UN environment

International Resource Panel

AgriResearch Conference

Innovationg for the future of farming and rural communities

R&I LOOKING AHEAD TOWARDS MORE RESILIENT AND DIVERSE FARMING SYSTEMS

Brussels, May 3rd 2018

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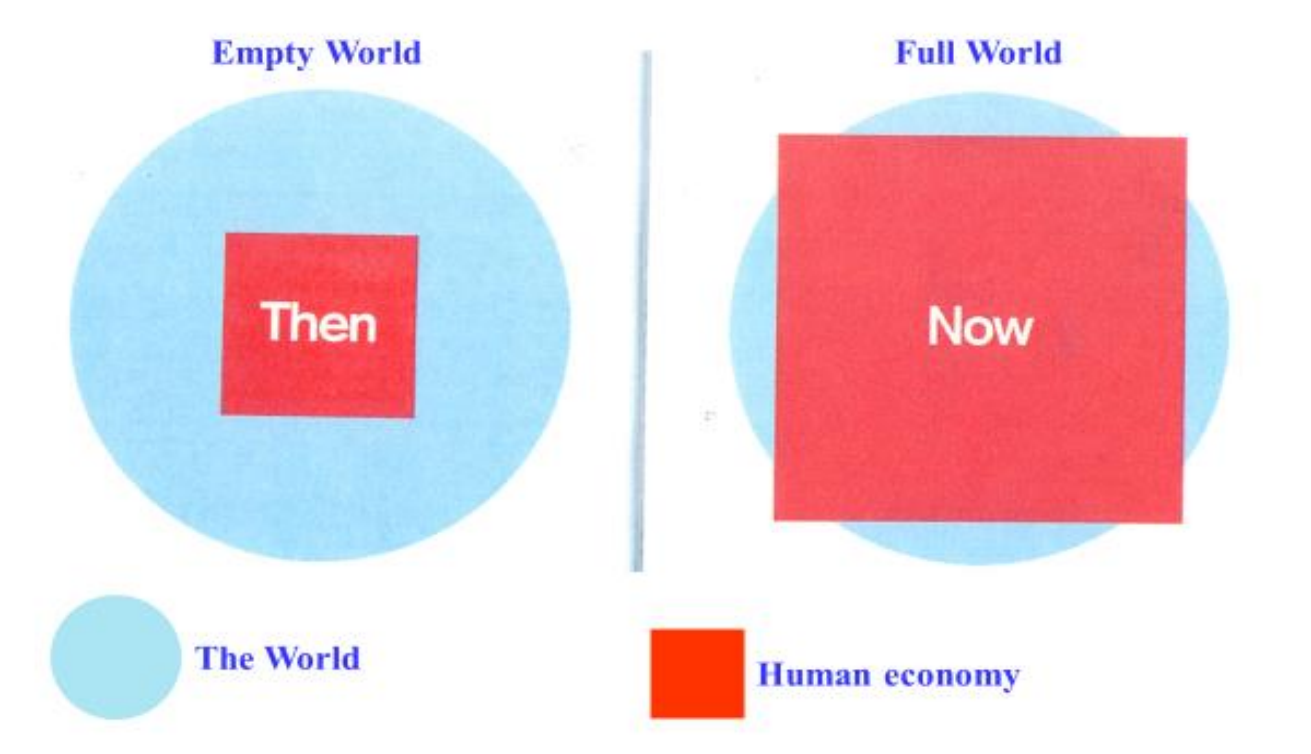
OUR WORLD AND OUR ECONOMY

Signed by over 15000 scientists from 184 Countries on 13.November 2017

- *„Humanity has failed to make sufficient progress in generally solving these foreseen environmental challenges, and alarmingly, most of them are getting worse.“*
- *„Especially troubling is the current trajectory of potentially catastrophic climate change due to rising GHGs from burning fossil fuels, and agricultural production – particularly from farming ruminants from meat consumption.“*
- *From 1992 humanity has: „unleashed a mass extinction event, the sixth in roughly 540 million year, wherein many current life forms could be annihilated or at least committed to extinction by the end of this century.“*

EMPTY WORLD AND THE FULL WORLD

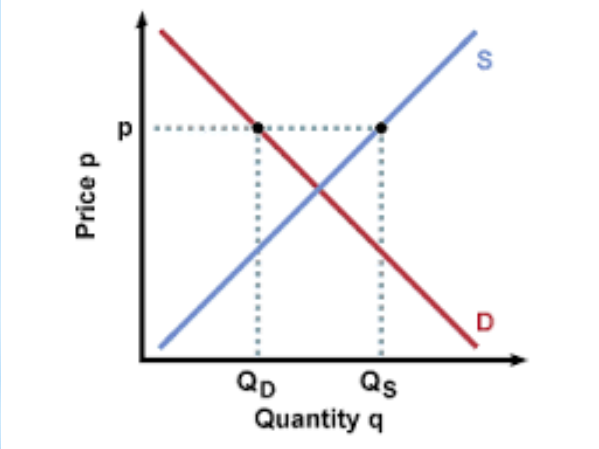


Source: Club of Rome: Simplified after Herman Daly

- *For the first time in a human history we face the emergence of a single, tightly coupled human social-ecological system of planetary scope. We are more interconnected and interdependent than ever.*
- *Our individual and collective responsibility has enormously increased.*

Price Signals:

Finacial Capital Overvalued
Human Capital Undervalued
Natural Capital not Valued



Market

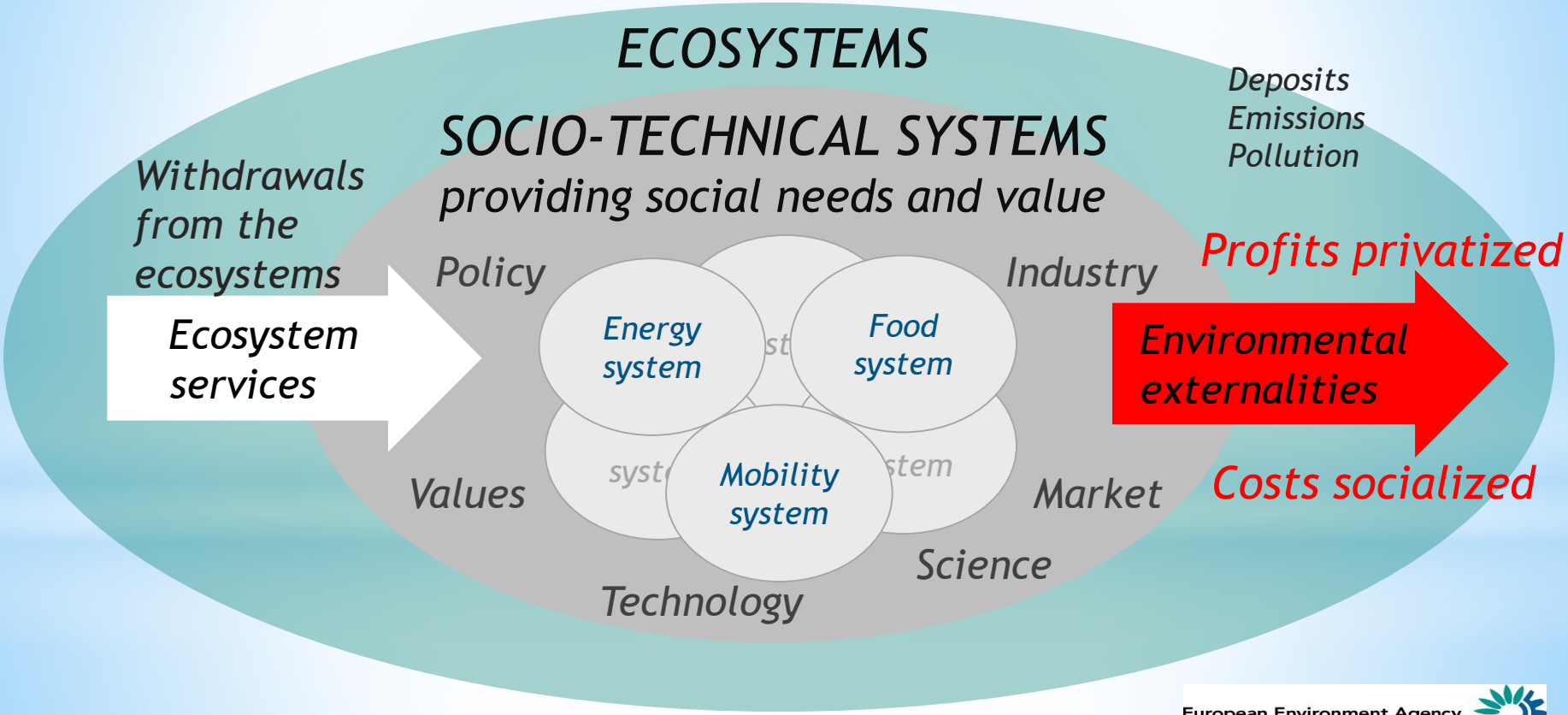
Producers/Consumers
Rational Behaviour

Economic model

Inbuilt Economic, Social, Environmental Inbalances

LIVING WELL WITHIN ECOLOGICAL LIMITS

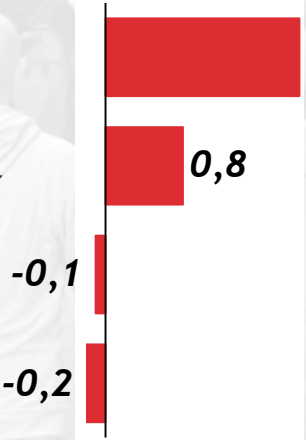
ECONOMIC SYSTEM FUNCTION OF ECOSYSTEM



European Environment Agency

MEASURES OF SOCIETAL DEVELOPMENT THAT INCLUDE NATURAL CAPITAL DEPLETION GROW MUCH SLOWER THAN GDP

Progress per capita[3], globally, 1990-2010, real terms



Considerations

	Capital		
	Economic	Social	Natural
Gross Domestic Product	✓		
Human Development Index	✓	✓	
Genuine Progress Indicator[1]	✓	✓	✓
Inclusive Wealth Index[2]	✓	✓	✓

1 1990-2005, as later data not available globally,
2 IWI exists in two versions, one unadjusted, and one where adjustments are made for environmental damage, oil capital gains, and total factor productivity. The adjusted version is shown here,
3 Global population growth was 1.6 percent per year during the period
SOURCE: UNEP (2014a), Kubiszewski et al. (2013)

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It is not helping if you are walking faster,

if you are walking in the wrong direction!

OUR COMMITMENT AND OUR OBLIGATION

THE GLOBAL GOALS

For Sustainable Development

2018 Annual Meeting

***Tim Benton**: "The food system is not a business and it has no CEO. Yet the facts stand for themselves: the food system is unequal, unsustainable, unstable, and in need of transformation. And it needs everyone – all stakeholders – to take action."*

Implementing the agreed SDGs

Overarching Narrative for all:

Managing and speeding up the transition to the sustainable food system

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FOOD SYSTEMS DIFFER WIDELY GLOBALLY

often interconnected - and depending on the same resources

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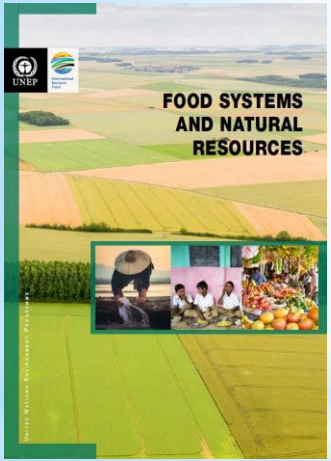

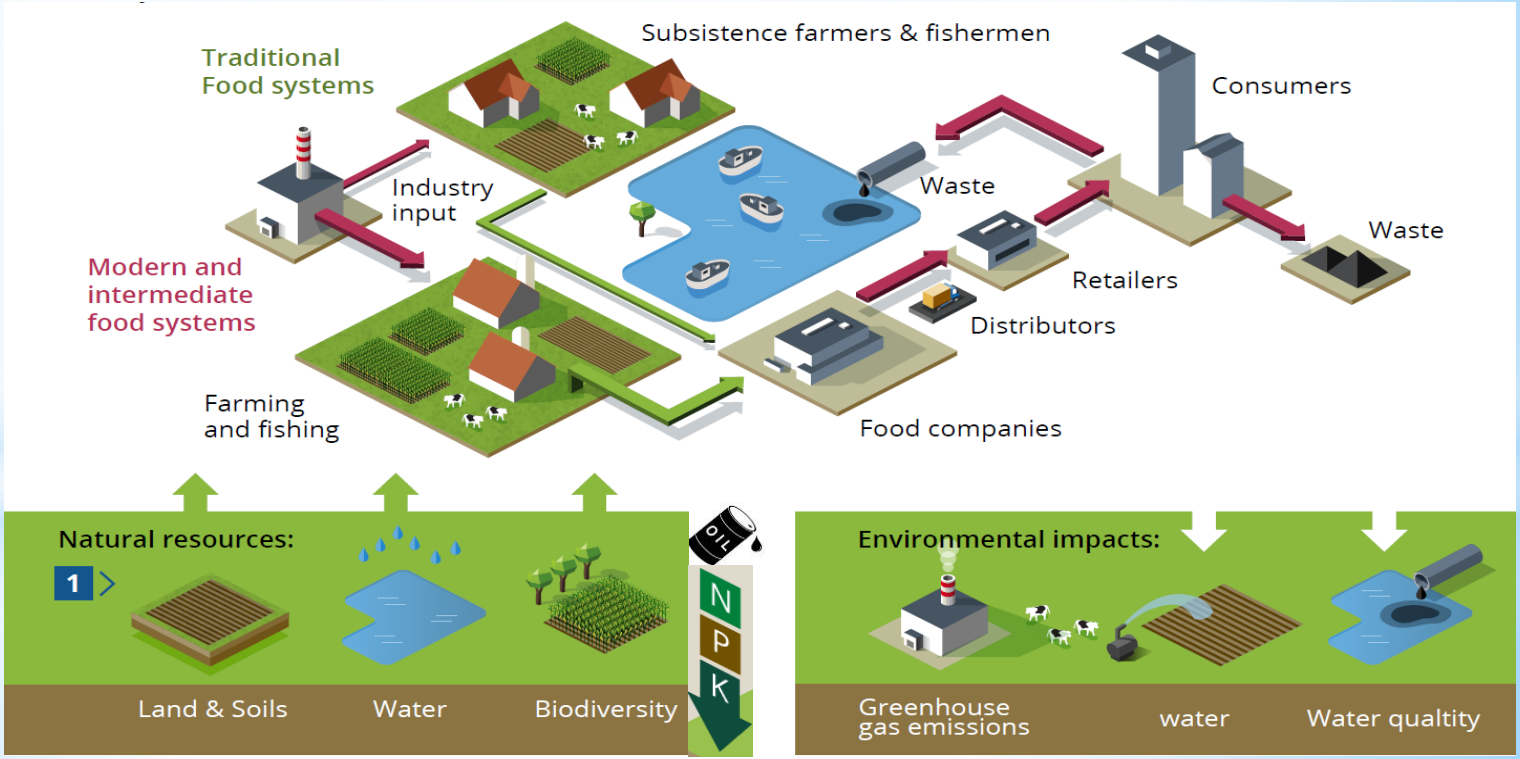

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CONCENTRATION OF POWER IN THE WESTERN-TYPE FOOD CHAIN

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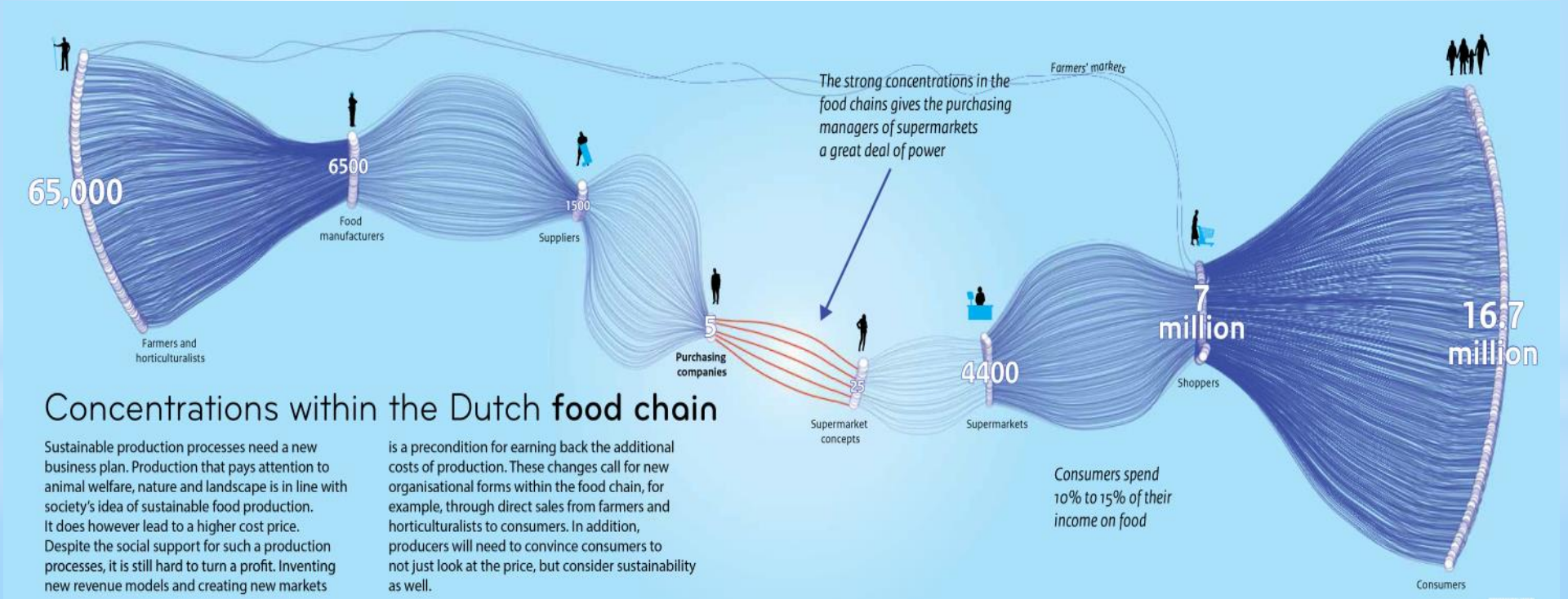

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CRITICAL SHIFTS TOWARDS RESOURCE-SMART FOOD SYSTEMS

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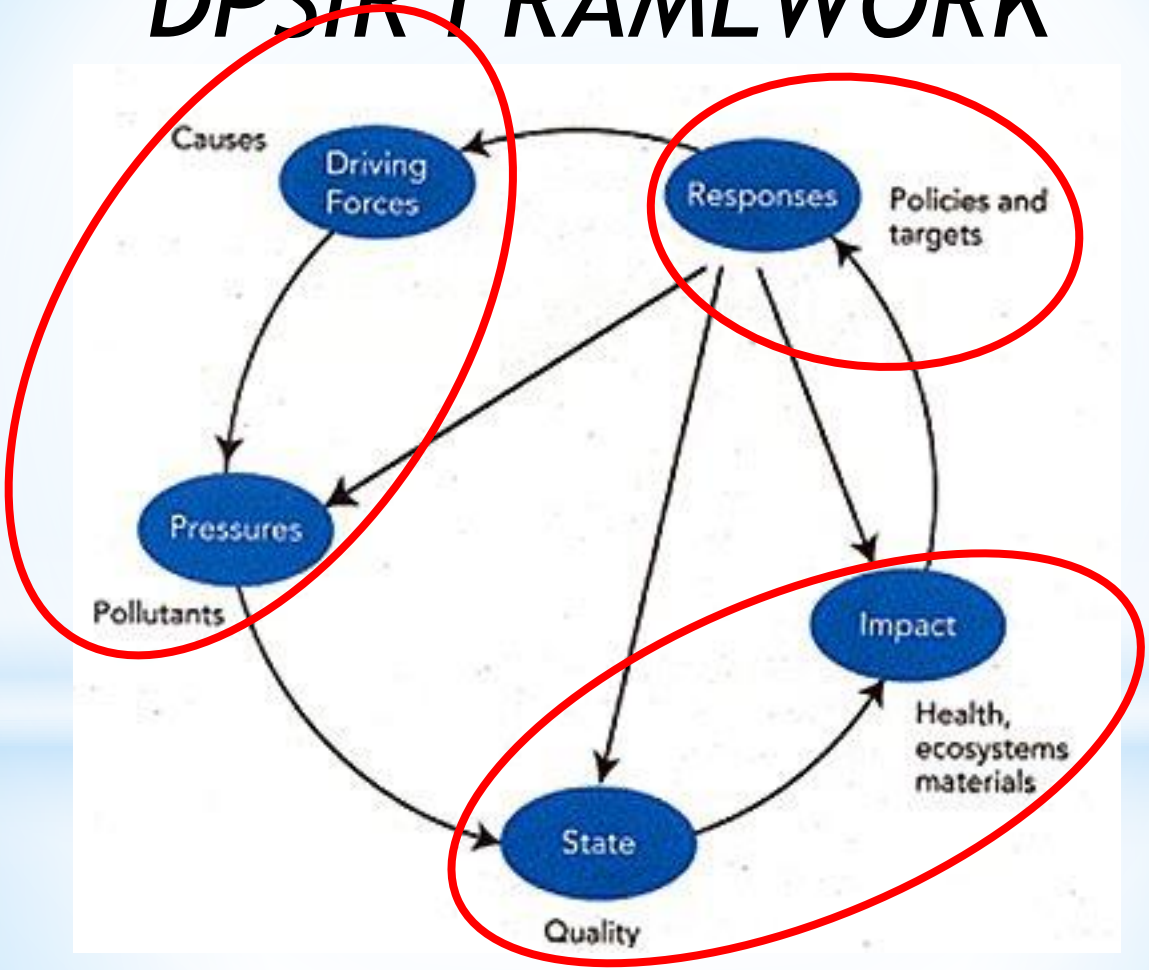
1. *Reduce food loss and waste.*
2. *Reorient away from resource-intensive products such as meat, 'empty calories' and ultra-processed food; and rethink the 'food environment' (the physical and social surroundings that influence what people eat, especially relevant in urban areas) to facilitate consumers adopting more healthy and sustainable diets.*
3. *Reframe thinking by promoting 'resource-smart food systems' and search for linkages to new dominant values such as 'wellbeing' and 'health'.*
4. *Reconnect rural and urban, especially in developing regions, where urban actors (e.g. supermarkets) could invest in regional supply chains and improve the position of smallholders.*
5. *Revalue the pricing of environmental externalities, reinforce legislation to prevent pollution and other forms of environmental degradation and remove subsidies that provide disincentives for better resource efficiency.*
6. *Reconnect urban consumers with how their food is produced and how it reaches their plates, and inform them about both the health and environmental consequences of dietary choices, protect peri-urban zones around cities and use them for local food production.*
7. *Research the current functioning of the local, national or regional food systems and their impact on national resources.*
8. *Reconnect mineral flows between urban areas and rural areas, as well as between crop and livestock production.*
9. *Reform policies on land and water rights, develop and implement policies at all levels of governments (multilateral, national and local) to enable better resource management and encourage synergistic 'adaptive governance' by the wide range of non-state actors within the food system.*
10. *Reinvigorate investment in rural infrastructure, education, training, technology, knowledge transfer and payments of environmental services.*
11. *Research and innovate, to decouple food production from resource use and environmental impacts, and to replace certain inputs (such as pesticides) with ecosystem services.*
12. *Rebuild feedback loops by functional and informative monitoring and reporting, at various levels, such as countries, cities and companies.*

DPSIR FRAMEWORK



1

Agricultural activity is linked to wider broken Food Systems. It is necessary to put on the holistic glasses and reframe thinking by promoting 'Resource-Smart Food Systems'…

and re-focus from impacts and state on drivers and pressures leading to them.

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- *Population growth (2050 – 9.7 billion)*
- *Per capita consumption growth (up to 3 billion consumers moving from low to middle class consumption till 2030)*
- *Nearly 800 million people are hungry, over 2 billion suffer from micronutrient deficiencies*

2

Food security and sustainable intensification remains very important

- *But credibility of that approach would be increased if food waste (we throw away 1/3 of all food produced), obesity (2 billion people are obese), livestock-cereals balance … are addressed in the first place*

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In the mid-term, except in specific cases, resource shortage will not be the core limiting factor of our (economic) development …

… but the environmental and health consequences caused by this excessive and irresponsible use of resources will be!

- *“The case of meat” - in the EU:*
  - *Per capita intake of protein is 70% higher than recommended maximum dietary intake (RMDI) recommended by WHO*
  - *Per capita intake of saturated fats is 42% higher than RMDI*
  - *Average consumption of red meat in more than twice as high as the RMDI recommended by world cancer research found*
- *“The Case Against Sugar”*

3

We should focus more on a consumer as a driver for change – healthy food

- *Consumer should play the same role in food system as citizens do in climate change - empowering an educated and informed consumer*
- *Strengthen health perspective*
- *Dietary changes should improve diet sustainability*
- *Deepen the knowledge on the role of chemicals (pesticides, herbicides, endocrine disruptors, chemical cocktails …), antibiotics …*

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Trade-offs among various SDGs are unavoidable. Sustainable Consumption and Production is the most efficient strategy to mitigate trade-offs and create synergies to resolve the development and environmental challenges articulated in the SDGs.

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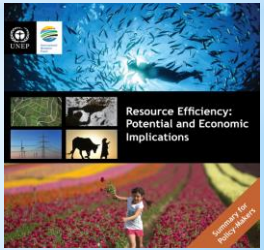
DISCONNECT BETWEEN RESOURCE EFFICIENCY AND ECONOMIC EFFICIENCY

There is a need to rebalance the cost of labour, and the costs of resources and pollution by pricing externalities, using taxation and other incentives for actors to favour paying for labour to save materials, rather than for materials to save labour



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DECOUPLING IS THE IMPERATIVE OF MODERN ENVIRONMENTAL AND ECONOMIC POLICY

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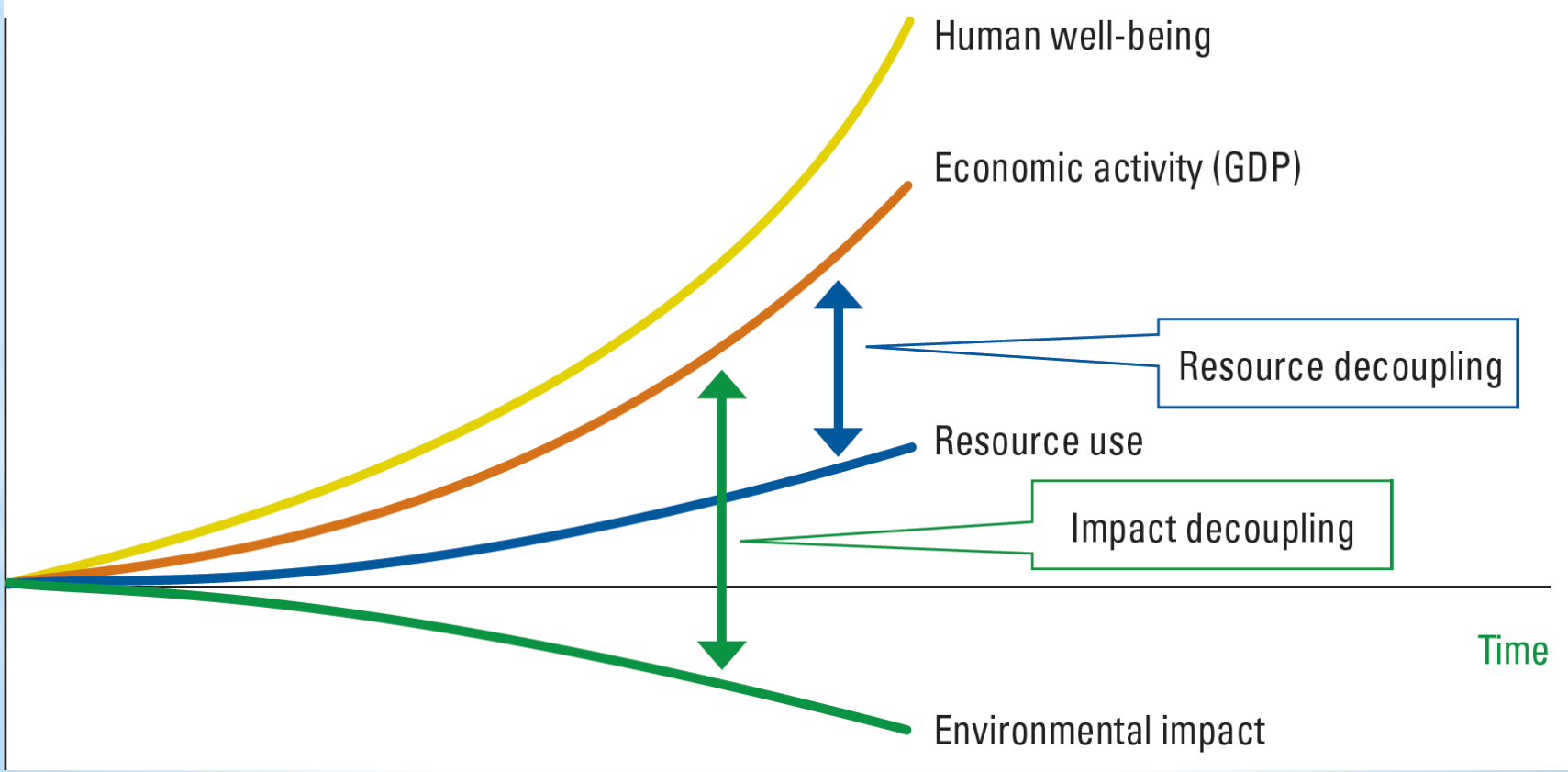
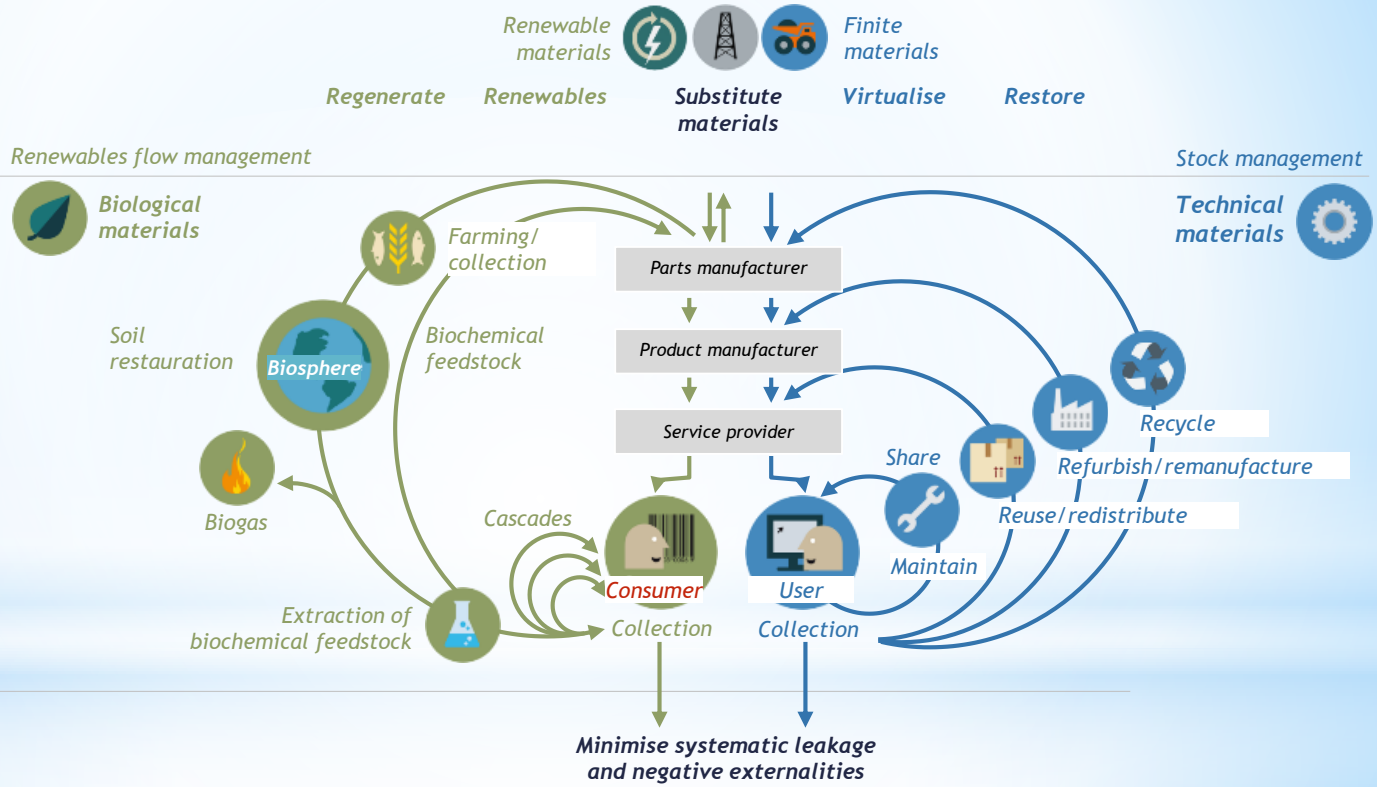


OUTLINE OF A CIRCULAR ECONOMY SYSTEM

Principles

1. *Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows*
2. *Optimise resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles*
3. *Foster system effectiveness by revealing and designing out negative externalities*



Source: Ellen MacArthur Foundation; McKinsey Center for Business and EnvironmenStiftungsfonds für Umweltökonomie und Nachhaltigkeit;

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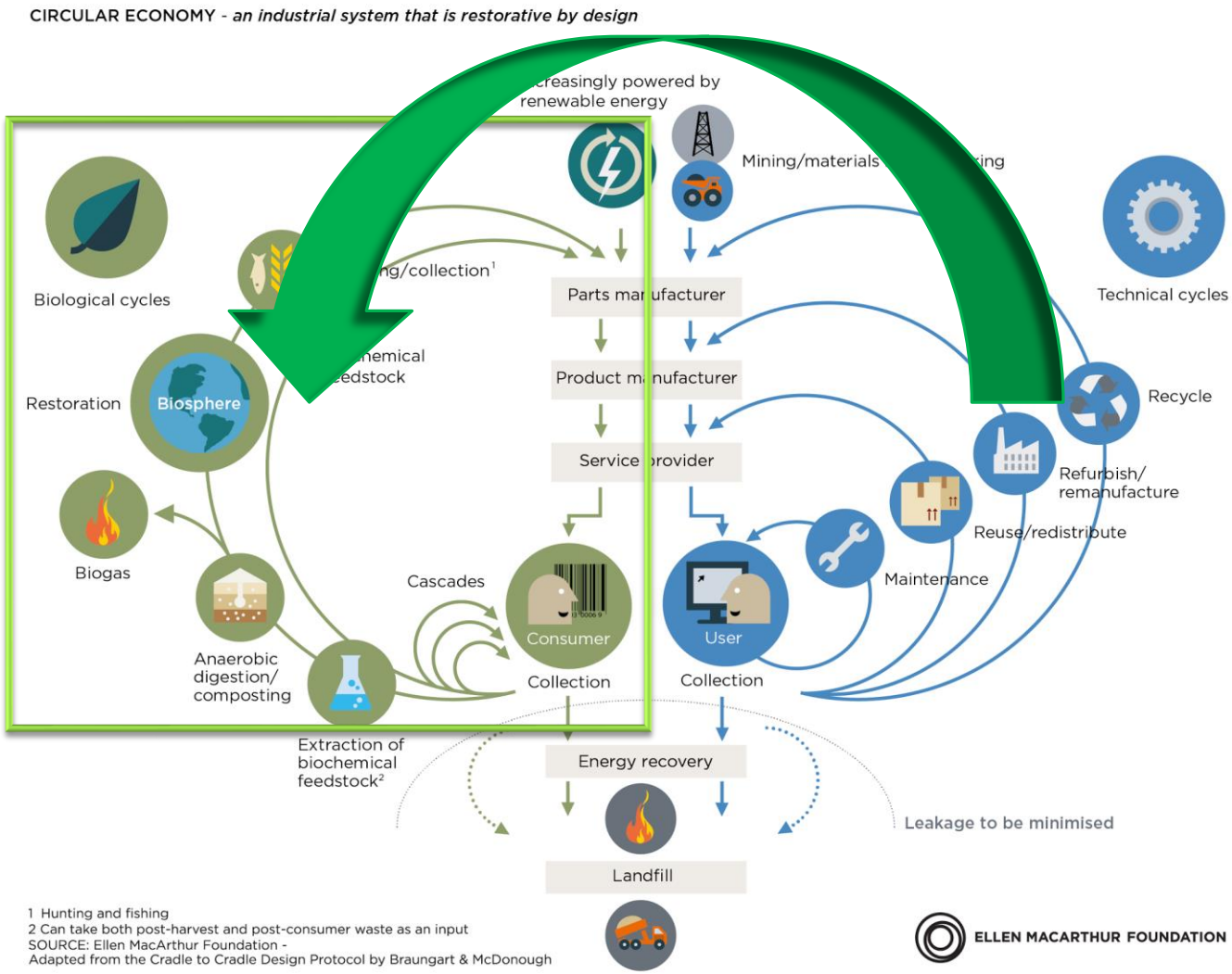
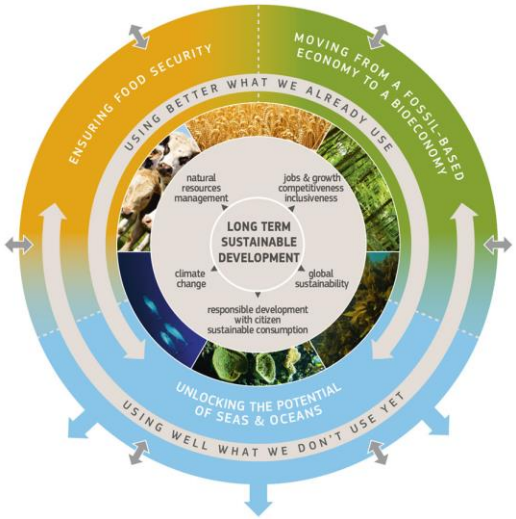
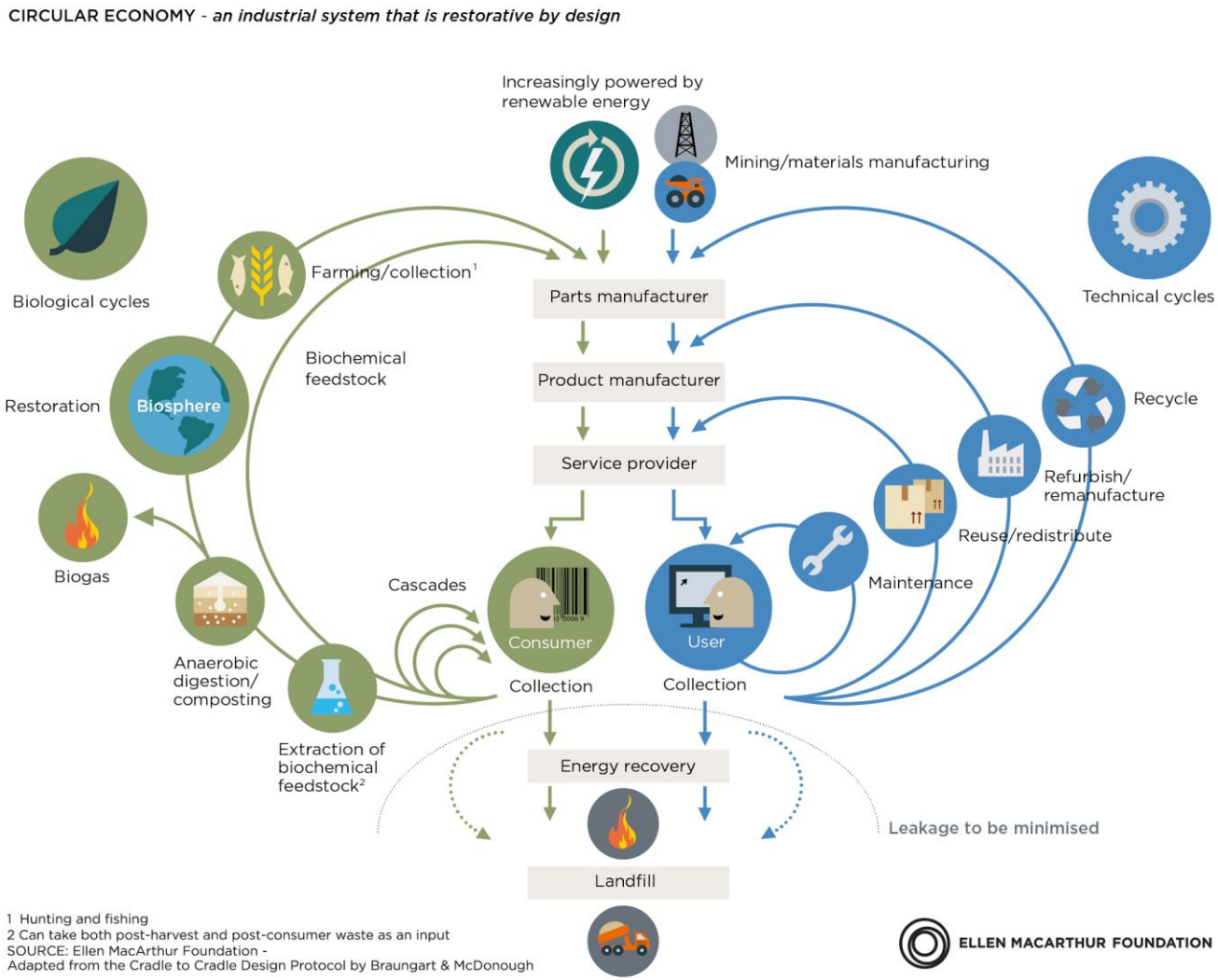
BIOECONOMY AND CIRCULAR ECONOMY





CIRCULAR ECONOMY AND CLIMATE CHANGE



CLIMATE

CARBON MANAGEMENT

LAND

WATER

ENERGY

MATERIALS

DECOUPLING

RESOURCES

4

Improve resource management and exploit all possibilities offered by the Circular Economy and Bio-economy approach

- *Improve nutrient management*
- *Focus on local, seasonal production*
- *Use more urban and peri-urban solutions*
- *Develop new business models (precision farming+)*
- *Support research and innovation*
- *Use the potential of digital transformation*
- …

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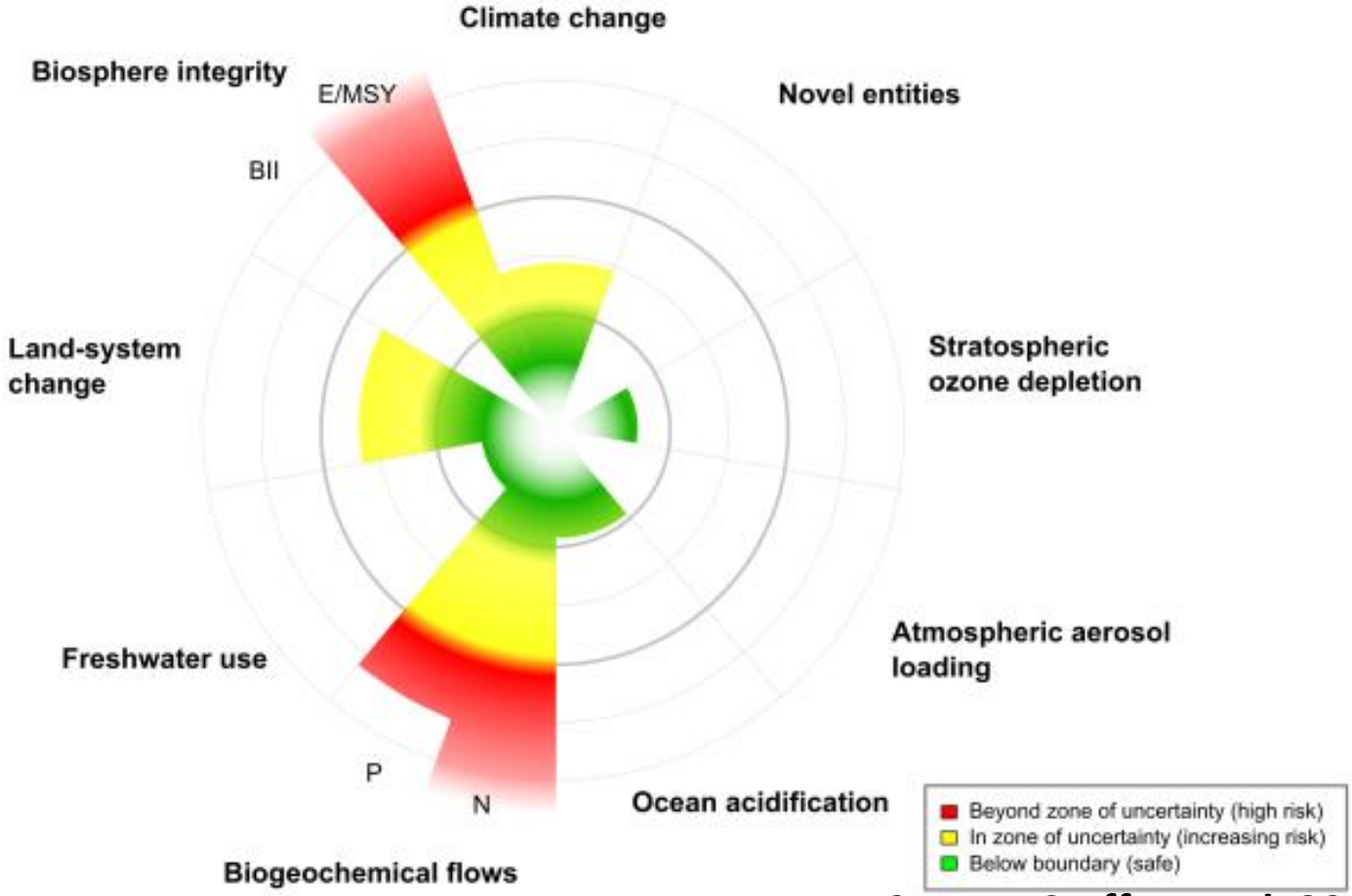
"PLANETARY BOUNDARIES"



Source: Steffen et al. 2015

5

There is no healthy food and no healthy future without healthy ecosystems

- *Climate change*
- *Biodiversity loos*
- *Water and air pollution*
- *Soil quality*
- *Plastics ….*

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System Initiative on Environment and Natural Resource Security

World Economic Forum – Annual Meeting 2018

- *The challenge seems to not be one of not inadequate scientific evidence anymore; rather it is one of cooperation and implementation.*
- *There is a deepening perception of a lack of synchronicity between economic and environmental policy responses to global risks.*

- *People who directly or indirectly manage our food systems are also the largest group of natural resource managers in the world. They are critical agents of change.*
- *Agriculture community should recognise the seriousness of the problems and actively engage in necessary transition. Others should recognise farmers as partners for change.*
- *Farmers were in the past acting in good faith. They need and deserve public support for necessary transition and make it fair and possible.*

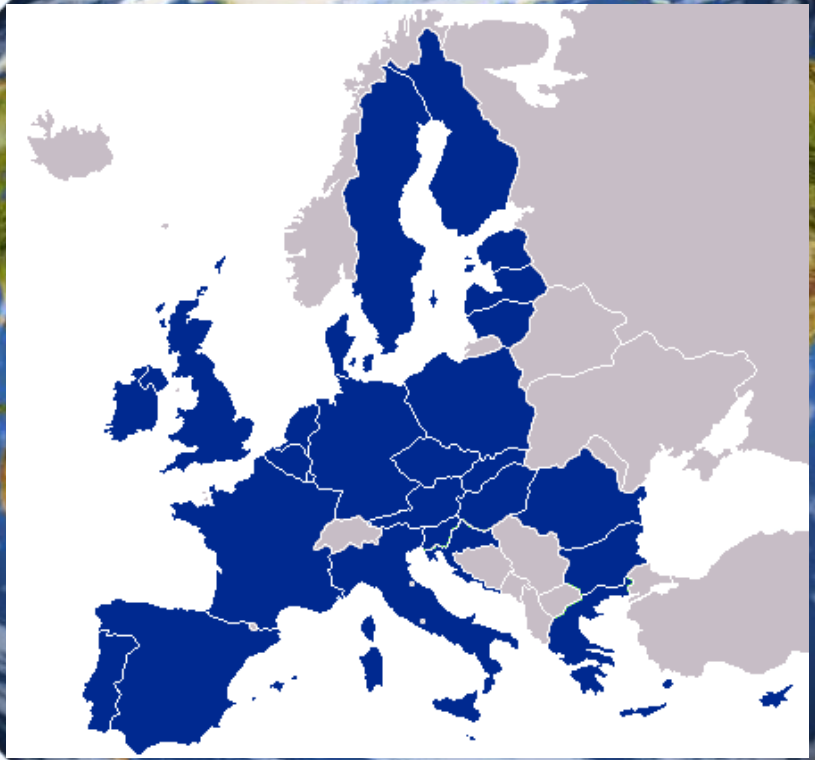
RESPONSIBILITIES OF THE ACTORS IN THE FOOD SYSTEM

Aligned with the SDGs

From being a pure product or service providers managing the risks of their farm, company … through profit maximisation

To socially responsible producers managing also the risks of the society

GOVERNANCE



REDEFINING SOVEREIGNTY

- *Existing 1992 RIO conventions (Climate change – UNFCCC, Biodiversity – CBD, Combating Deforestation – UNCCD)*
- *There is a need for a new instrument, connecting existing conventions to resource management and to the system change of current economic model, enabling the removal of existing market and trade barriers*
- *2018 FFA - Prof. Lousie Fresco proposed International Treaty (Convention, Panel) on Food and Agriculture*

Natural Resources Management Convention

6

Improve governance and strengthen the international dimension and cooperation, also in the R and I. This is essential for the successful transition to the sustainable food system.

- *Partnership for change with farmers*
- *Reconnect local, national and regional, as well as rural and urban*
- *Strengthen global governance*
- *Create Science Based Targets (Global Commons Initiative – GEF/IUCN) for land, water, materials - mirror the climate approach, FOLU coalition …*

Signed by over 15000 scientists from 184 Countries on 13.November 2017

- *We require the help of the world community of scientists -natural, social, economic, political;*
- *We require the help of the world's business and industrial leaders;*
- *We require the help of the world's religious leaders; and*
- *We require the help of the world's peoples.*
- *We call on all to join us in this task.*

7

European Commission and EU member states have unique chance and responsibility to align all existing funding instruments and policies (CAP, FP9, Cohesion policy, Trade …) to support this transition.

2030 Agenda for Sustainable Development
Next MMF likely for the period 2021-2027

AND IF THIS WILL NOT BE DONE …

The time is gone, the song is over,

Thought I'd something more to say

(Pink Floyd)

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THANK YOU

For more information

Contact IRP Secretariat at resourcepanel@un.org

Visit our website at http://resourcepanel.org/