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PISA AGRICULTURAL ECONOMICS
Food and rural studies for sustainability

UNIVERSITÀ DI PISA

A safe and just operating space: the role of Organic farming

Gianluca Brunori

The importance of the SCAR Foresight Process

- The **SCAR Foresight process** **feeds the strategic planning process of research policy making** and gives **advice to political decision makers** (MS, COM).
- The **SCAR foresight exercises** **highlight weak signals** as well as **future opportunities**
- The **SCAR Foresight reports** have resulted in a **high number of joint activities between Member States**

The Foresight Process is a pillar of SCAR

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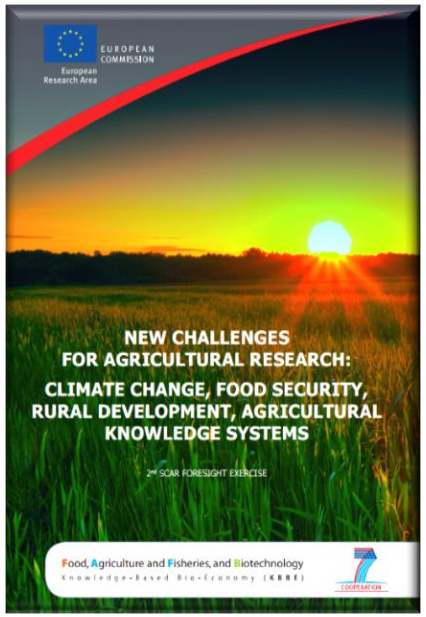
Four SCAR Foresight Studies in Series…

Climate Change and Energy

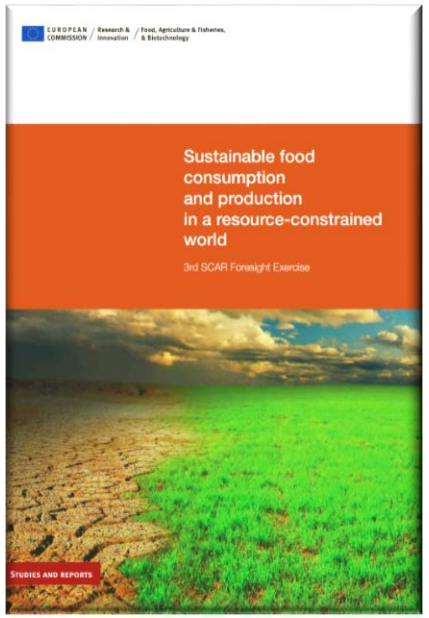
2007

Resilience and Food Crises 2008



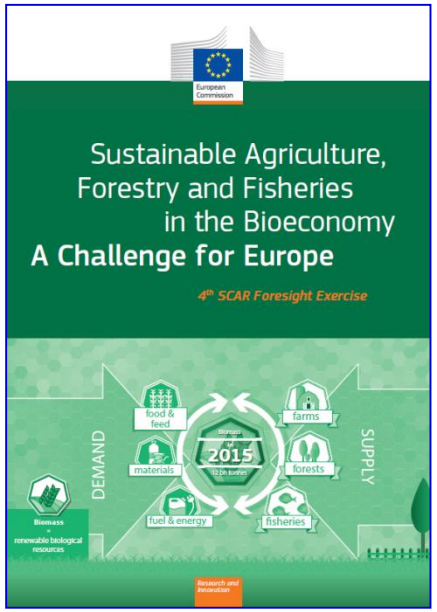
2009

Resource Scarcities Efficiency vs Sufficiency



2011

Sustainable Bioeconomy



2015

2019: „Towards the 5th SCAR Foresight“

SCAR Standing Committee on Agricultural Research

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2019: TOWARDS THE 5TH SCAR FORESIGHT


PARIS CLIMATE AGREEMENT
Historical document that legally binds the whole World to participate in climate change fight.
196 countries
Adopted the Agreement
officially recognizing human influence on climate
Finance
Rich countries will provide minimum of $100 billion to developing ones for climate change adaptation by 2020
2020
Will come into force by 2020
If signed by 55 countries covering 55% of global emissions
Goal
Holding the increase in the global average temperature well below
2°C
Pursue efforts to limit the temperature increase to
1.5°C
5 years
Ambitious
Every 5 years countries shall revise their emissions reduction targets and measures
Climate neutrality 2050
The balance between emissions and sinks should be reached in the second half of XXI century
Climate damage
For the first time ever the Agreement defines climate loss and damage terms but liability and compensation are not mentioned
Clean technologies
The Agreement urges to speed up clean tech development and international technology transfer
Role of forests
The Agreement binds saving and increasing forest area in order to capture GHGs from the atmosphere
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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
THE GLOBAL GOALS
For Sustainable Development
2016 - 2030

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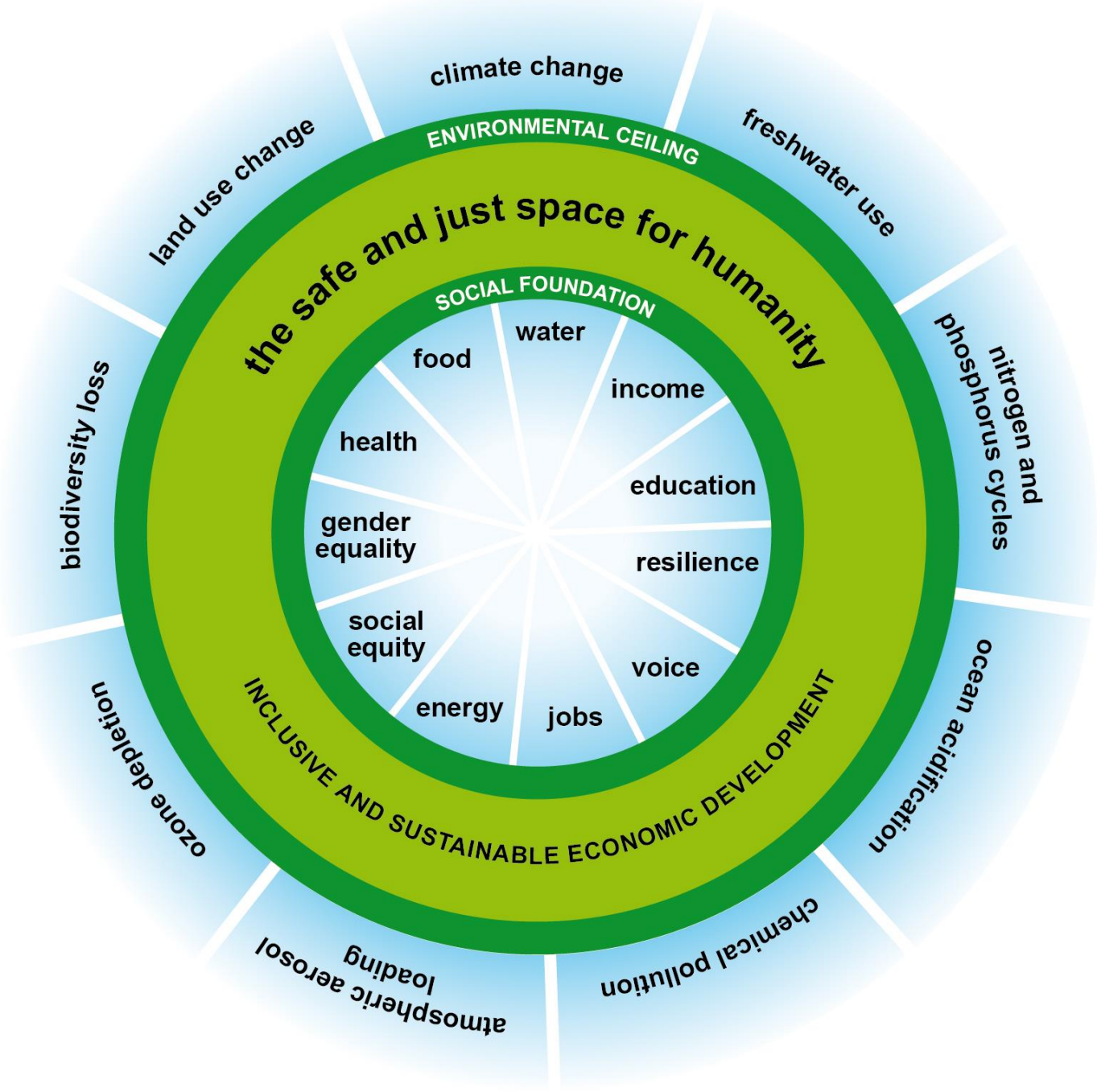
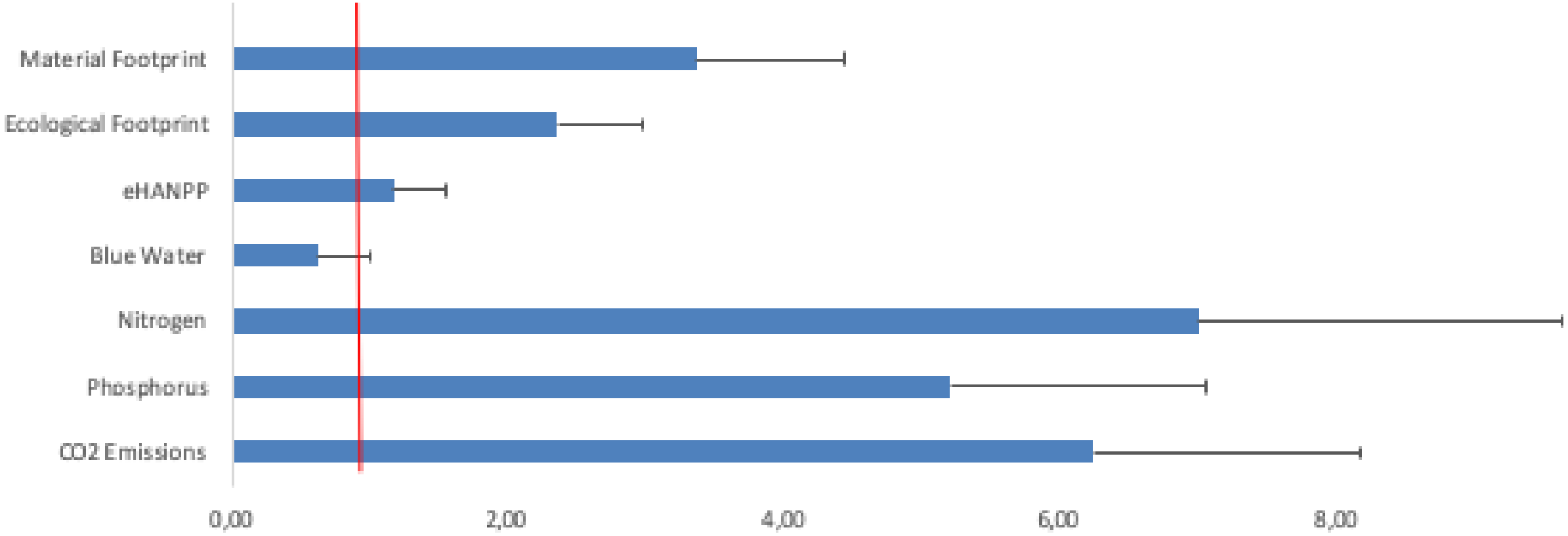
Natural resources and Food Systems: Transitions towards a “safe and just” operating space



Specific questions of the V foresight exercise

1. What are the **key systemic transitions** that meet the objectives of COP21 and the UN SDGs?
2. What are the **enablers and lock-ins** towards effective transitions?
3. What are the **costs of transitions** and of a continuation of "business as usual" for the actors and for society?

Europe and planet boundaries



How to stay within a safe operating space?

	Planetary boundary / Indicator	Target number for 2050
1	Climate change / CO_2 emission	Reduce CO_2 by 84 % in 2050
2	Biosphere integrity / Species number	Restore declining biodiversity and their ecosystems. Reach the 2000 level.
3	Land system change / eHANPP	Reduce eHANPP by 15 % in 2050
4	Freshwater use / Blue water	Keep freshwater use at recent level
5	Biogeochemical flows / Nitrogen and Phosphorus applications	Reduce N by 86 % in 2050, Reduce P by 81 % in 2050
6	Novel entities and chemical pollutions / Pesticide applications	Reducing pesticides by 75% in 2030

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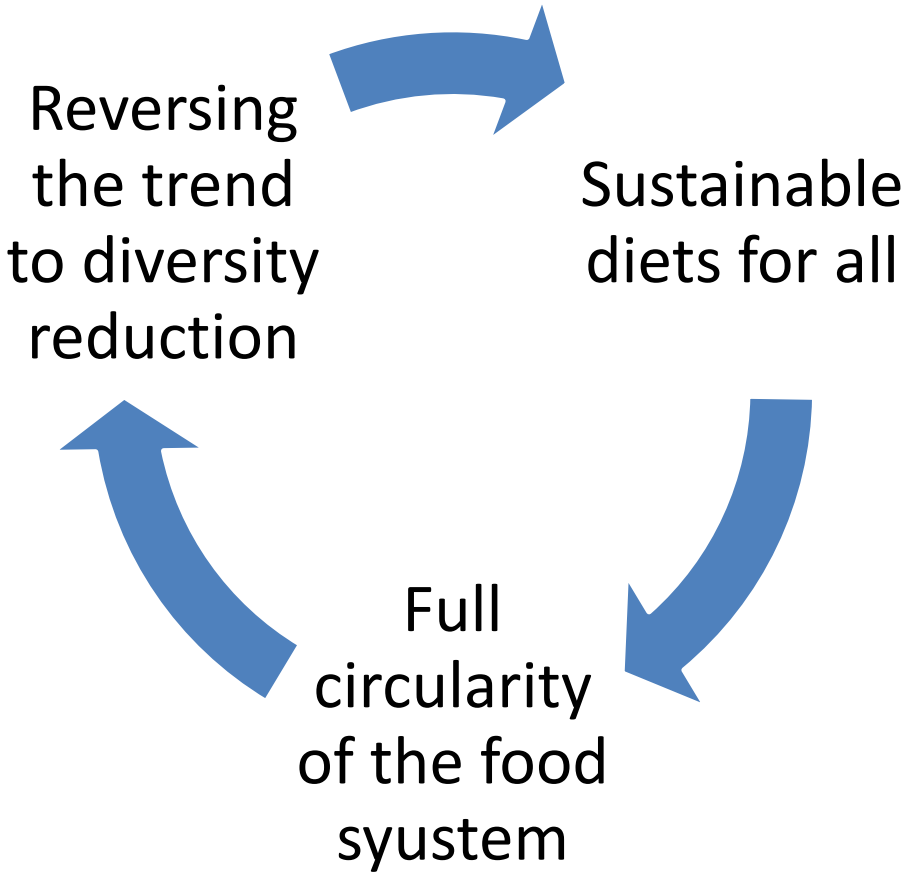
Transition approaches

- Resistance to change is embedded into 'regimes', rules and routines that ensure the stability of the system
- The regime controls behavior of individuals and organization indirectly: knowledge paradigms, technical and ethical norms, infrastructures, etc..
- When regimes are challenged by external drivers ('Landscape') or by internal tensions, they tend to change
- Resources for change are found in 'niches',

Three transitions



Transition 1: Sustainable diets for all

SDGs

Game changers

Sufficiency

Agroecology,

Digitalization,

New food sources

Targets

Healthy diets

Higher nutritional density

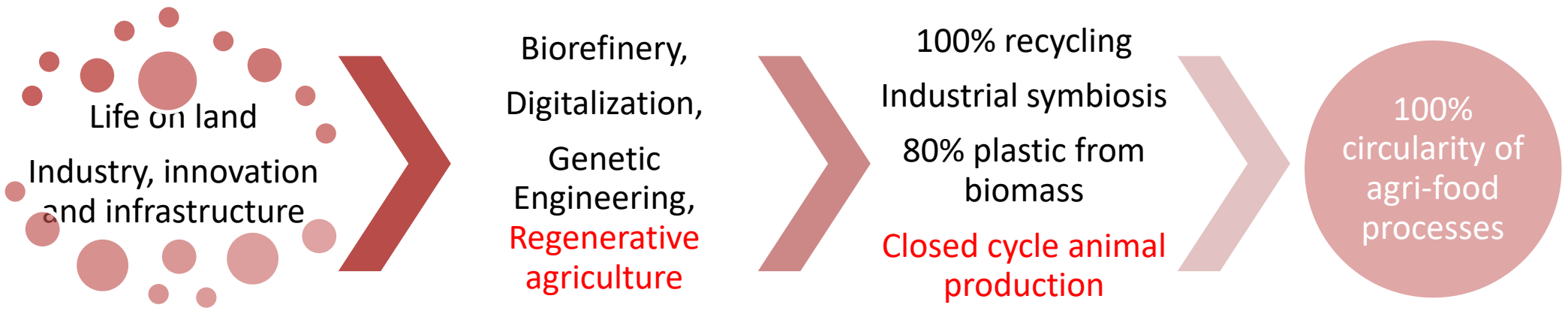
Biomass production within planet boundaries

Zero waste

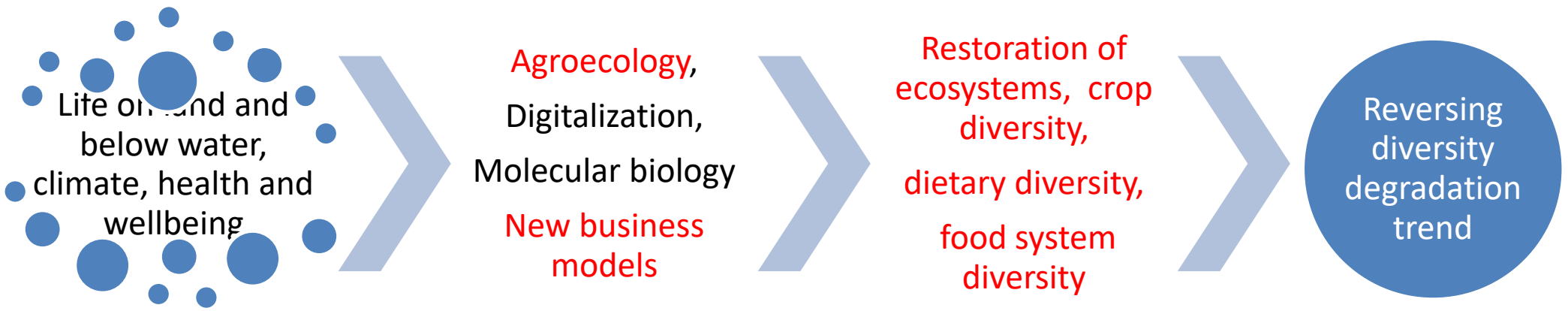
Exporting sustainable surpluses

Sustainable diets for all

Transition 2: Full circularity of food systems



Transition 3: Reversing diversity degradation trend



What is the role of Organic Farming?

- 1980-2000: resistance
- 2000-2010: niches of innovation
- 2010-2020: system innovation
- 2020 - ?

Ecological challenges

CIRCULARITY

REGENERATIVE AGRICULTURE

SYSTEM APPROACHES

FUNCTIONAL AND RESPONSE DIVERSITY

RESILIENCE

Economic challenges

BUSINESS MODELS

FROM VALUE CHAINS TO FOOD SYSTEMS

DATA ECONOMIES

ETHICS AND ACCOUNTABILITY

RESILIENCE

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Thanks for your attention!

Gianluca Brunori

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