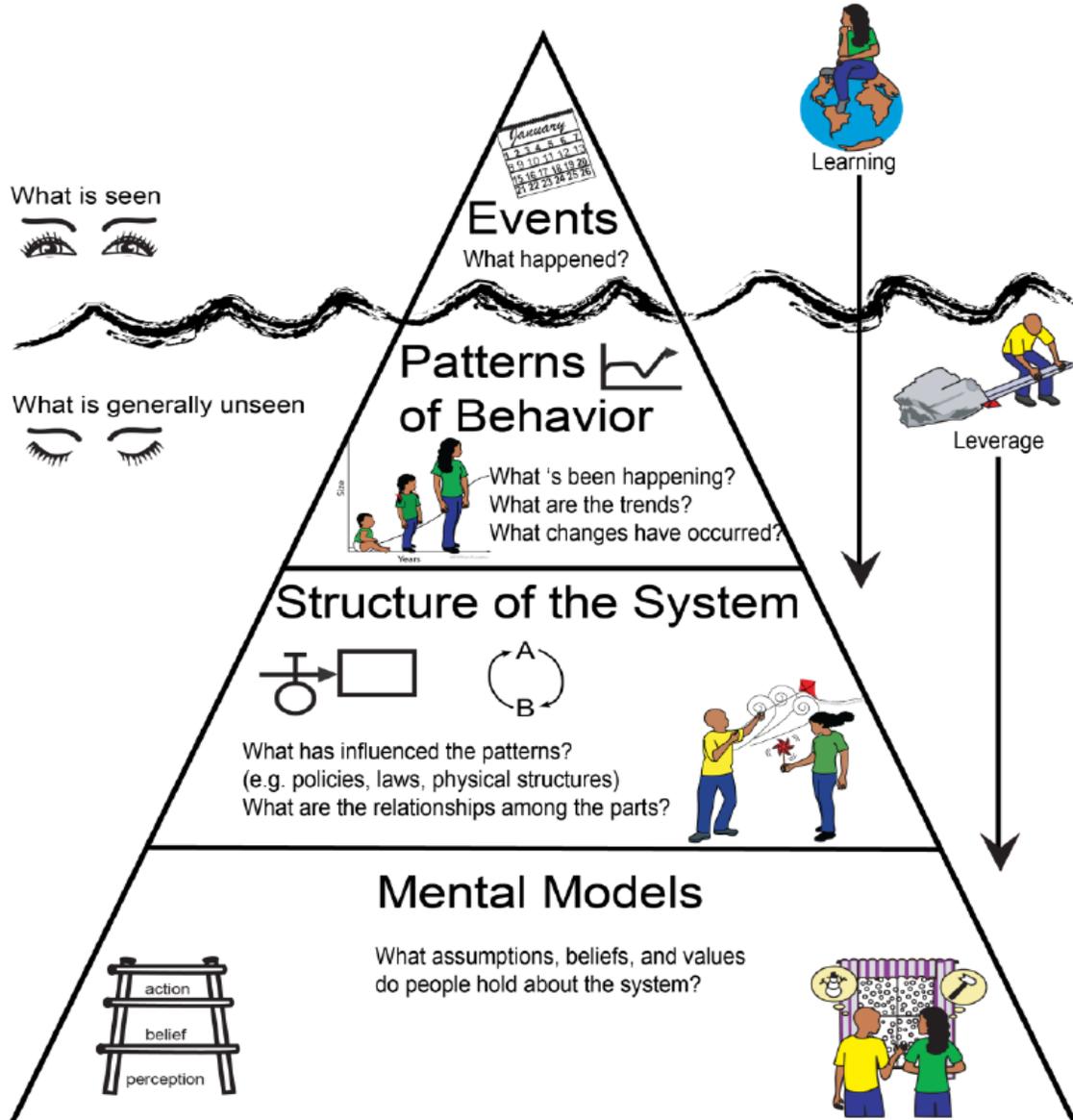
Sources: Harari: *Homo Deus*
Yasanoff: *Can science make sense of life?*



Current E.T. system is like a car running in a closed garage.

- Switch engine off = suffer
- Keep it running = suffer (& die)

Iceberg... Seeing What's Below the Surface



Adapted by Systems Thinking in Schools, Waters Foundation, www.watersfoundation.org, from Innovation Associates, Inc.

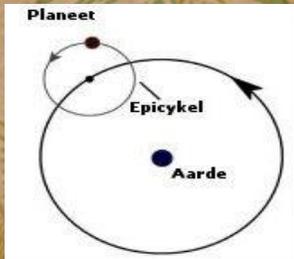
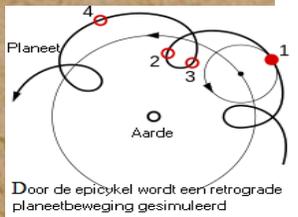
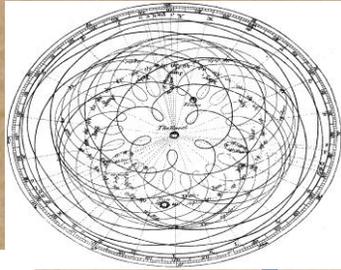
Incrementalism
'sustained' growth
with technology

Weak sustainability
= 'green growth'

Strong sustainability
'balanced co-evolution'
(including restricting
human population)

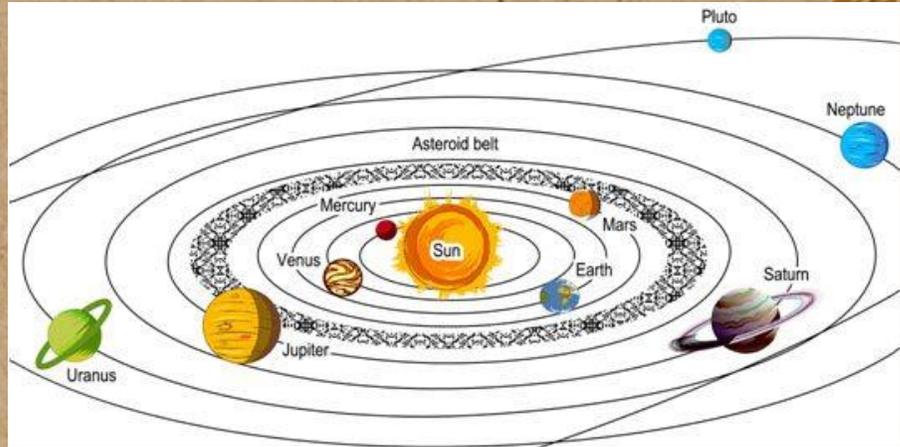


Science based on conventions & ideology (paradigm)



Normal/normative scientific *progress*

Weak sustainability = incremental corrections to basic narrative on human-nature domination



New paradigm = scientific revolution'
New norms for 'progress'
(next level of excellence)

Strong sustainability = based on Anthropocene-adapted ontology, epistemology & ethics

Academic institutions not designed in/for Anthropocene

Holocene

1. Stable conditions
2. Linear thinking (ceteris paribus)
3. Separate specialisms
4. Mathematical equations
5. Objective truth, 'pure' science
6. Laboratory small scale

Anthropocene

1. Humans destabilize conditions
2. Complexity judging & wisdom
3. Systems thinking & boundary critique
4. Non-linearity & reflexivity
5. Research as (responsible) co-creation
6. Global scale – Global Agenda 2030

Weak sustainability =

1. New specialism (sustain science)
2. Techno-fixes for (population) growth
3. Accelerating Homo Deus illusion

Strong sustainability =

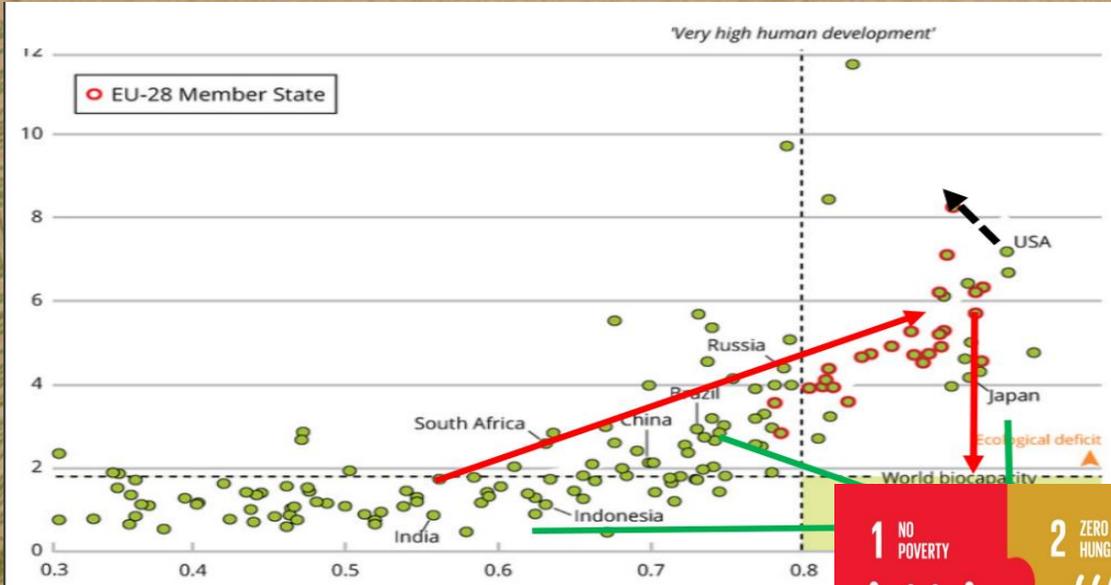
1. Transcending disciplinary paradigm
2. Ethical values & narratives
3. Solutions based on Earth reality

$$I = P \times A \times T$$

“Better Tech → Less Impact”

Impact = vicious (or virtuous) circle
emerging from P, A, T & Values

Thinking 'future education' again : UN Agenda 2030

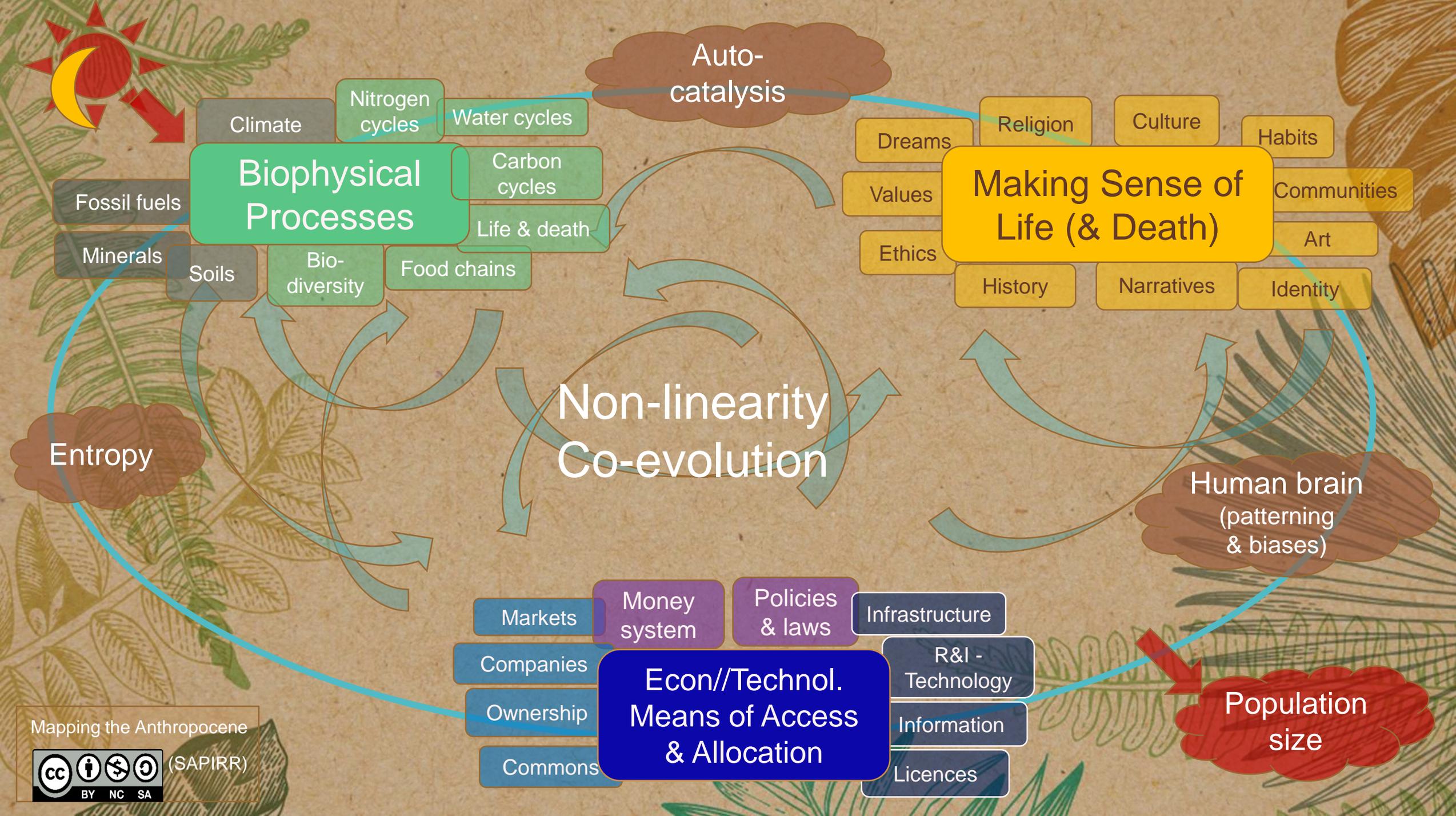


Human wellbeing

With (new) T.E. means of access & allocation

Within planetary boundaries

By peaceful cooperation, not 'economic warfare'



Biophysical Processes

- Climate
- Nitrogen cycles
- Water cycles
- Carbon cycles
- Life & death
- Food chains
- Bio-diversity
- Soils
- Minerals
- Fossil fuels

Auto-catalysis

Making Sense of Life (& Death)

- Dreams
- Religion
- Culture
- Habits
- Values
- Communities
- Art
- Ethics
- History
- Narratives
- Identity

Non-linearity Co-evolution

Human brain (patterning & biases)

Econ//Technol. Means of Access & Allocation

- Markets
- Money system
- Policies & laws
- Infrastructure
- R&I - Technology
- Information
- Licences
- Companies
- Ownership
- Commons

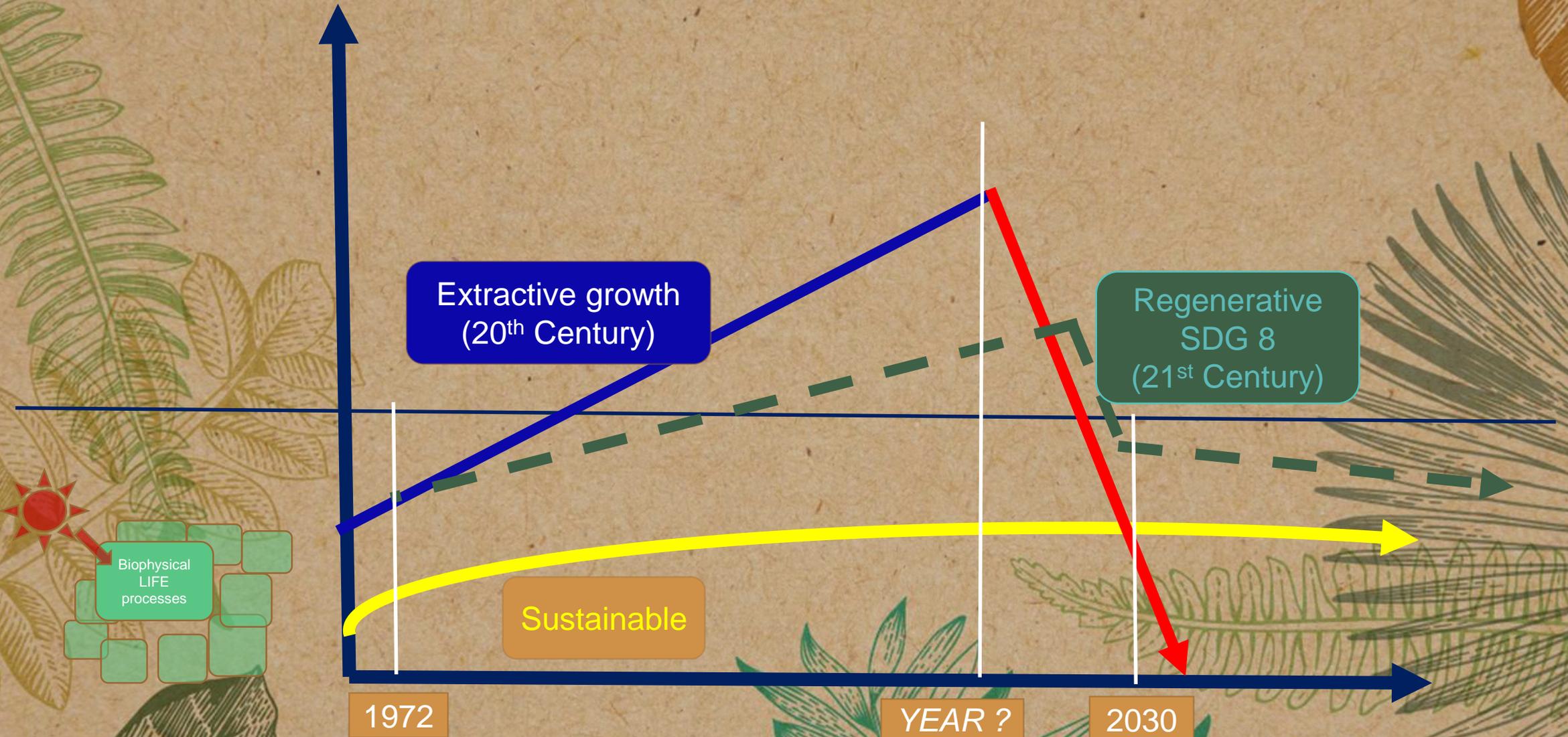
Population size

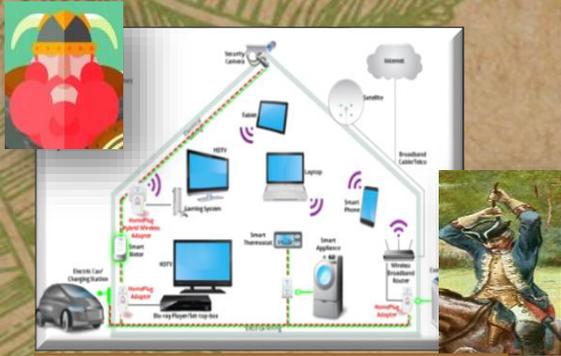
Mapping the Anthropocene



(SAPIRR)

Visualising perspectives - emerging alternative futures





Holocene solutions



Virtuous circle ☺
regenerative culture



Anthropocene solutions



Social Entrepreneurs

- Individuals with innovative solutions to society's most pressing social problems
- Visionaries
- Pragmatists

EUROPEAN COMMONS ASSEMBLY

P2P foundation

the Food Hub eten met een verhaal

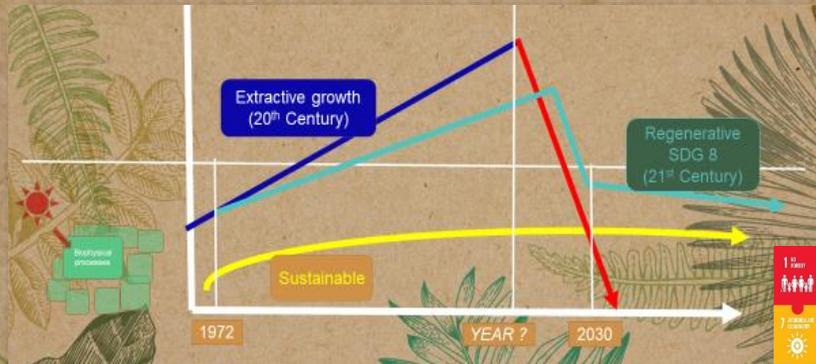
GLOBAL ECOVILLAGE NETWORK
GEN ANNUAL REPORT 2018

Network Economy
21st Century Entrepreneurship

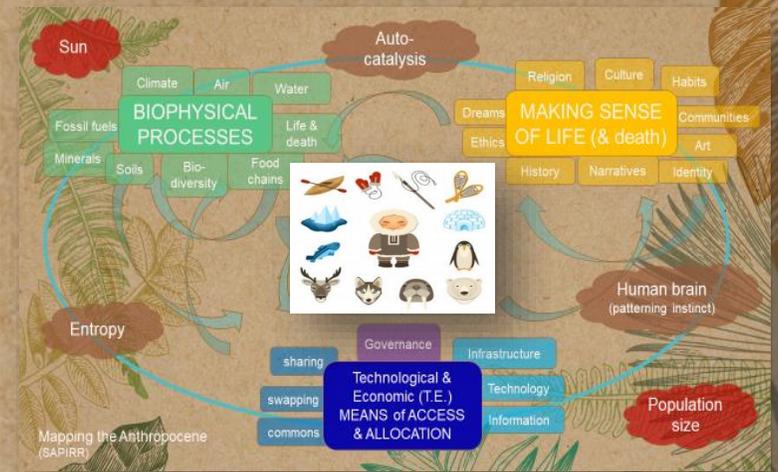
howest

TO MAKE SOCIETY A BETTER PLACE FOR ALL

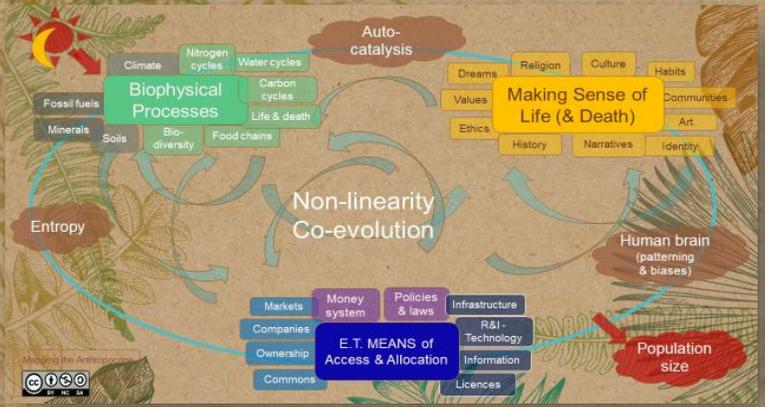
THE 4 PLACENTAS OF FUTURE EDUCATION



GIVE HOPE



VALUES & STORIES



EMBRACE COMPLEXITY



COCREATE THE FUTURE

Thank you

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