

# PATTERNS OF THE BIOSPHERE

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**THE CHALLENGES IN TIMES OF CLIMATE CHANGE**  
**Sustainable Development Goals and the Paris Climate Agreement**

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- Humans do not exist without nature, but nature can do without humans.
- The biosphere has feedback loops, entirely outside human control, but heavily influenced by human action.
- Recent mankind's story is a story of rapid acceleration of the human imprint on the planet and its biosphere.
- We are overshooting the planet's carrying capacity.



Be a tree  
and you  
will see

Biosfären är det tvärvärdiga yttsta skiktet på vår planet där det finns liv. Vi människor är en del av biosfären och helt beroende av luften, havet, bergen och alla andra ekologiska system för att leva och överleva. Sällsynt och värdefullt är sammansatta med biosfären bestående av ett stort antal arter av samfund.

Vår art är framgångsrik. Antalet människor har fördubblats på 45 år och med teknikutveckling och världsomspännande handel

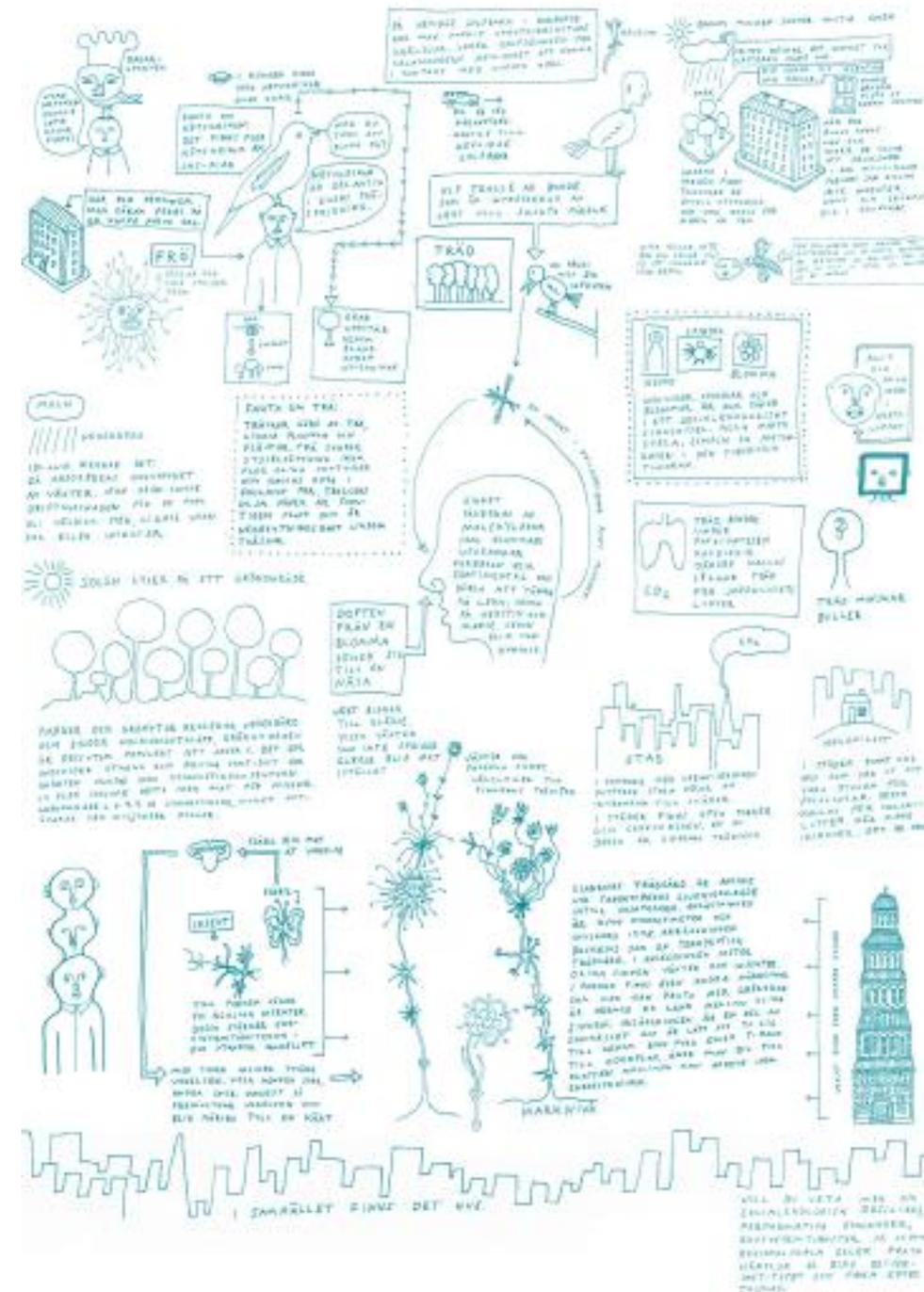
# Lobsters and humans

- Human survival, procreation, health and happiness is intricately linked to nature.
- Nature, as we know it, can only survive if the human effect is kept in check through regulations and governance.
- Social-natural systems can withstand and absorb shocks, such as overfishing.
- But once too many elements have been eliminated from the system (loss of diversity) the system can collapse and die.
- Gulf of Main example: the warning signs were visible for anyone to see. But too many locked-in behaviour patterns. Action was too little and too late.



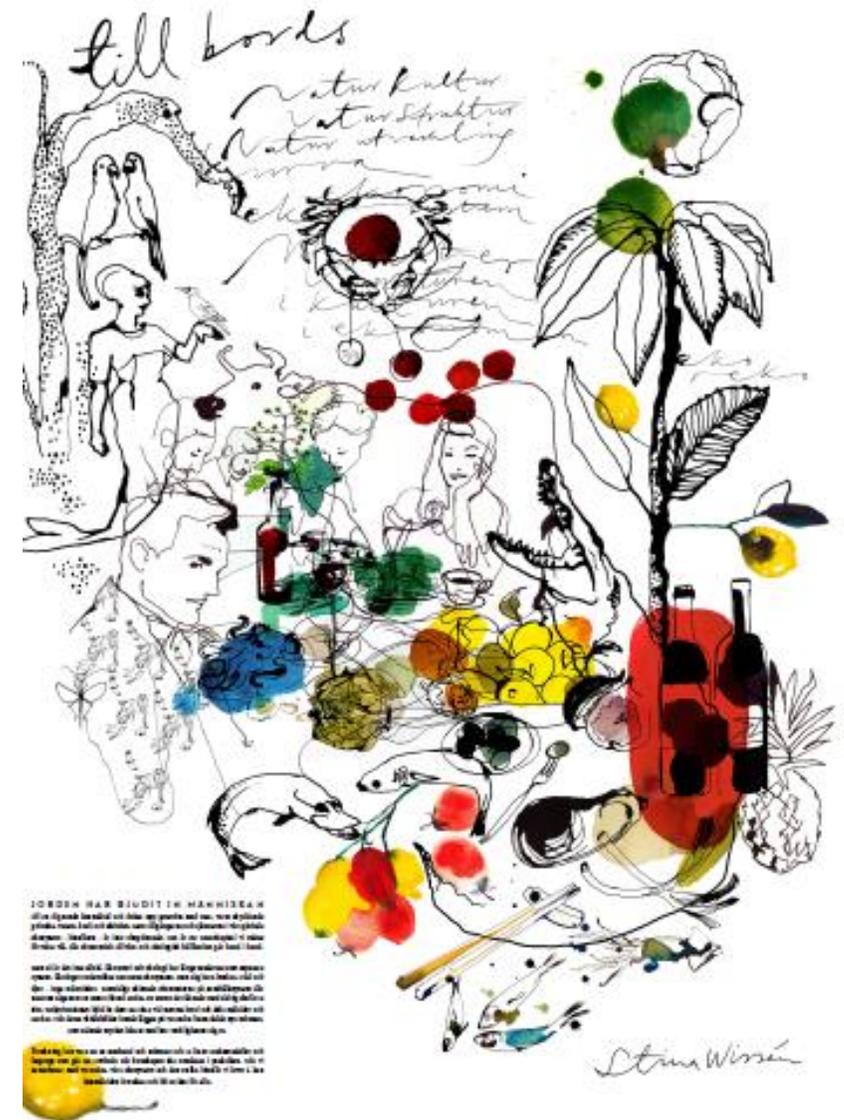
# City's ecosystem services

- Spreading seeds
- Absorbing CO<sub>2</sub>
- Retaining water
- Maintaining and nurturing biodiversity including insects habitat
- Pollination
- Noise reduction
- Green lungs for the city inhabitants
- Urban farming

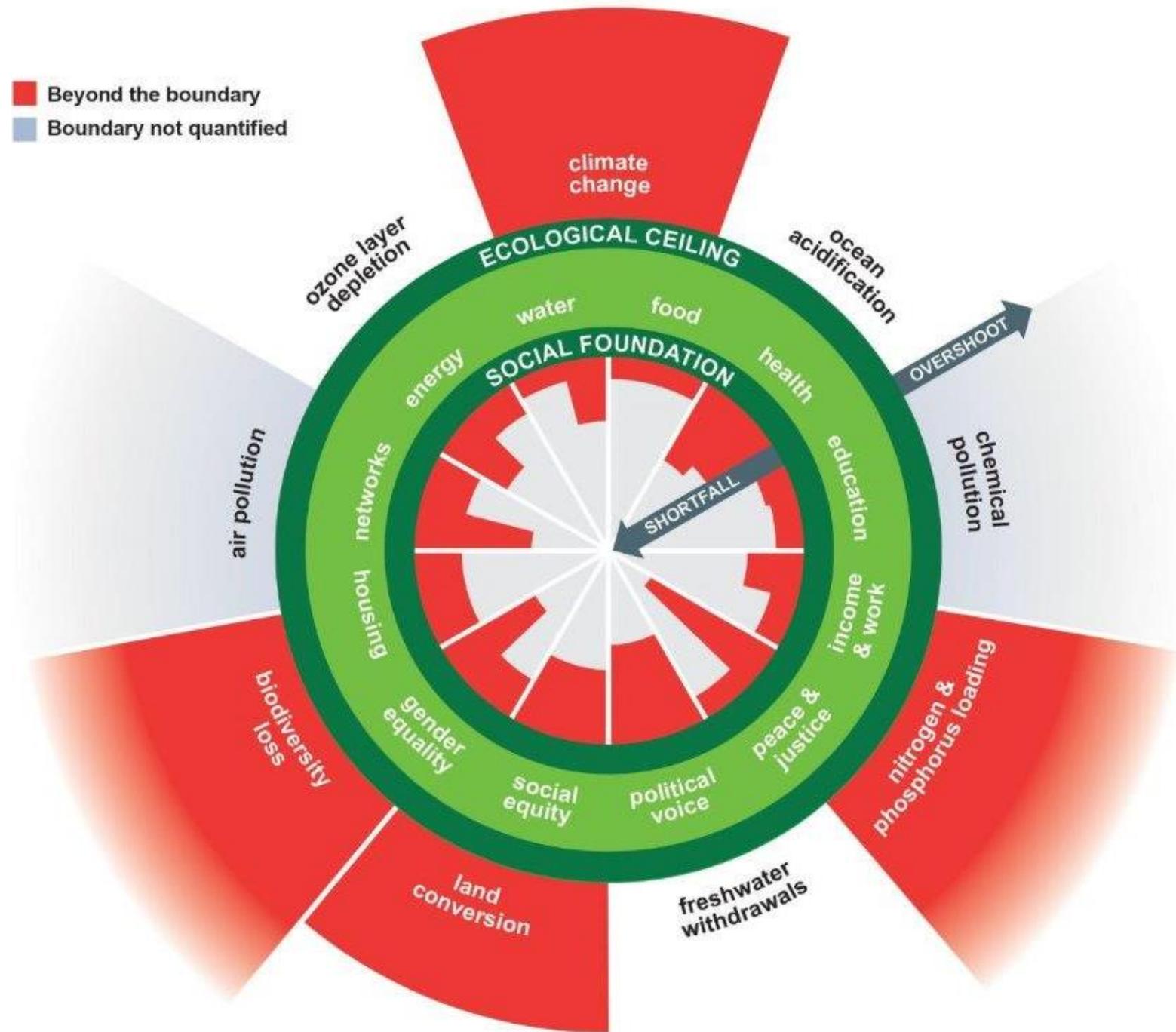


# Welcome to the banquet

- Working with the Earth and Natural Capital instead of against it.
- Be modest. Do not eat more than necessary.
- Do not destroy the nature upon which continued future health depends: natural resources, ecosystems, climate, forests, grasslands, wetlands, seas, coasts, air
- The commons – they are important to be left to limited groups that exploit these resources for their own gain



# THE SAFE AND JUST OPERATING SPACE FOR HUMANITY



Raworth, K. (2017)



# SUSTAINABLE DEVELOPMENT GOALS

**1** NO POVERTY

**2** ZERO HUNGER

**3** GOOD HEALTH AND WELL-BEING

**4** QUALITY EDUCATION

**5** GENDER EQUALITY

**6** CLEAN WATER AND SANITATION

**7** AFFORDABLE AND CLEAN ENERGY

**8** DECENT WORK AND ECONOMIC GROWTH

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**10** REDUCED INEQUALITIES

**11** SUSTAINABLE CITIES AND COMMUNITIES

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**13** CLIMATE ACTION

**14** LIFE BELOW WATER

**15** LIFE ON LAND

**16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**17** PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

# The 2015 Paris Climate Agreement

- Hold warming well below 2 degrees with efforts to limit warming to 1.5 degrees;
- Greenhouse gas emissions to peak as soon as possible, and net-zero emissions in the second half of this century;
- Mitigation measures of individual countries to be expressed in nationally determined contributions (NDCs);



## Analyzing the Degree of Alignment between the SDGs and INDCs

SDGS	NUMBER OF SDG TARGETS FOR WHICH THERE WERE ALIGNED CLIMATE ACTIONS IN INDCs
 Goal 1 <b>No Poverty</b>	7 OUT OF 7 TARGETS
 Goal 2 <b>Zero Hunger</b>	7 OUT OF 8 TARGETS
 Goal 3 <b>Good Health &amp; Wellbeing</b>	12 OUT OF 13 TARGETS
 Goal 4 <b>Quality Education</b>	10 OUT OF 10 TARGETS
 Goal 5 <b>Gender Equality</b>	6 OUT OF 9 TARGETS
 Goal 6 <b>Clean Water &amp; Sanitation</b>	8 OUT OF 8 TARGETS
 Goal 7 <b>Affordable &amp; Clean Energy</b>	5 OUT OF 5 TARGETS
 Goal 8 <b>Decent Work &amp; Economic Growth</b>	9 OUT OF 12 TARGETS
 Goal 9 <b>Industry, Innovation &amp; Infrastructure</b>	8 OUT OF 8 TARGETS
 Goal 10 <b>Reduced Inequalities</b>	7 OUT OF 10 TARGETS
 Goal 11 <b>Sustainable Cities &amp; Communities</b>	10 OUT OF 10 TARGETS
 Goal 12 <b>Responsible Consumption &amp; Production</b>	11 OUT OF 11 TARGETS
 Goal 13 <b>Climate Action</b>	5 OUT OF 5 TARGETS
 Goal 14 <b>Life Below Water</b>	10 OUT OF 10 TARGETS
 Goal 15 <b>Life on Land</b>	12 OUT OF 12 TARGETS
 Goal 16 <b>Peace, Justice &amp; Strong Institutions</b>	9 OUT OF 12 TARGETS
 Goal 17 <b>Partnerships for the Goals</b>	18 OUT OF 19 TARGETS

0%

100%

**Is time on our side?**



# Time is not on our side

- We have only 12½ years left before 2030 – the deadline of the SDGs
- The Paris Agreement aims at keeping warming below 2C over the twenty-first century relative to pre-industrial levels. This will involve 40–70 % reductions in global anthropogenic emissions by 2050 and near-zero emission levels by 2100 (IPPC 2015)!
- But the current voluntary mitigation efforts by the countries are not at all enough.
- Without additional and really disrupting commitments, the planet will be 4-5 degrees warmer at the end of the century.
- Each day of inaction or insufficient action means that additional effort is required in remaining period, which is getting shorter all the time.

**Is business as usual an option?**



# Business as usual – just one example – industrial agriculture's bad effects

- Health of animals and people
- Air quality
- Excessive greenhouse gas emissions
- Excessive consumption and pollution of water
- Rights of family and subsistence farmers, and workers
- Soil degradation
- Consumers



# Questions for the bioeconomy

- How sustainable is it or can it be? And how quick?
- How does help humanity to stay within the Planetary Boundaries? And how quick?
- How does help humanity to reinforce and not weaken the Social Foundations? And How quick?



# What to do?

- Be curious.
- Pose questions
- Find out what the innovation or practice does to respect the Planetary Boundaries and improve the Social Foundations, in the very short term
- Use the SUFFICIENCY and PRECAUTIONARY principles



# Two principles

Sufficiency

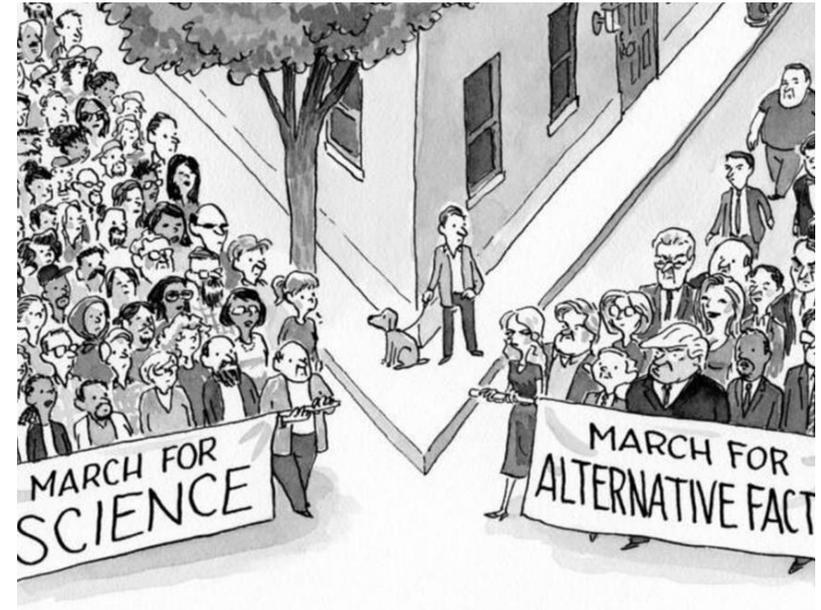


Precautionary



The Precautionary Principle

- Get involved
- Experiment with new forms of collaboration and governance



A satellite view of Earth from space, showing the Americas and surrounding oceans, with the word 'THANKYOU' overlaid in white. The image is framed by a white border and a green background.

**THANKYOU**