UN environment

SYSTEMIQ

International Resource Panel

Circular Economy STORY

Policy perspective

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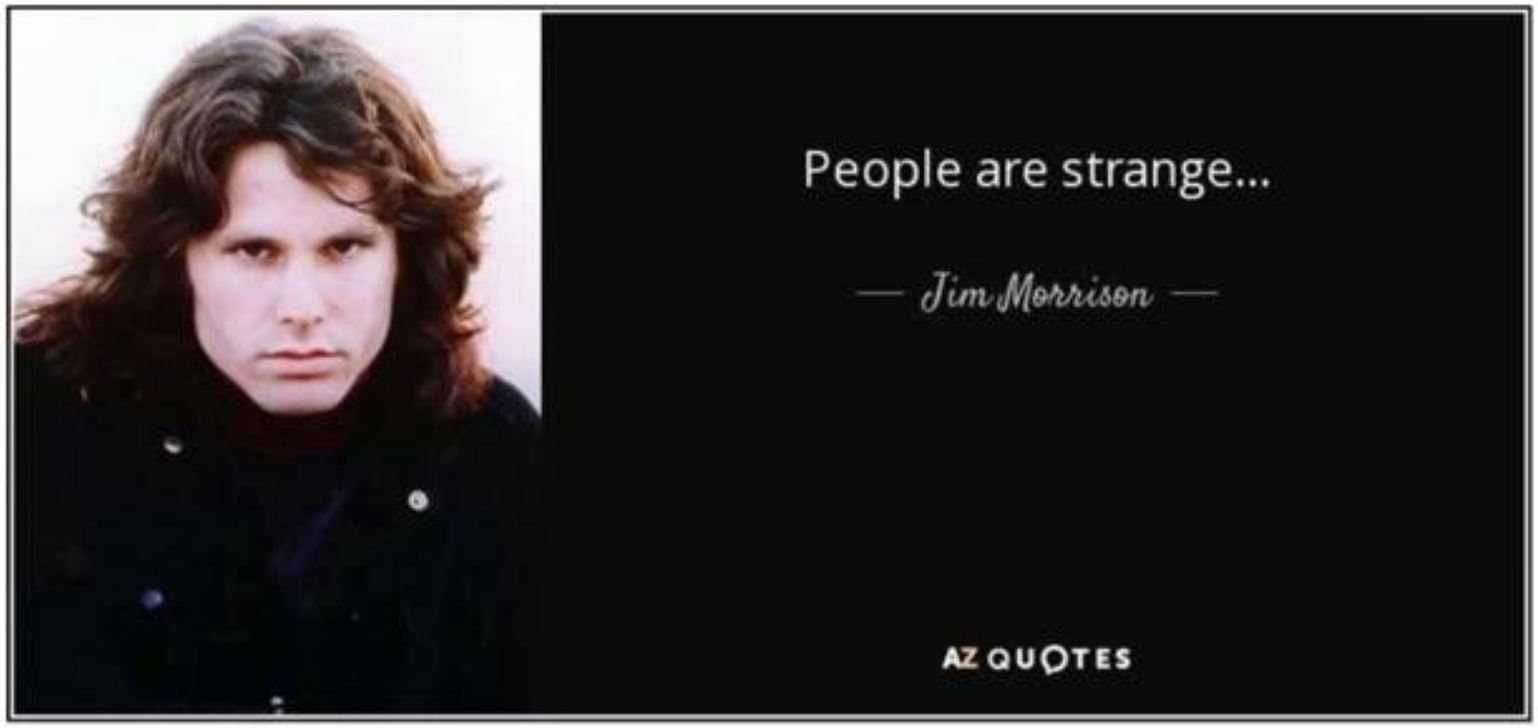
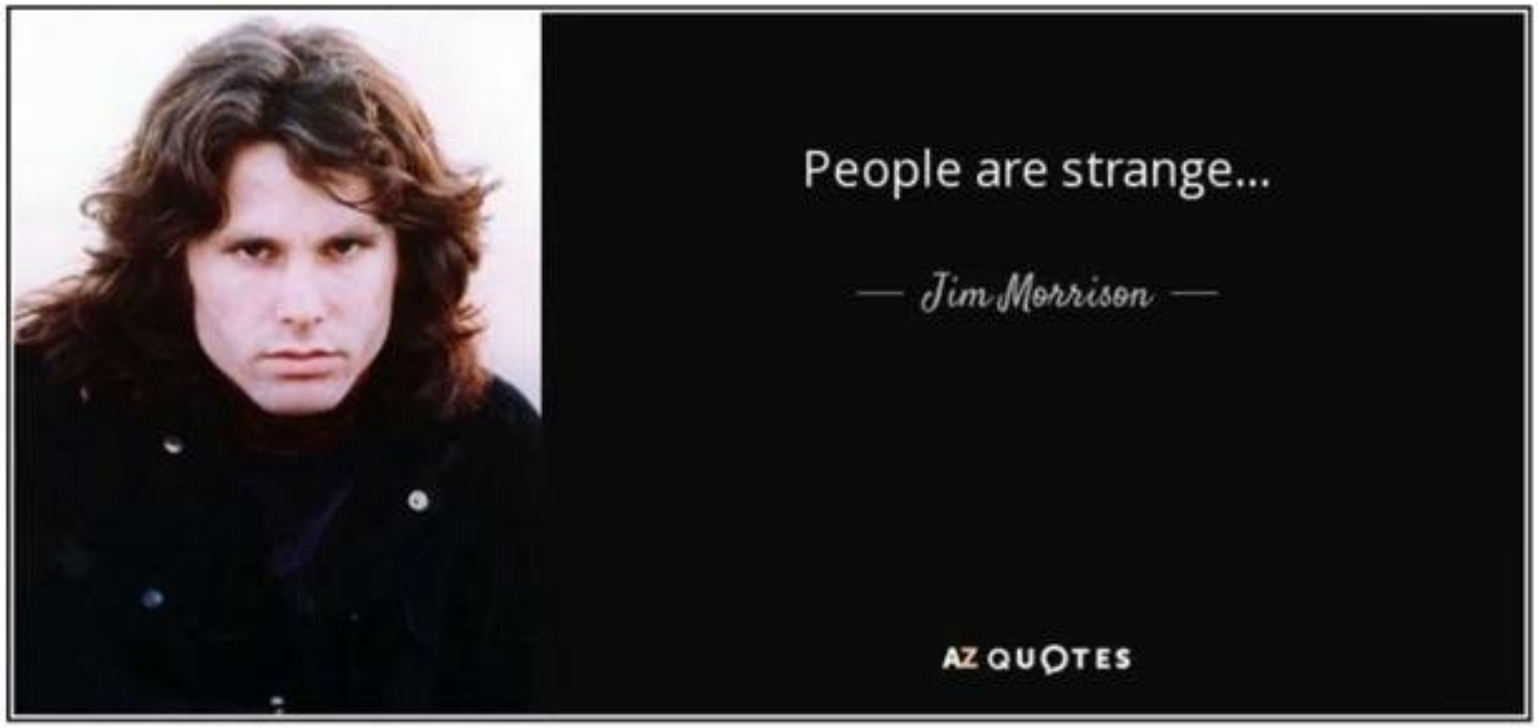
Brussels, 04th February 2021

THE IMPORTANCE OF RESOURCE MANAGEMENT

World - Quo Vadis Humanity


People are strange...
— Jim Morrison —
AZ QUOTES



We want changes …

but we do not want to change

Let’s start the story in my home country Slovenia

Let's start the story in my home country Slovenia

Slavoj Žižek

"It is clear that we are approaching the ecological and digital apocalypse … but we should not loose nerves."

"Everything under heaven is in utter chaos; the situation is excellent."

The taste of 21st Century

- *Population growth (2050 – 9.7 billion)*

The taste of 21st Century

- *The world's richest 1% have more than twice as much wealth as 6.9 billion people and the 22 richest men have more wealth than all the 326 million women in Africa*

The taste of 21st Century

- *We throw away one third of the food we produce*

The taste of 21st Century

- *More than 50% of urban fabric expected to exist by 2050 still needs to be constructed. 2011-13 China has used more cement than USA in 20th century*

The taste of 21st Century

- *Climate change experts warned us that emissions need to be about halved by 2030 to limit warming to 1.5˚C*

The taste of 21st Century

- *Biodiversity: Living Planet Index – 60% fall in just 40 years. Biomass of the mammals living in the nature has been reduced in recent decades for 82%*

The taste of 21st Century

- *A million of plastic bottles are bought every minute (9% of plastic recycled, 12% incinerated, 79% landfills).*

The taste of 21st Century

- *Health: COVID-19 forced world population and economy in a lock-down*

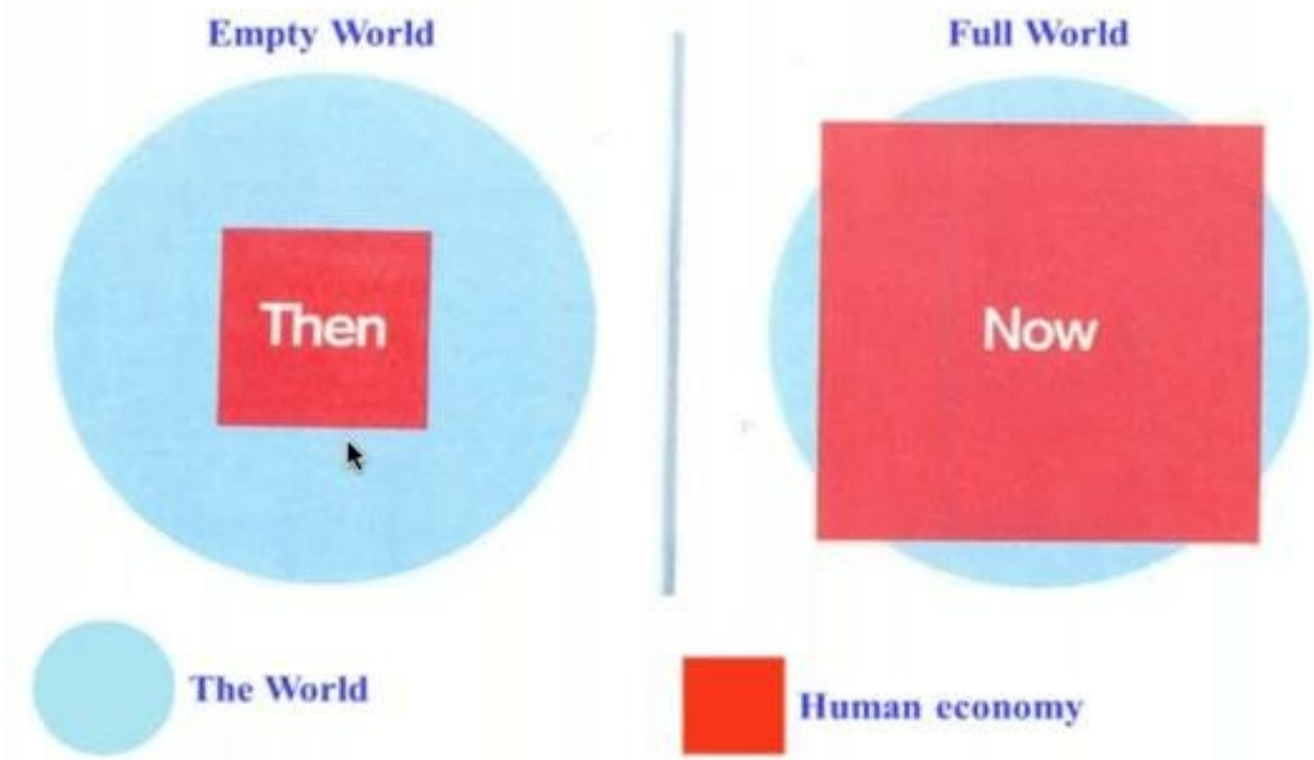
1 2 3 4 5 6

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.

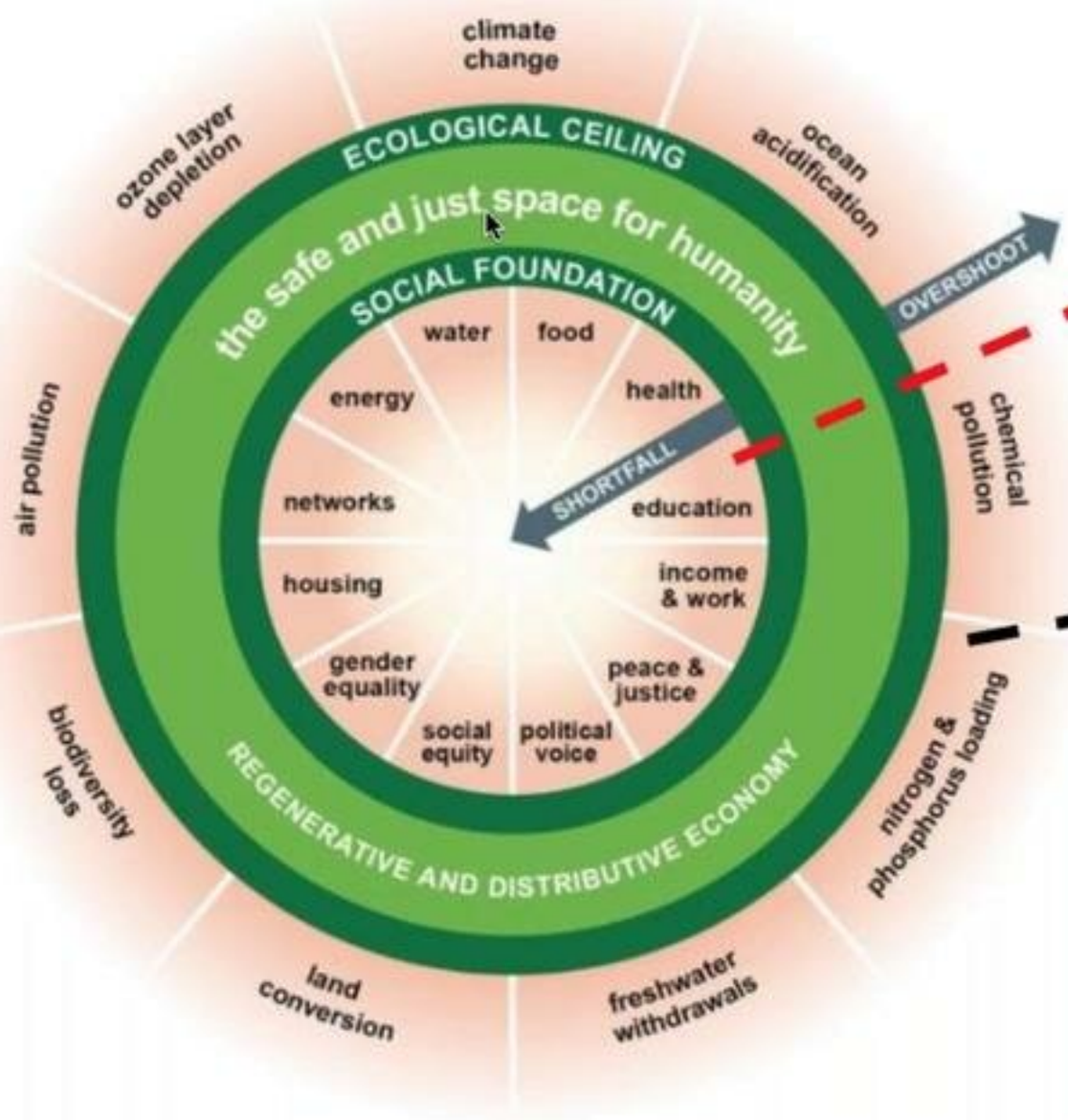
Empty World and Full World



Source: Club of Rome: Simplified after Herman Daly

Labour and Infrastructure limiting factors of human wellbeing → *Natural resources and Environmental sinks limiting factors of human wellbeing*

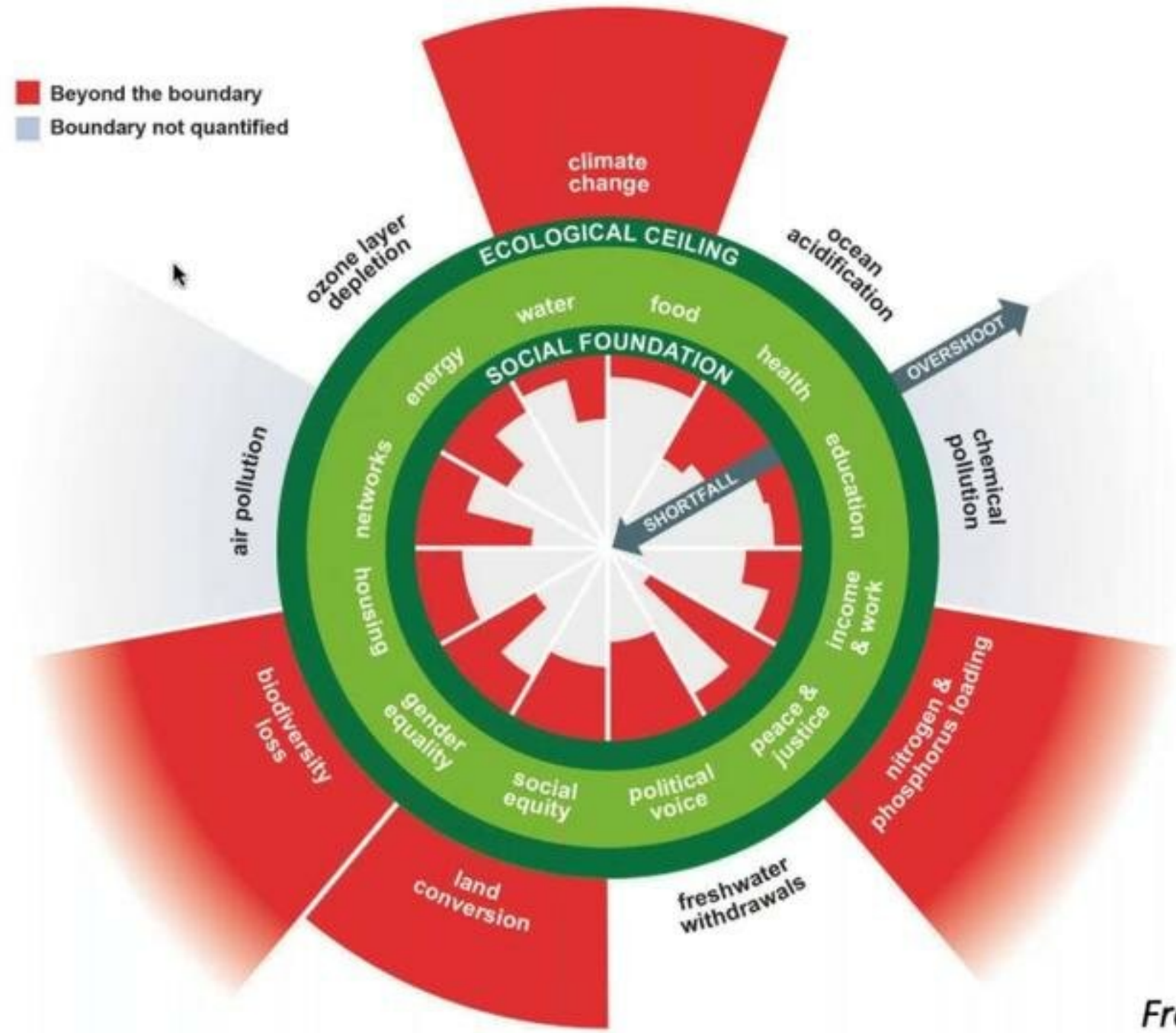
Safe Operating Space - "doughnut" perspective



Basis human needs incl. minimum requirements of resource supply

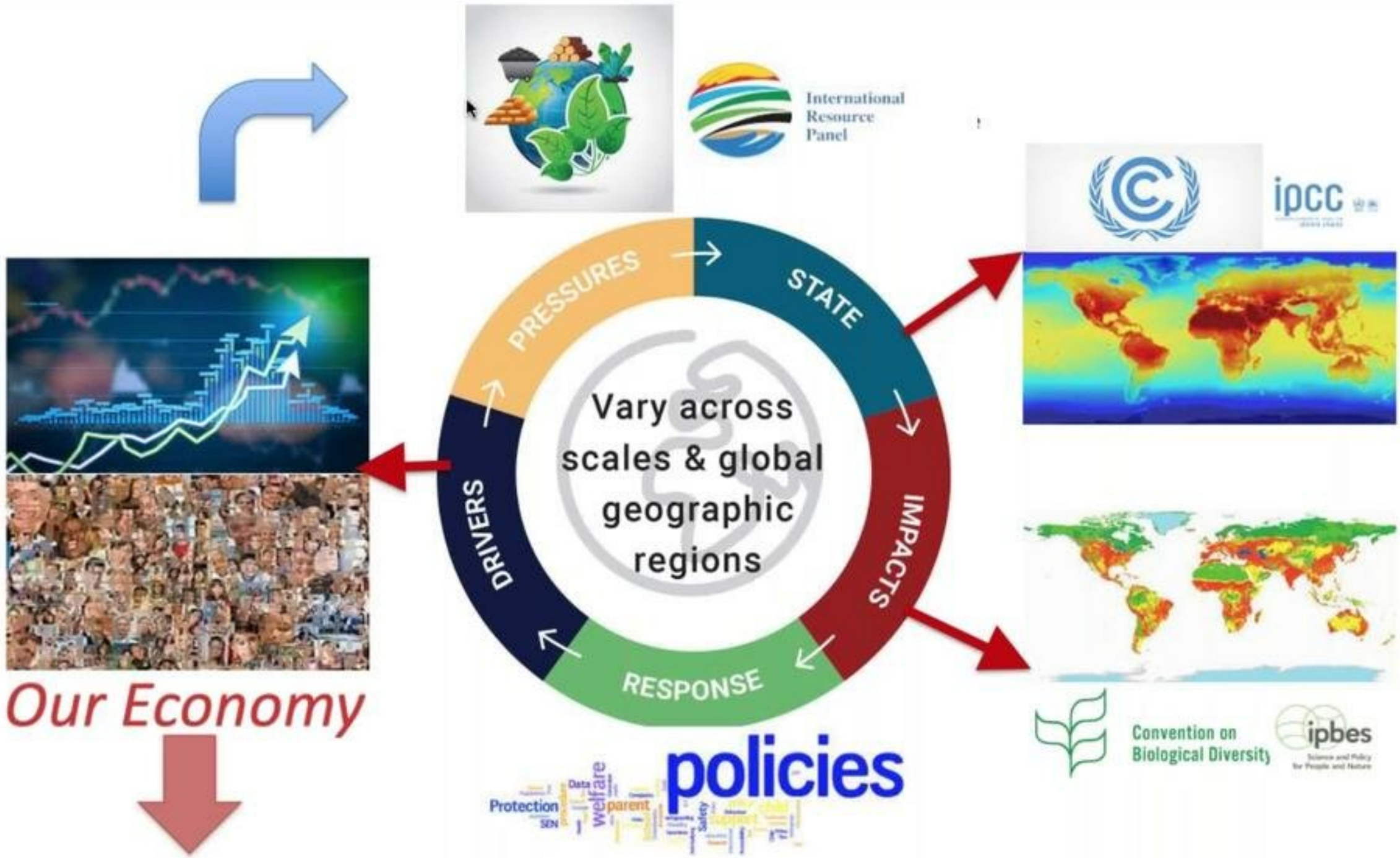
Outer limit by Planetary Boundaries

Adapted from Raworth 2017



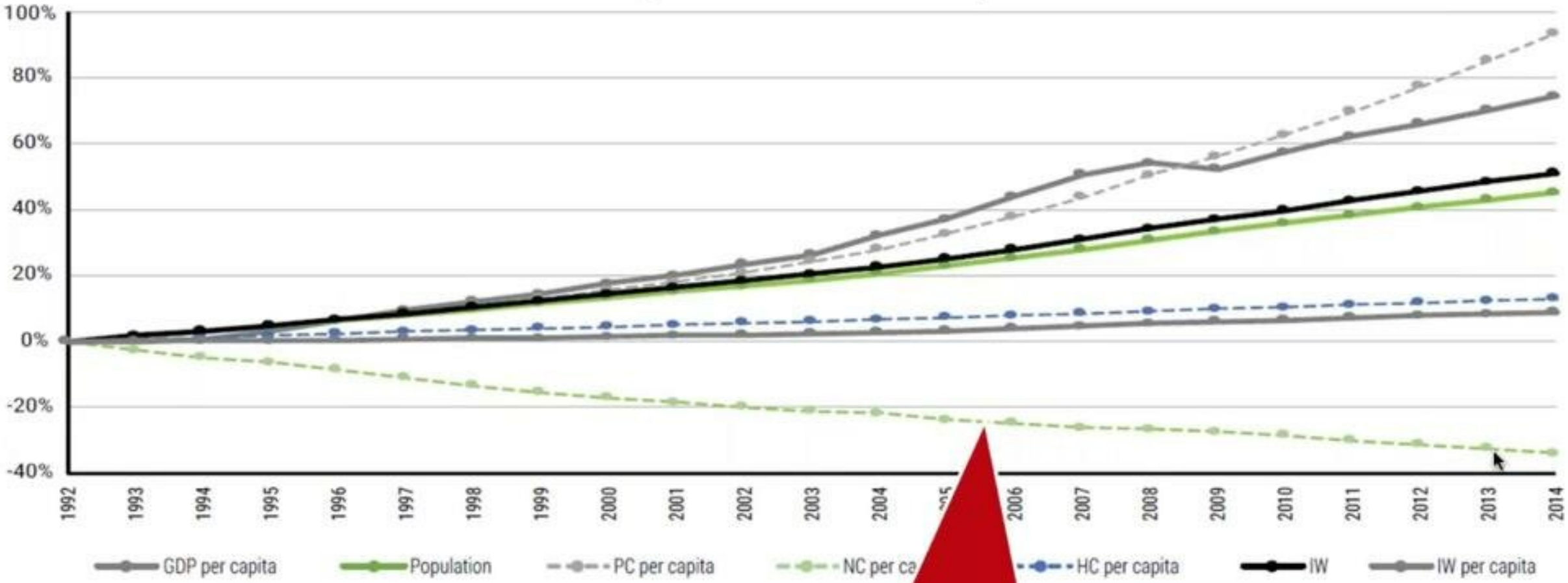
From Raworth 2017


PRESSURES
STATE
IMPACTS
RESPONSE
DRIVERS
Vary across scales & global geographic regions


International Resource Panel
ipcc
PRESSURES
STATE
IMPACTS
RESPONSE
DRIVERS
Vary across scales & global geographic regions
Our Economy
Convention on Biological Diversity
ipbes
policies
Protection
Data
welfare
parent
Safety

Inclusive Wealth (IW) Index (and its components) evolution - 1992 to 2014

Source: UN, 2018 Inclusive Wealth Report 2018



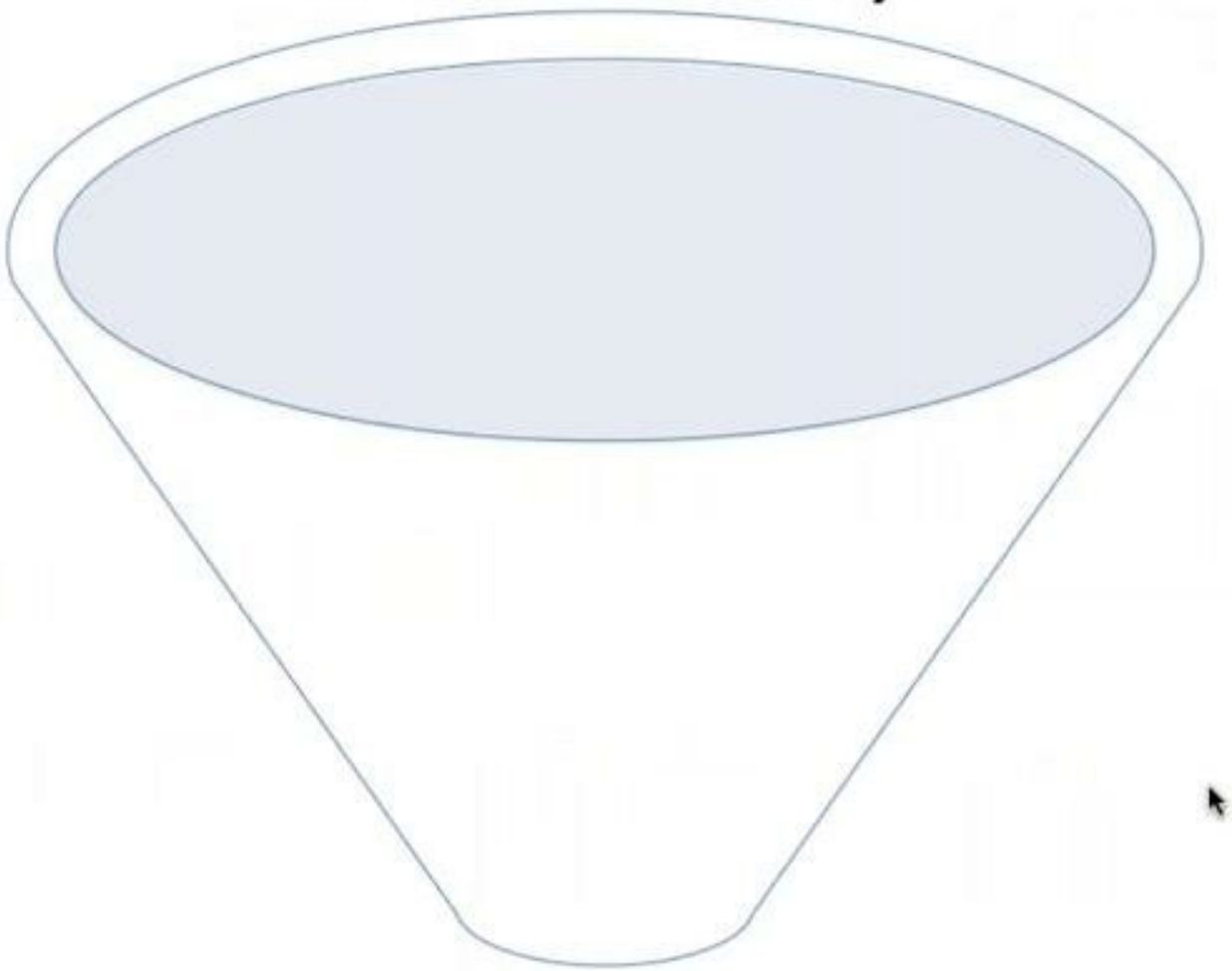
IW – Inclusive Wealth

PC – Production capital

HC – Human capital

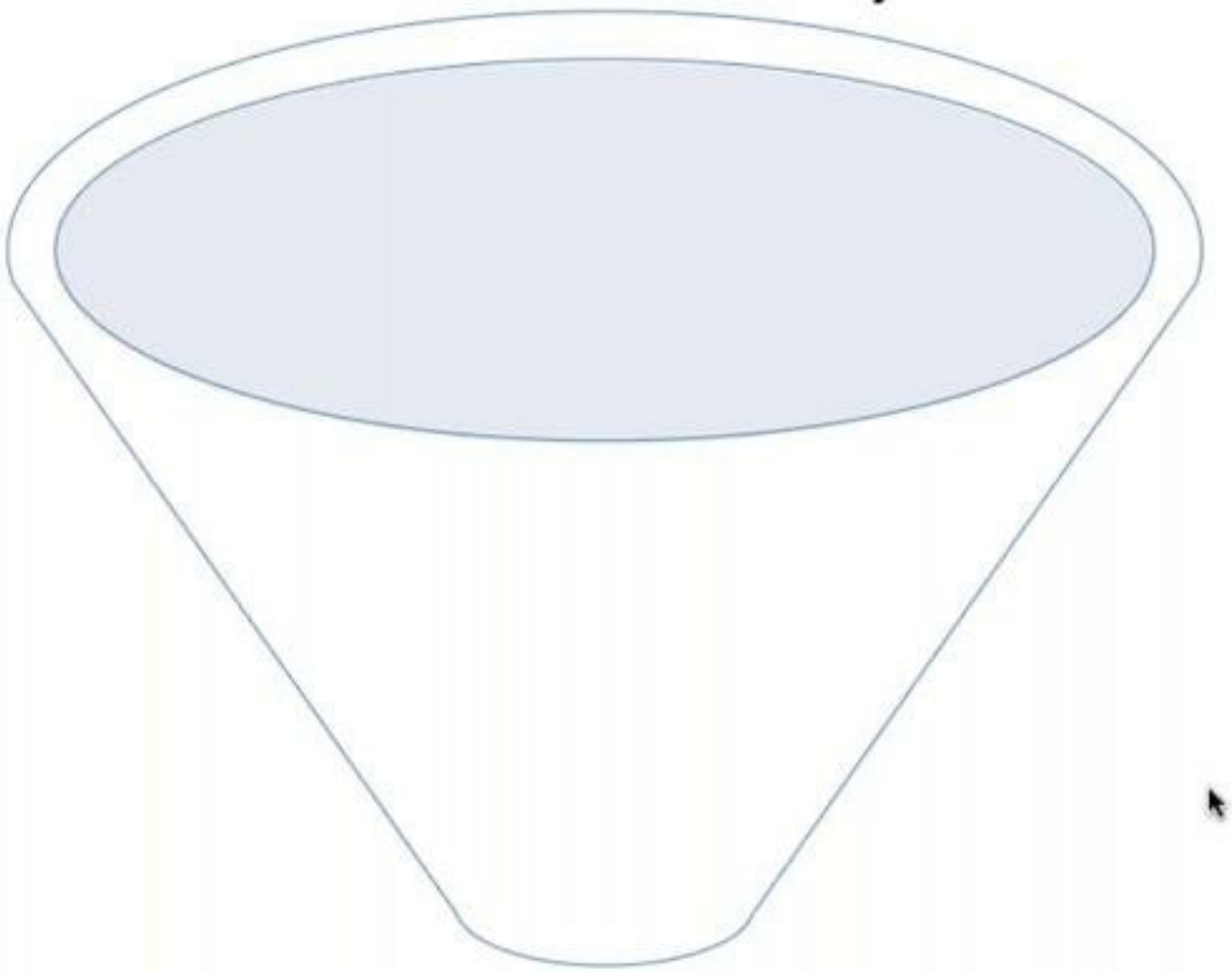
NC – Natural capital

Growth of GDP in the past decades has been achieved at the cost of depleting natural capital

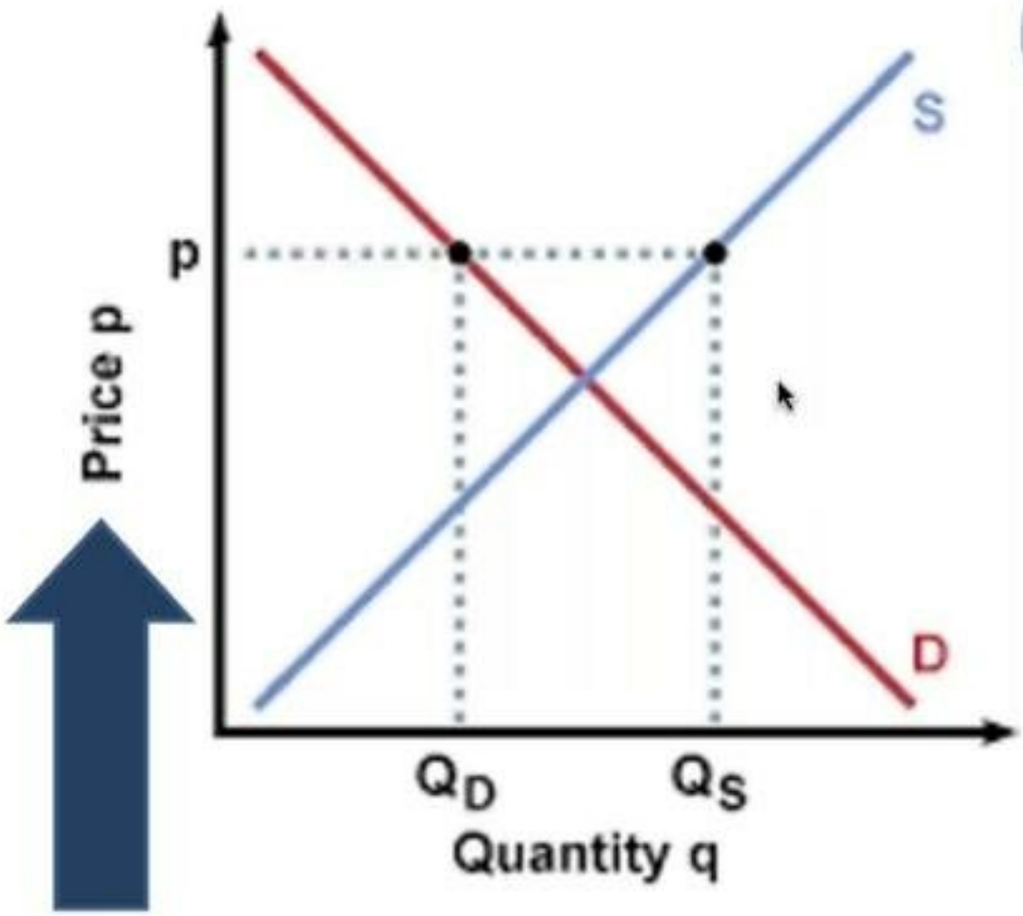

Market Economy

Producers/Consumers
Rational Behaviour

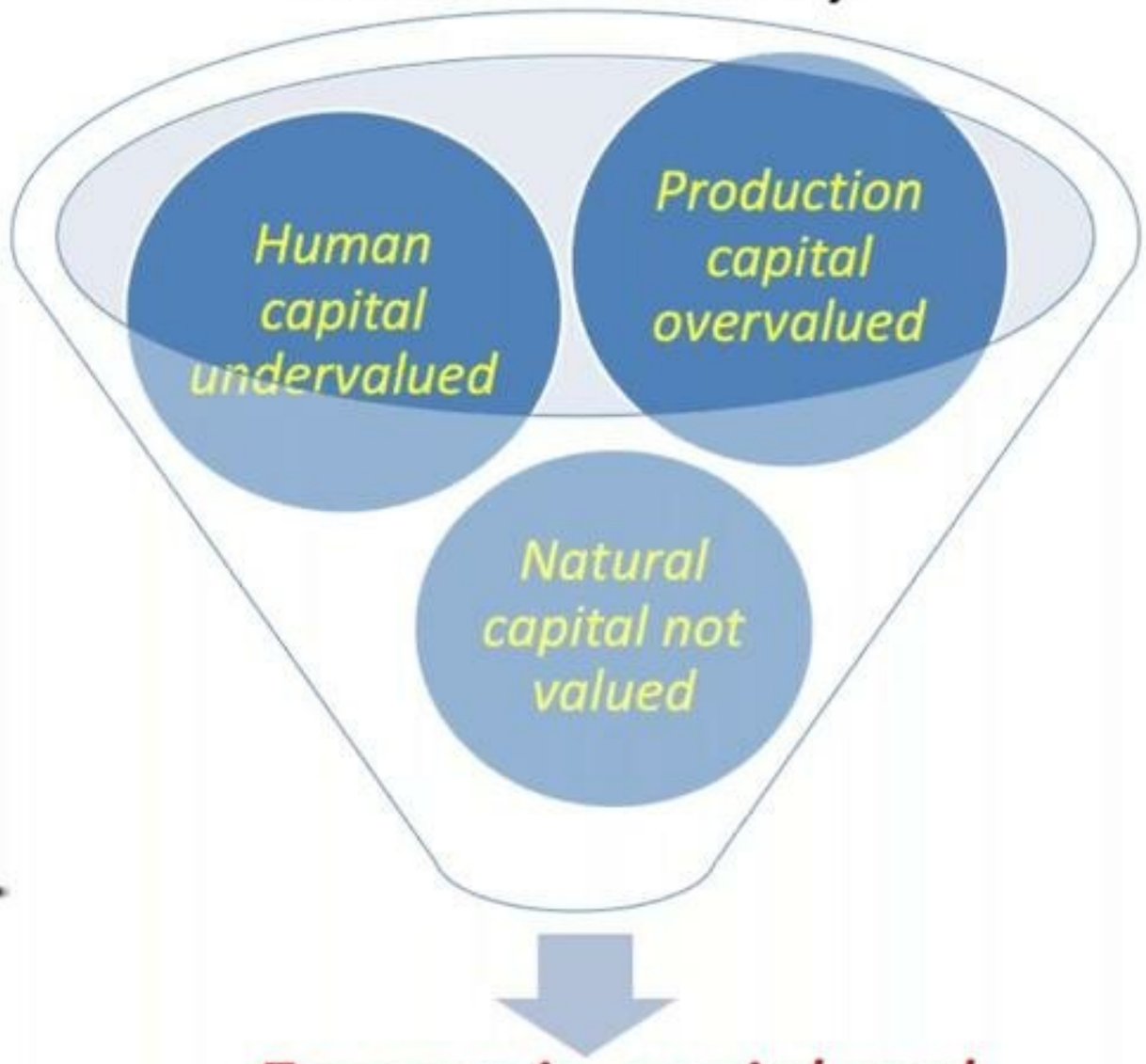
Market Economy



Producers/Consumers Rational Behaviour



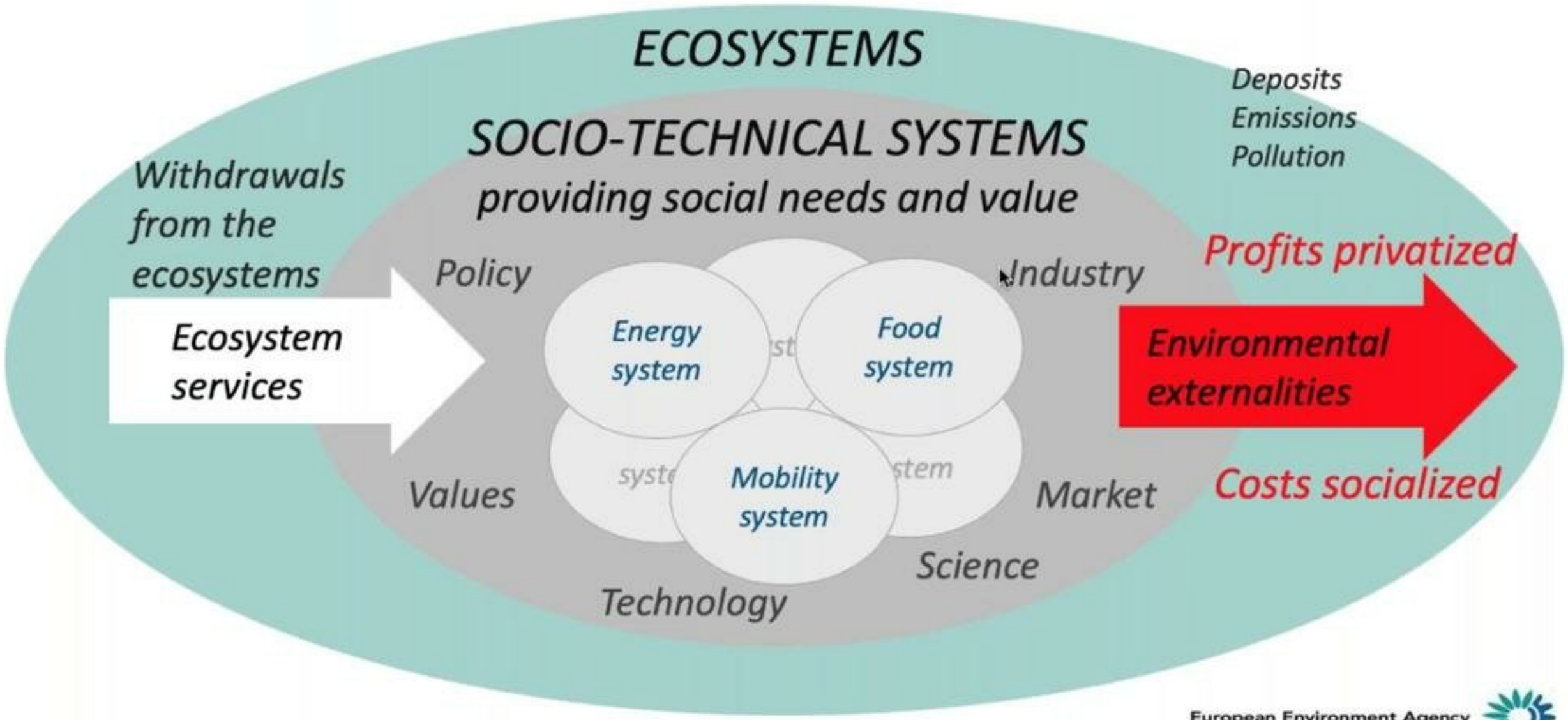
Market Economy



Economic, social and environmental (in)balance

LIVING WELL WITHIN ECOLOGICAL LIMITS

ECONOMIC SYSTEM FUNCTION OF ECOSYSTEM



European Environment Agency

Resources:

Provide the foundation for the goods, services and infrastructure that make up our current socio-economic systems

Biomass (wood, crops, including food, fuel, feedstock and plant-based materials)

Fossil fuels (coal, gas and oil)

Metals (such as iron, aluminum and cooper…)

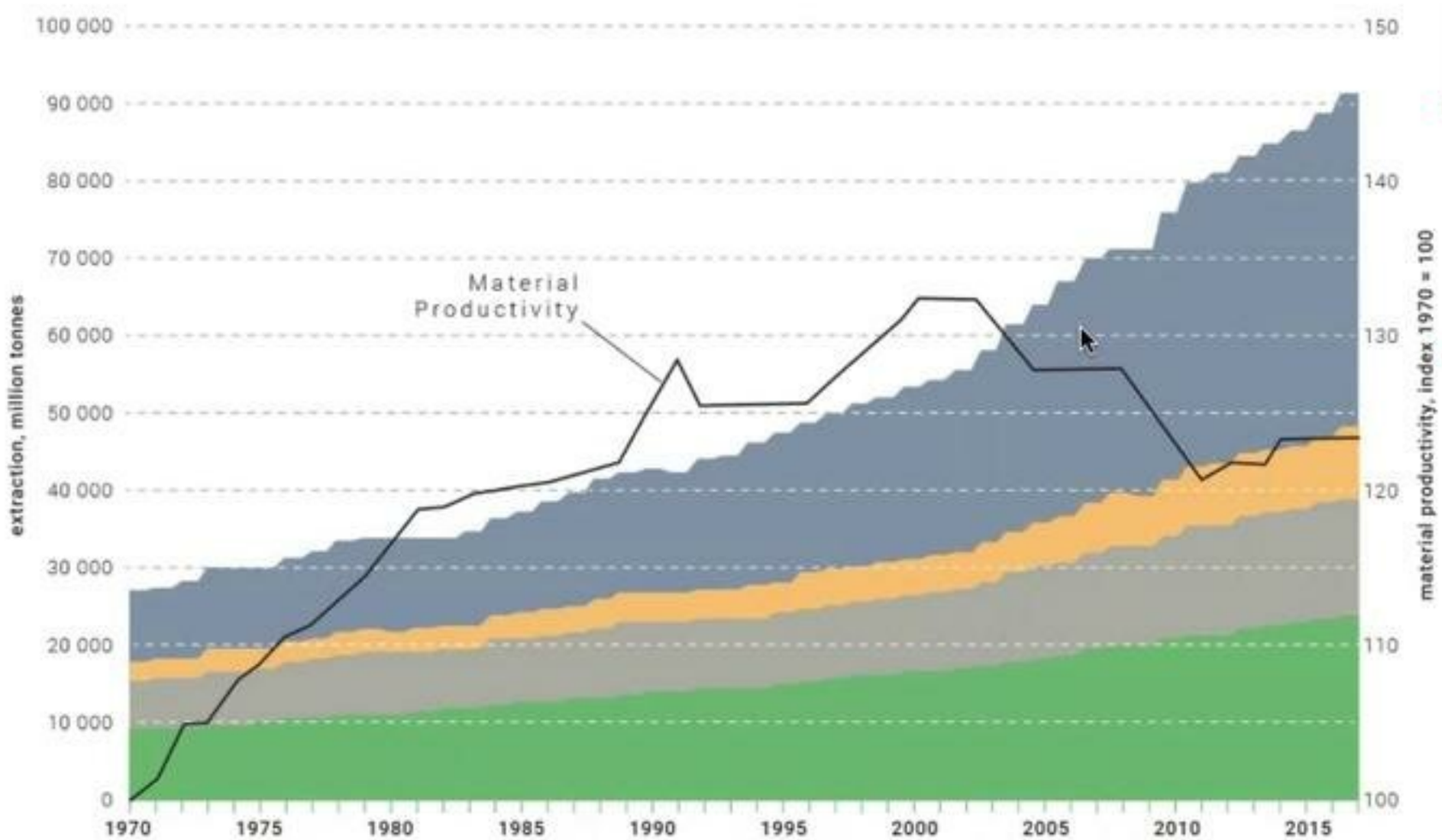
Non-metallic minerals (including sand, gravel and limestone)

Water and Land

International Resource Panel

Relentless demand: Global resource use, Material demand per capita and Material productivity

Global material extraction and material productivity, 1970 - 2017



- *Global resource use has more than tripled since 1970*
- *Global material demand per capita grew from 7.4 tons in 1970 to 12.2 tons per capita in 2017*
- *Material productivity started to decline around 2000 and has stagnated in the recent years*

Non-metallic minerals
Metals
Fossil fuels
Biomass

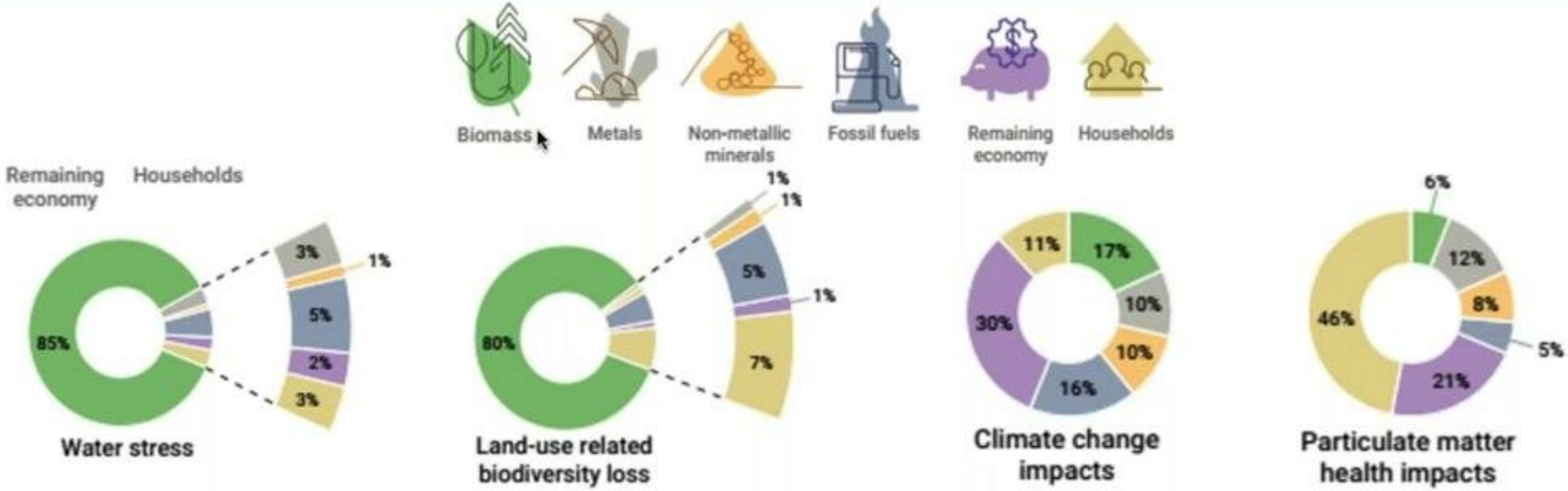
Environmental impacts in the value chain

resource extraction and processing phase

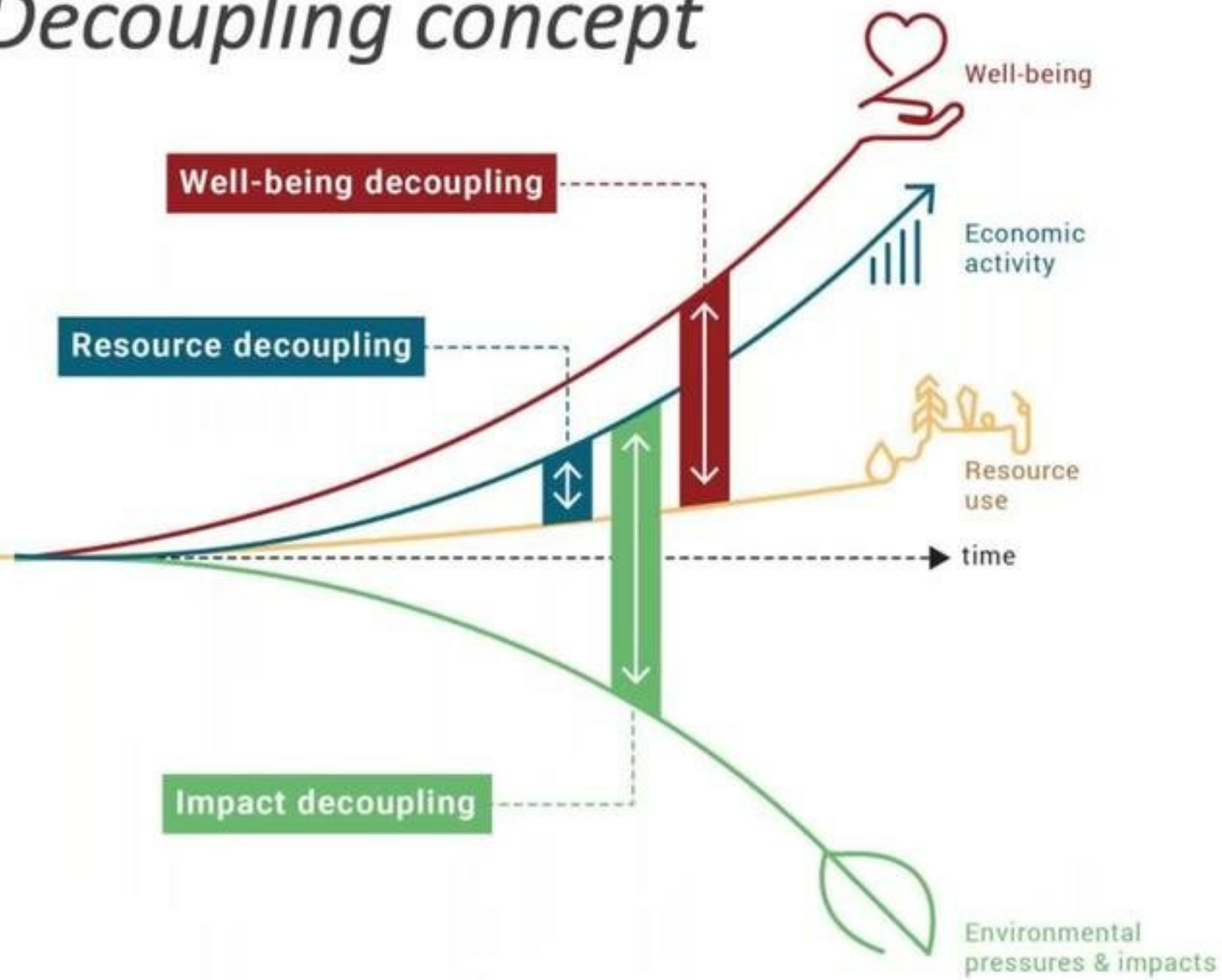
***90%** of global biodiversity loss and water stress*

***50%** of global climate change impacts*

1/3 of air pollution health impacts



Decoupling concept

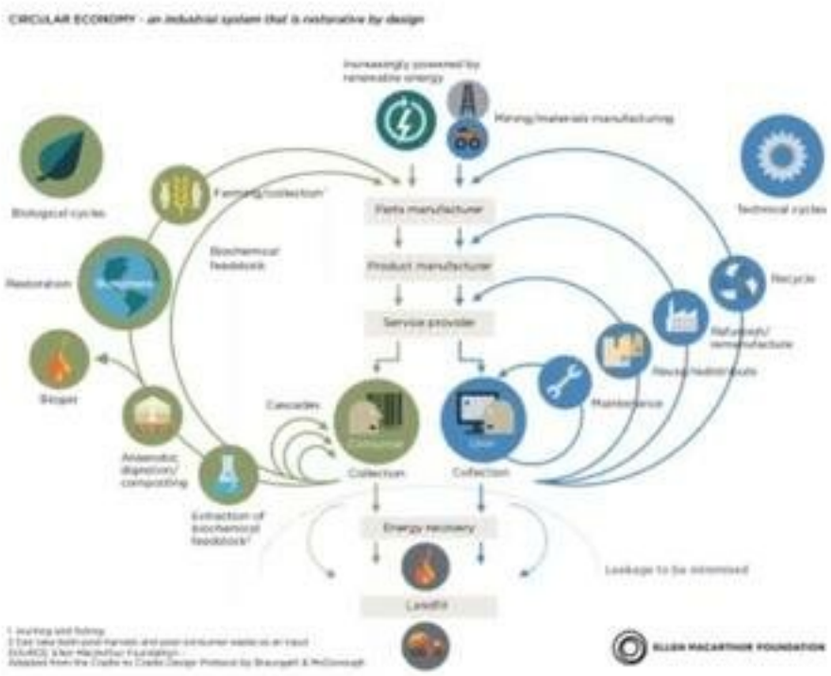


UN environment

International Resource Panel

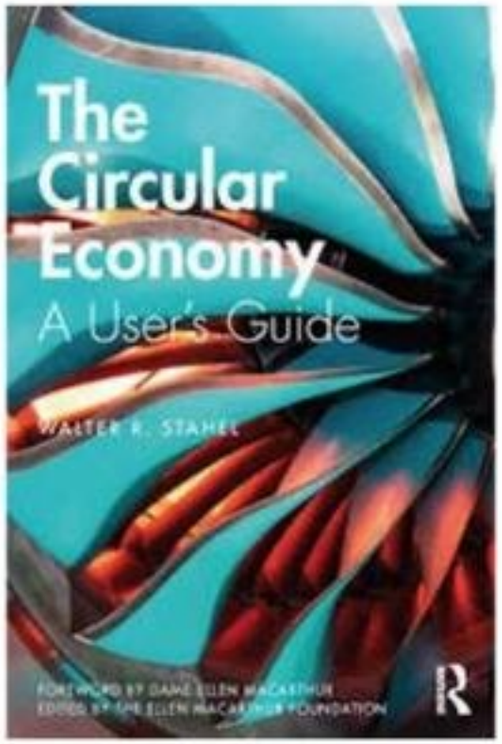
CIRCULAR ECONOMY

When, What, Who … Why



Circular Economy should be seen as an instrument for deliver decoupling of economic growth from resource use and environmental impacts and as a part of the bigger picture of economic, societal and cultural transformation needed to deliver the SDGs.

Circular economy idea is not new … it goes few decades back



Linear Economy is like a River
Circular Economy is like a Lake

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;

ELLEN MACARTHUR FOUNDATION

Political birth of the circular economy on the EU level

Political birth of the circular economy on the EU level

- *Barroso II Commission – Split between the Climate and the rest of the Environment*

Political birth of the circular economy on the EU level

- *Barroso II Commission – Split between the Climate and the rest of the Environment*
- *The Roadmap to a Resource Efficient Europe (COM(2011) 571): main aim was to identify ways to increase resource productivity and achieve decoupling of economic growth from resource use and environmental impacts. It provided orientation in terms of policy strategy to transform Europe's economy into a resource-efficient economy by 2050 and it has defined milestones for 2020 to track progress towards this 2050 vision. The roadmap specifically pointed to areas that have significant potential in terms of improving resource efficiency and practical ways to unlock that potential. Market and other barriers, such as inconsistency between policies were also identified. Economy-wide measures to move towards a resource-efficient economy were also discussed.*
- *In parallel to these processes and as proposed in the Roadmap, in 2012 the Commission set up the European Resource Efficiency Platform (EREP), a high-level advisory group with the mandate to provide policy guidance on the transition to a more resource-efficient economy. A manifesto and set of short-term, medium-term and long-term recommendations were published reflecting the work undertaken by the Platform. Members (EC, EP, MS, International organisations, Local/reginal authorities, Business/Industry CEOs, Civil Society, Academia/Independent thought leaders/Think tanks)*

European Resource Efficiency Platform (EREP) members

Chair	Mr John Bruton
Vice-Chair (EC)	Mr Janez Potočnik

EC	Mr Olli Rehn
EC	Mr Antonio Tajani
EC	Mr Algirdas Semeta
EC	Ms Connie Hedegaard
EP	Ms Sirpa Pietikainen
EP	Mr Jo Leinen
EP	Mr Gerben-Jan Gerbrandy
EP	Mr Philippe Lamberts
MS/DK	Ms Kirsten Brosbol
MS/D	Ms Barbara Hendricks
MS/IT	Mr Gian Luca Galletti
MS/EST	Ms Keit Pentus
OECD	Mr Simon Upton
UNEP	Mr Achim Steiner
UNIDO	Mr Li Yong
CoR	Ms Mercedes Bresso

WBCSD	Mr Peter Bakker
Veolia	Mr Jean-Michel Herrewyn
Kingfischer	Mr Ian Cheshire
Uniliver	Mr Paul Polman
KPMG	Mr Michiel Soeting
Simens AG	Mr Roland Busch
Mapei	Mr Giorgio Squinzi
Umicore	Mr Stephan Csoma
EEB	Mr Mikael Karlsson
FoEE	Ms Magda Stoczkiewicz
ETUC/Trade Union	Ms Bernadette Ségol
BEUC/Consumers	Ms Monique Goyens
UCL	Mr Paul Ekins
Stocholm Uni	Mr Johan Rockström
Zero emissions	Mr Gunter Pauli
EMF	Ms Ellen MacArthur

Political birth of the circular economy on the EU level

Political birth of the circular economy on the EU level

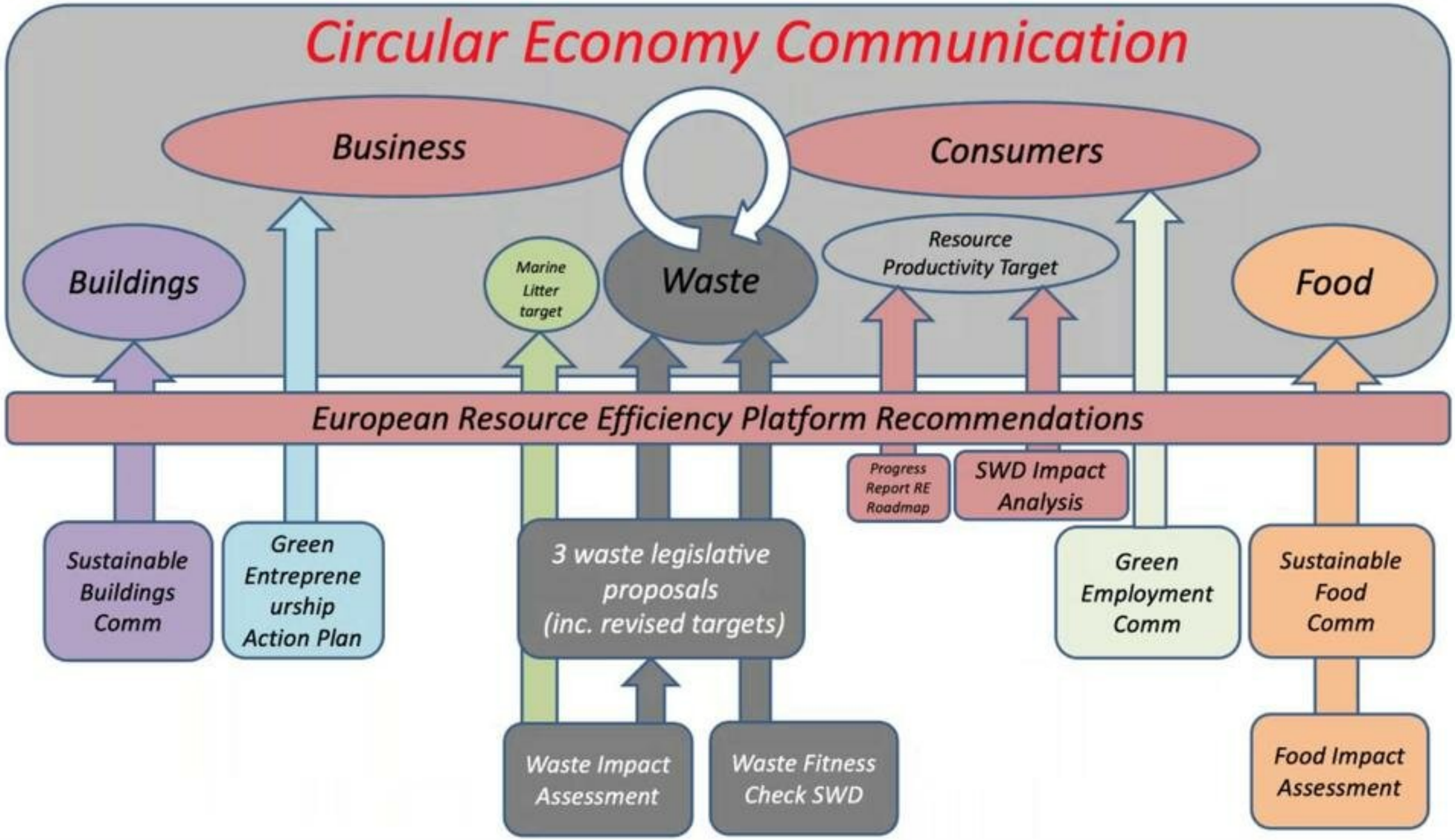
- *Resource Efficiency Finance roundtable* ***established (beginning 2013)***

Political birth of the circular economy on the EU level

- *Resource Efficiency Finance roundtable established (beginning 2013)*
- *In July 2014, the European Commission adopted the Communication "Towards a circular economy: a zero waste programme for Europe" and an annex to establish a common and coherent EU framework to promote the circular economy. The key elements of the circular economy package are:*
  - *boosting recycling and preventing the loss of materials from the economy;*
  - *creating jobs and economic growth;*
  - *showing how new business models, eco-design and industrial symbiosis can move the EU economy towards zero-waste;*
  - *reducing greenhouse emissions and environmental impacts.*

Key measures of the package were the definition of an overall headline target to increase material productivity, measured as GDP relative to Raw Material Consumption (RMC) by 30% relative to the level in 2014, by 2030. The Commission also put forward a legislative proposal to review recycling and other waste-related targets in the EU, including a 70% recycling target for municipal waste, a 80% recycling rate for packaging waste by 2030, landfill bans for recyclable materials by 2025 and the objective to virtually eliminate landfill by 2030.

EC also proposed other initiatives to promote the circular economy, related to sustainable buildings, green employment and green action for SMEs


Circular Economy Communication
Business
Consumers
Buildings
Marine Litter target
Waste
Resource Productivity Target
Food
European Resource Efficiency Platform Recommendations
Progress Report RE Roadmap
SWD Impact Analysis
Sustainable Buildings Comm
Green Entrepreneurship Action Plan
3 waste legislative proposals (inc. revised targets)
Green Employment Comm
Sustainable Food Comm
Waste Impact Assessment
Waste Fitness Check SWD
Food Impact Assessment

HEADLINE TARGET
RAW MATERIAL CONSUMPTION/GDP

DASHBOARD

Indicator Land	Indicator Water	Indicator GHG	Indicator Materials

ANNUAL RESOURCE EFFICIENCY SCOREBOARD
(EUROSTAT, since 2013)

Circular Economy package "Towards a circular economy: a zero waste programme for Europe"

was removed from the EC programme immediately when Juncker's Commission started the mandate (end 2014)

- *Why it was removed?*
- *Why EC was forced to put it back on the agenda and which argumentation was used?*
- *Why this proved to be beneficial for the whole CE development?*

RESOLVE – A MENU OF BUSINESS ACTIONS FOR A BETTER ECONOMY

REgenerate	▪ *Shift to renewable energy and materials* ▪ *Reclaim, retain, and restore health of ecosystems* ▪ *Return recovered biological resources to the biosphere*	hilcona; Nespresso; SLM; P-REX; Iberdrola; Savory Institute
Share	▪ *Share assets (e.g. cars, rooms, appliances)* ▪ *Reuse/second hand* ▪ *Prolong life through maintenance, design for durability, upgradability…*	airbnb; autolib'; Nearly New Car by Mercedes-Benz; BlaBlaCar
Optimise	▪ *Increase performance/efficiency of product* ▪ *Remove waste in production and supply chain* ▪ *Leverage big data, automation, remote sensing and steering*	Hoval; cisco; The Vauban Quarter; œrlikon balzers; Toyota; BSB; wrap
Loop	▪ *Remanufacture products or components* ▪ *Recycle materials* ▪ *Digest anaerobic* ▪ *Extract biochemicals from organic waste*	Hilti; Renault; Winsun; Patagonia; Paques; mazuma mobile; Veolia; CAT; Dell
Virtualise	▪ *Books, music, travel, online shopping, autonomous vehicles etc.*	cisco; skype; kindle; iTunes; Netflix; Google; zalando
Exchange	▪ *Replace old with advanced non-renewable materials* ▪ *Apply new technologies (e.g. 3D printing)* ▪ *Choose new product/service (e.g. multimodal transport)*	Winsun; skyTran; Tesla; Desso; Beyond Meat; Philips Lighting

Source: Growth Within Report (Ellen MacArthur Foundation, McKinsey, SUN 2015)

EC Circular Economy Package

Adopted on 2 December 2015

From environmental to primarily economic package

Action Plan Communication + *List of Follow-up Initiatives (Annex)* + *4 Legislative proposals on waste*

Key action areas

Proposed actions in the Action Plan

- Eco-design to include reparability, durability, recyclability
- Legislation on fertilisers, including organic and waste-based fertilisers
- Minimum requirements for the reuse of wastewater
- Actions on Green Public Procurement
- Funding of €650 million for 'Industry 2020 in the circular economy'
- Quality standards for secondary raw materials
- Strategy on plastics, including marine litter
- Interface between chemicals, products and waste legislation

Priority sectors

- Biomass & Bio-based Products
- Plastics
- Construction & Demolition
- Food Waste
- Critical Raw Materials

Proposals on waste

- *Long-term recycling targets for municipal waste and packaging waste, and to reduce landfilling (5 % points lower than in 2014 CE Package)*
- *Measures to promote waste prevention, including food waste*
- *Clearer rules for preparation for reuse, simplification on by-products and end-of-waste status*
- *Extension of separate collection to bio-waste on top of glass/paper/plastic/metals*
- *Common minimum requirements for extended producer responsibility schemes*

Circular Economy Action Plan II
March 2020 - Structural overview

Circular Economy Action Plan II
March 2020 - Structural overview

- *Designing sustainable products*
- *Empowering consumers and public buyers*
- *Circularity in production processes*

- *Electronics and ICT; Batteries and vehicles;*
- *Packaging; Plastics; Textiles;*
- *Construction and buildings; Food, water and nutrients*

Circular Economy Action Plan 2020
Sustainable Products Policy Framework

Waste Framework Directive
Waste Hierarchy

Sustainable Product Policy Legislative Initiative
Widening Eco-Design Directive?

Product Framework Legislation?

- From Waste Hierarchy to Product Hierarchy
- Product Value Retention System
- End of Product Status
- Producer Ownership Concept
- Design for Sustainability Requirements
- Public Procurement Requirements
- Product Passport
- Registration for Market Access ...

CIRCULAR ECONOMY

Potential for Fighting Climate Change

SUPPLY SIDE SOLUTIONS

CARBON MANAGEMENT

ENERGY

SUPPLY SIDE SOLUTIONS

CARBON MANAGEMENT

LAND | WATER | ENERGY | MATERIALS

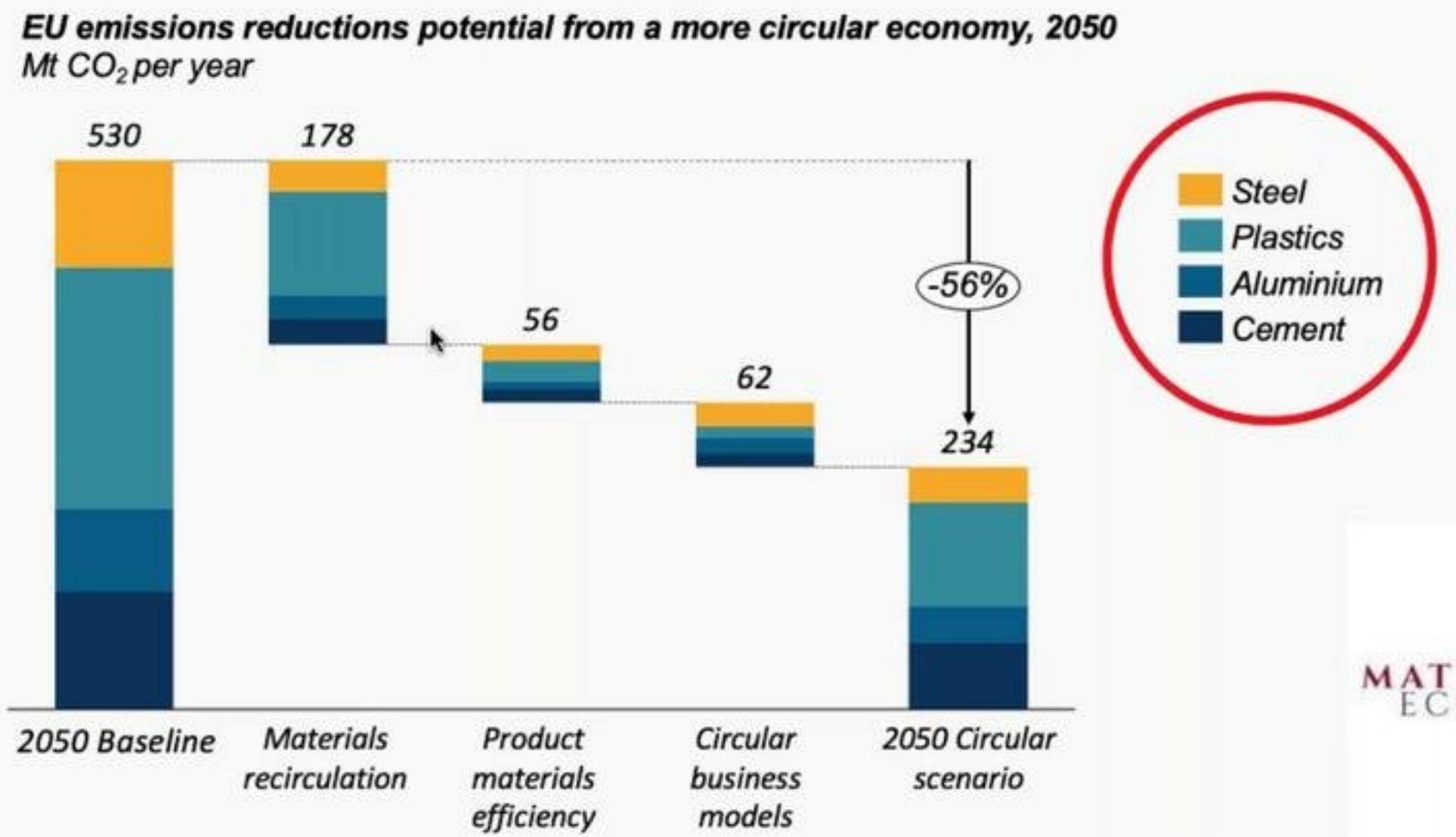
DECOUPLING - CIRCULAR ECONOMY

DEMAND SIDE SOLUTIONS

ECO-SYSTEM SERVICES, ENVIRONMENTAL SINKS

NATURE BASED SOLUTIONS

A MORE CIRCULAR ECONOMY CAN REDUCE EU EMISSIONS FROM MATERIALS BY 56%



MATERIAL ECONOMICS

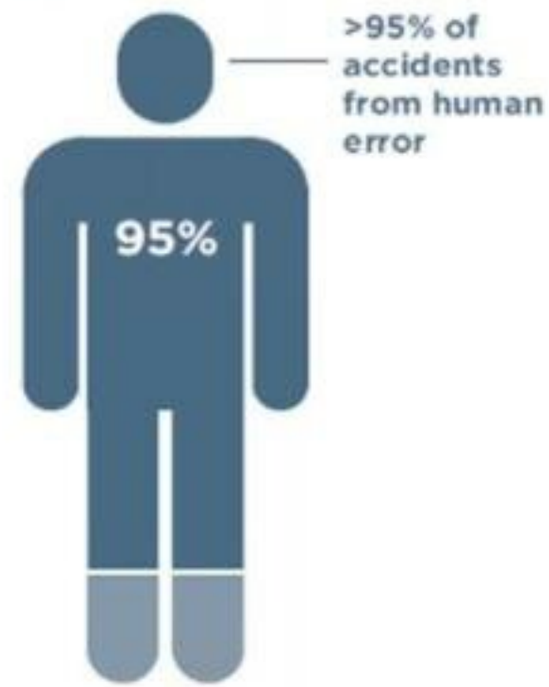
STRUCTURAL WASTE IN A MOBILITY SYSTEM

CAR UTILISATION

TANK-TO-WHEEL ENERGY FLOW - PETROL

DEATHS AND INJURIES/ YEAR ON ROAD

30,000 deaths in accidents and 4X as many disabling injuries

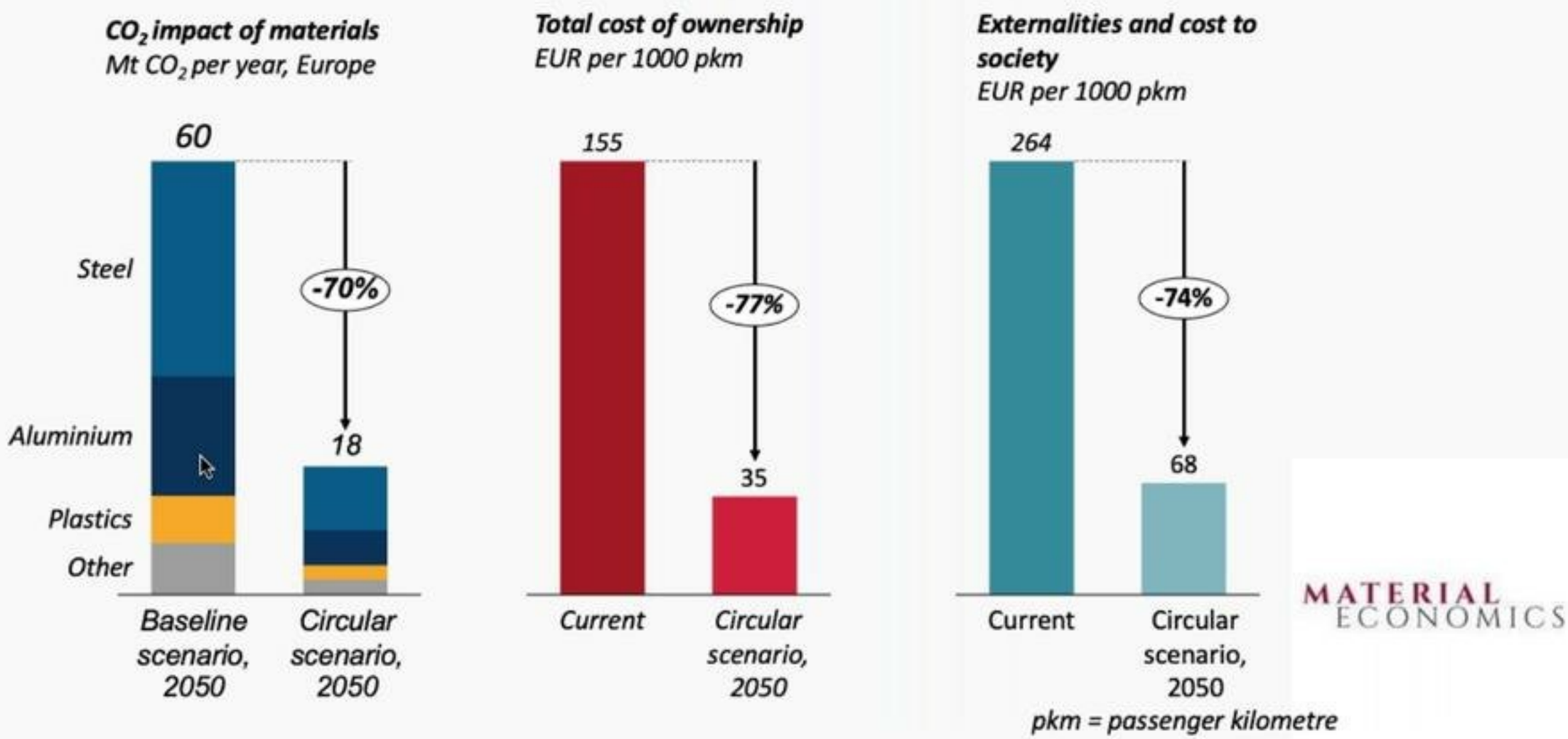


LAND UTILISATION:

5% Road reaches peak throughput only 5% of time and only 10% covered with cars then

50% 50% of most city land dedicated to streets and roads, parking, service stations, driveways, signals, and traffic signs

A SHARED MOBILITY SCENARIO IS A HIGHLY ATTRACTIVE VISION FOR PASSENGER CARS

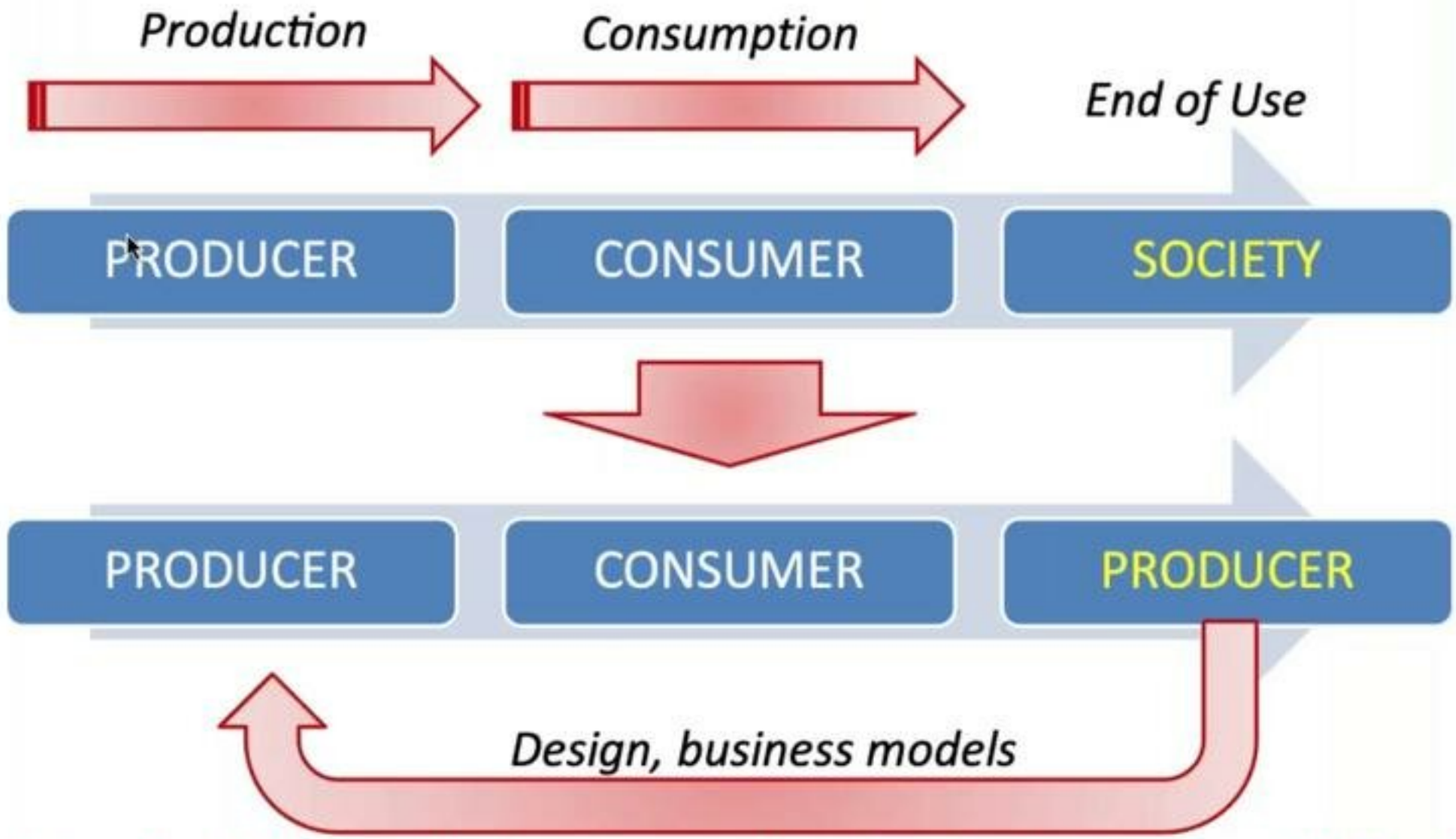


CIRCULAR ECONOMY

Where to (Re)focus our Attention

Ownership and resource (under)utilisation - Producer

Better Connecting Producer with his Product



Retaining the Value, Rethinking Ownership, aligning Incentives with Regulation

Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

We do not need cars ... *We need mobility*

Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

We do not need cars	...	*We need mobility*
We do not need light bulbs	...	*We need light*

Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

We do not need cars	...	*We need mobility*
We do not need light bulbs	...	*We need light*
We do not need chairs	...	*We need to sit*
We do not need refrigerators	...	*We need chilled and healthy food*

Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

We do not need cars	...	*We need mobility*
We do not need light bulbs	...	*We need light*
We do not need chairs	...	*We need to sit*
We do not need refrigerators	...	*We need chilled and healthy food*
We do not need CDs	...	*We want to listen to the music*

Ownership and product (under)utilisation - Consumer

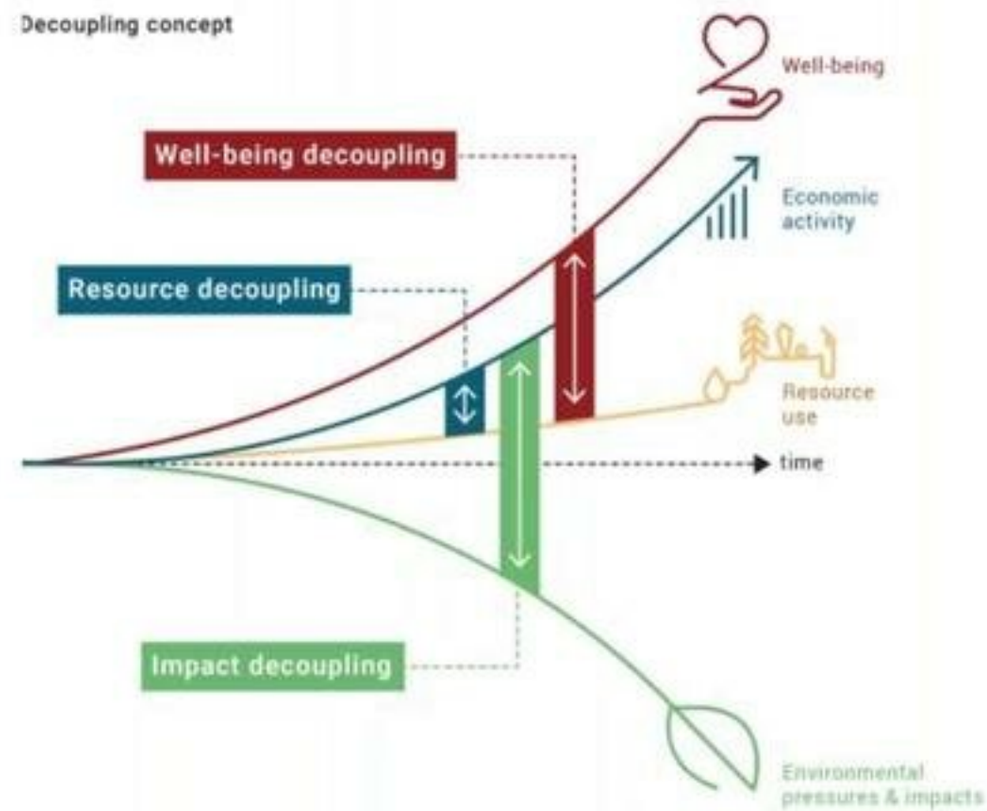
It is not not about owing it is about using

We do not need cars	...	*We need mobility*
We do not need light bulbs	...	*We need light*
We do not need chairs	...	*We need to sit*
We do not need refrigerators	...	*We need chilled and healthy food*
We do not need CDs	...	*We want to listen to the music*
We do not need pesticides	...	*We want healthy plants*

Dematerialisation, Rethinking Ownership,
From Efficiency to Sufficiency

Ownership and product (under)utilisation - Consumer

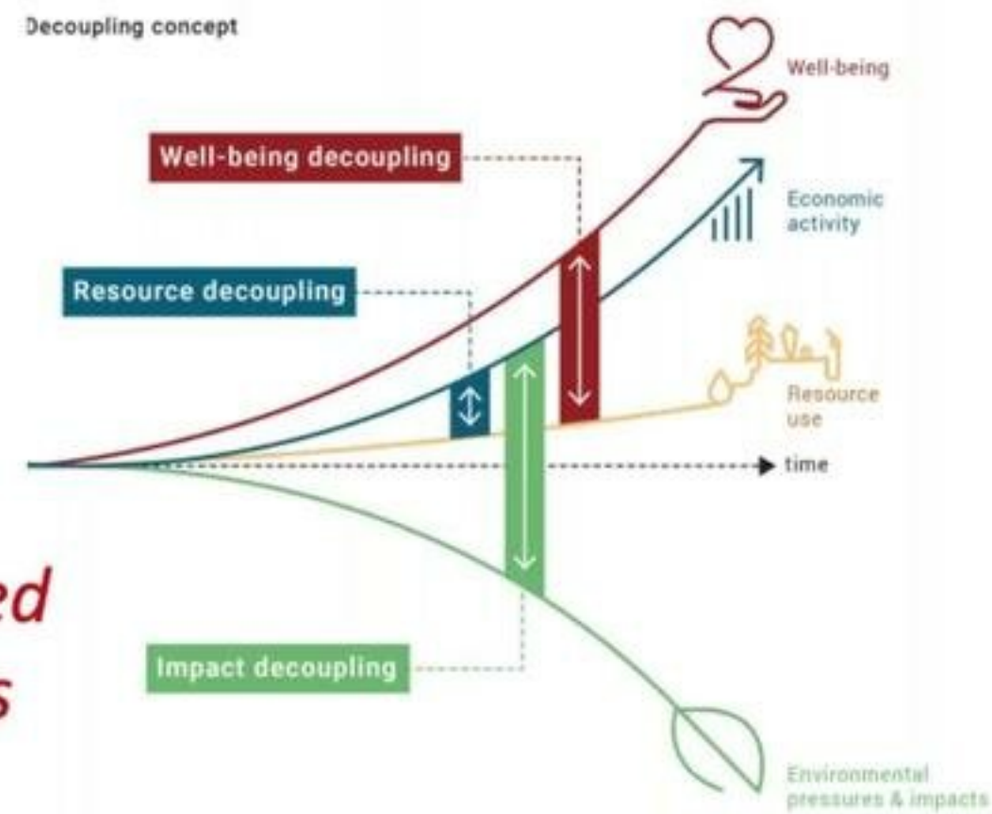
It is not not about owing it is about using



Ownership and product (under)utilisation - Consumer

It is not not about owing it is about using

- *Problem: Preferences from consumers to own products like houses, cars, refrigerators, cloth … are driving consumption in a massive lock-in in underutilization*
- *Solution: Explore the opportunity that the young generation has less ownership biased constraints and provide alternative options*



Aligning Incentives with Regulation

Example of Agriculture

- *Digitalisation is allowing targeted approach to individual plant protection - precision farming is an already known instrument, but producers are still quantity based driven.*

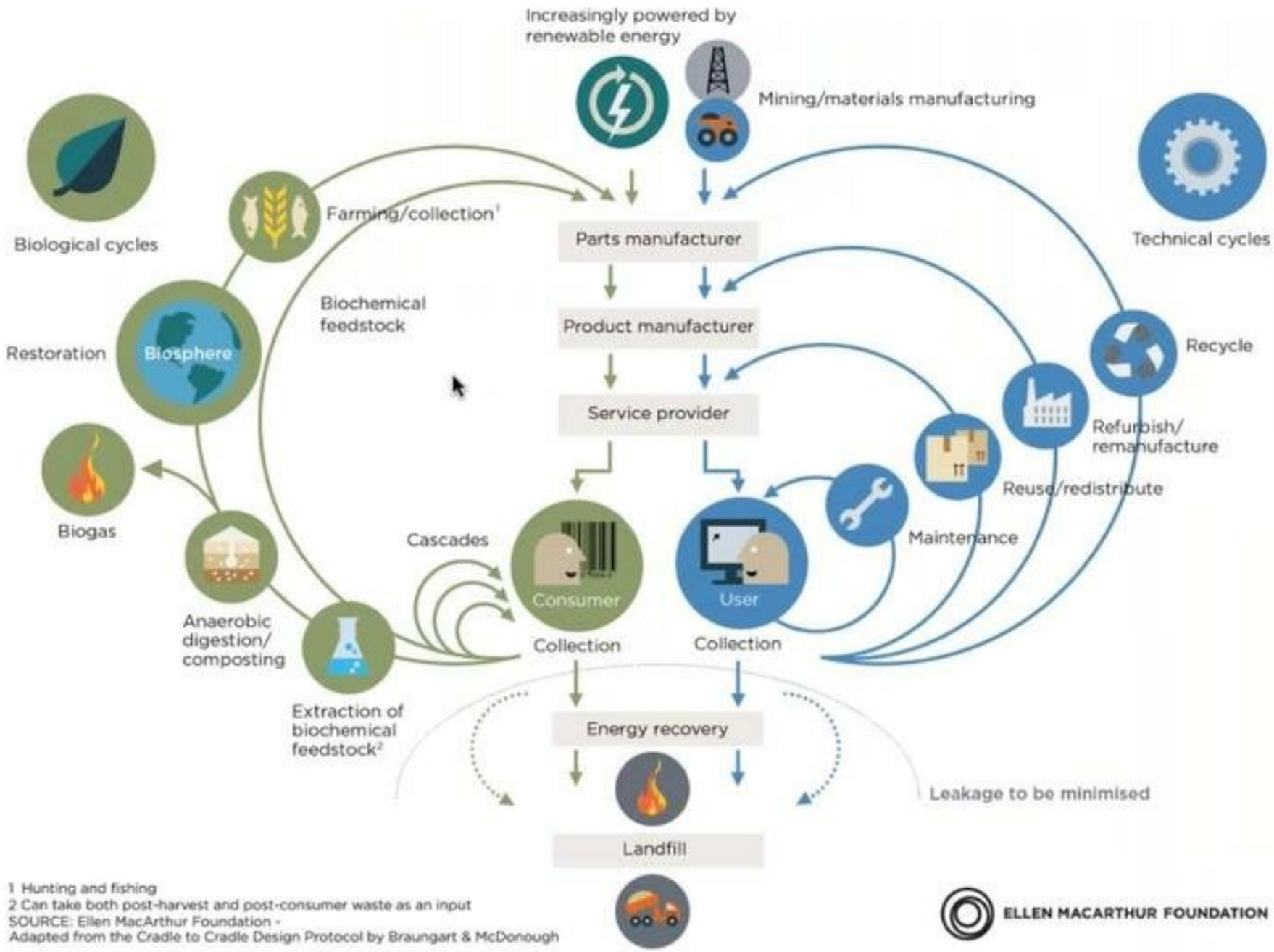
Aligning Incentives with Regulation

Example of Agriculture

- *Digitalisation is allowing targeted approach to individual plant protection - precision farming is an already known instrument, but producers are still quantity based driven.*

- *Instead of selling pesticides, chemical companies could sell services to protect (hectares of) plants from pests. This would incentivise them to increase profits through minimising the costs of resources used, including pesticides.*

CIRCULAR ECONOMY - *an industrial system that is restorative by design*



1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
SOURCE: Ellen MacArthur Foundation -
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

ELLEN MACARTHUR FOUNDATION

Retaining Value in Circular Economy

Retaining Value in the Swedish Materials Systems
The Case of Plastics

- Offical statistics on plastic waste recycling 53%
- Value end of use plastic each year 10 bil SEK
  - 80% incinerated – energy value 0.4 bil SEK
  - 16% new plastics 0.9 bil SEK
  - 4% landfield 0.0 bil SEK
- All value retained 1.3 bil SEK
- Value retained/Value end of use 13%

Source: Material Economics

EUROPEAN GREEN DEAL

A new Growth Strategy based on Circular Economy

New Commission Priorities

In her speech before the European Parliament in July 2019, Ursula von der Leyen identified six priorities for her new team:

New Commission Priorities

In her speech before the European Parliament in July 2019, Ursula von der Leyen identified six priorities for her new team:

- *A European Green Deal*
- *An economy that works for people*
- *A Europe fit for the digital age*
- *Protecting our European way of life*
- *A stronger Europe in the world*
- *A new push for European democracy*

European Green Deal

European Green Deal

Annual Sustainable Growth Strategy 2020
Climate Pact

A New Industrial Strategy for Europe
Circular Economy Action Plan 2020

Shaping Europe's Digital Future
White Paper on Artificial Intelligence
A European Strategy for Data

Farm to Fork
Biodiversity Strategy

And … more documents existing and coming

European Green Deal

General Orientation

- *It is "a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use."*
- *It also "aims to protect, conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts. At the same time, this transition must be just and inclusive."*
- *Is an "integral part of this EC's strategy to implement the UN's 2030 Agenda and the SDGs"*

State of the Union 2020

September 16th, 2020

Source; European Commission (2020)

State of the Union 2020

September 16th, 2020

"We will enhance emission trading, boost renewable energy, improve energy efficiency, reform energy taxation. But the mission of the European Green Deal involves much more than cutting emissions. It is about making systemic modernisation across our economy, society and industry. It is about building a stronger world to live in."

"Our current levels of consumption of raw materials, energy, water, food and land use are not sustainable. We need to change how we treat nature, how we produce and consume, live and work, eat and heat, travel and transport … This is a plan for a true recovery. It is an investment plan for Europe."

Source; European Commission (2020)

EUROPEAN GREEN DEAL

Conditions to make it implementable

The System Change Compass contributes to the implementation of the ambitions of the European green Deal

Ambition of the EGD is high...

- ***Sets zero net emissions*** *of GHG by* ***2050*** *and* ***decoupling of growth and resource use***
- *Acknowledges need for fair and* ***just transition***
- *Aims at* ***strongly interlinked and mutually reinforcing*** *policy recommendations*

...but implementation is uncertain

- ***Does not sufficiently address drivers and pressures*** *that cause environmental damage*
- ***Does not offer systemic perspective*** *to guide decision-making*
- *Implementation is put at extra risk due to* ***COVID-19 recovery***

The System Change Compass guides action on all levels of the system

- ***Maps and envisions*** *the system in service of people and planet*
- ***Derives system level orientations*** *towards desired state*
- *Charts pathway towards prosperity and wellbeing* ***within planetary boundaries***

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THE CLUB OF ROME

UNEP IRP and Club of Rome:

The core limiting factor of human wellbeing and our (economic) development are (the unsustainable use of our) natural resources and environmental sinks

UNEP IRP and Club of Rome:

The core limiting factor of human wellbeing and our (economic) development are (the unsustainable use of our) natural resources and environmental sinks

*Report is based on **natural resource optics**.*

The way we treat natural resources to a large extent determines economic results, as well as environmental and health impacts. Natural resources are the bridge between economy and competitiveness on one hand and climate change, biodiversity loss, pollution and health implications on the other

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity

REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

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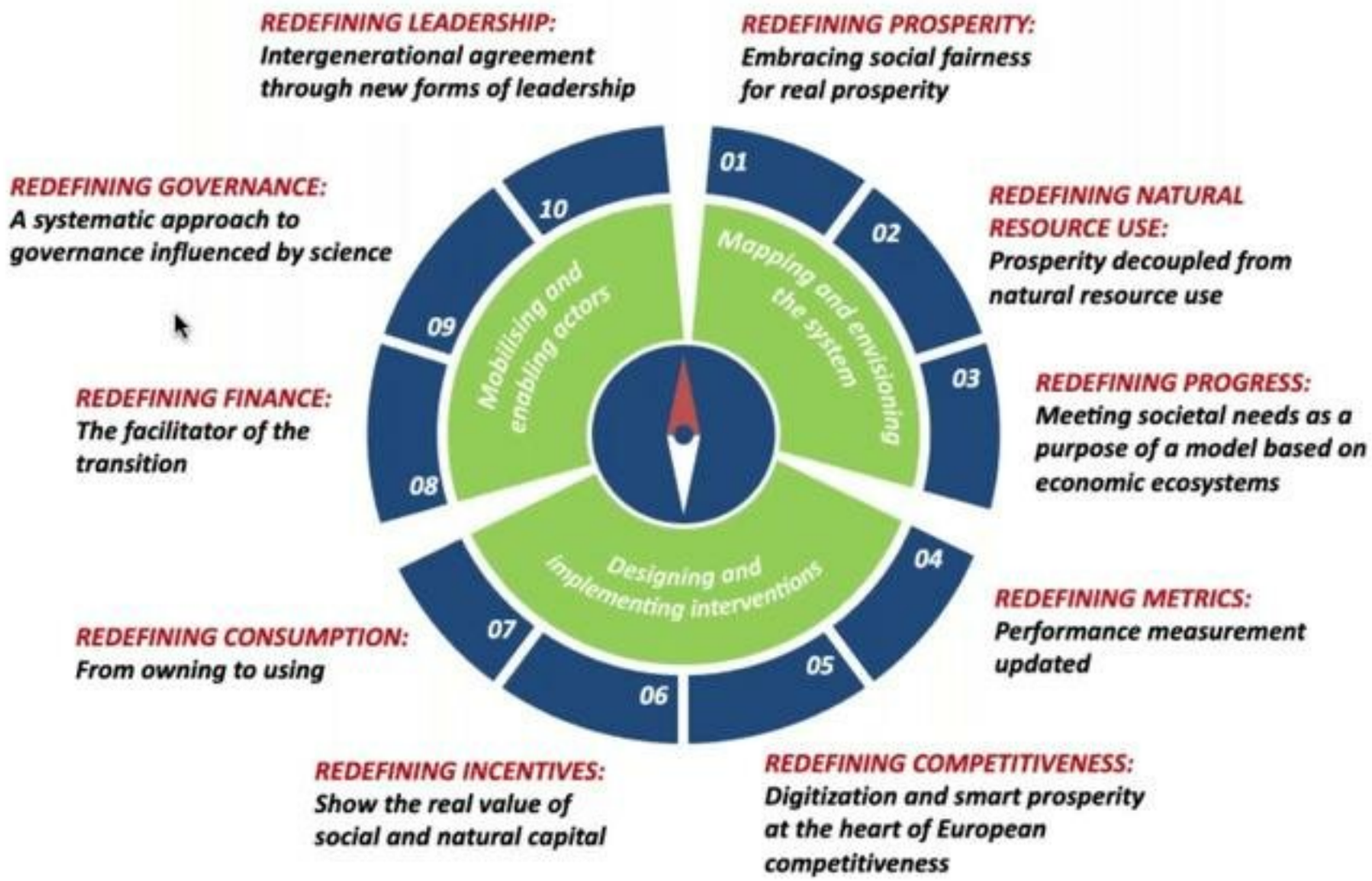
The System Change Compass



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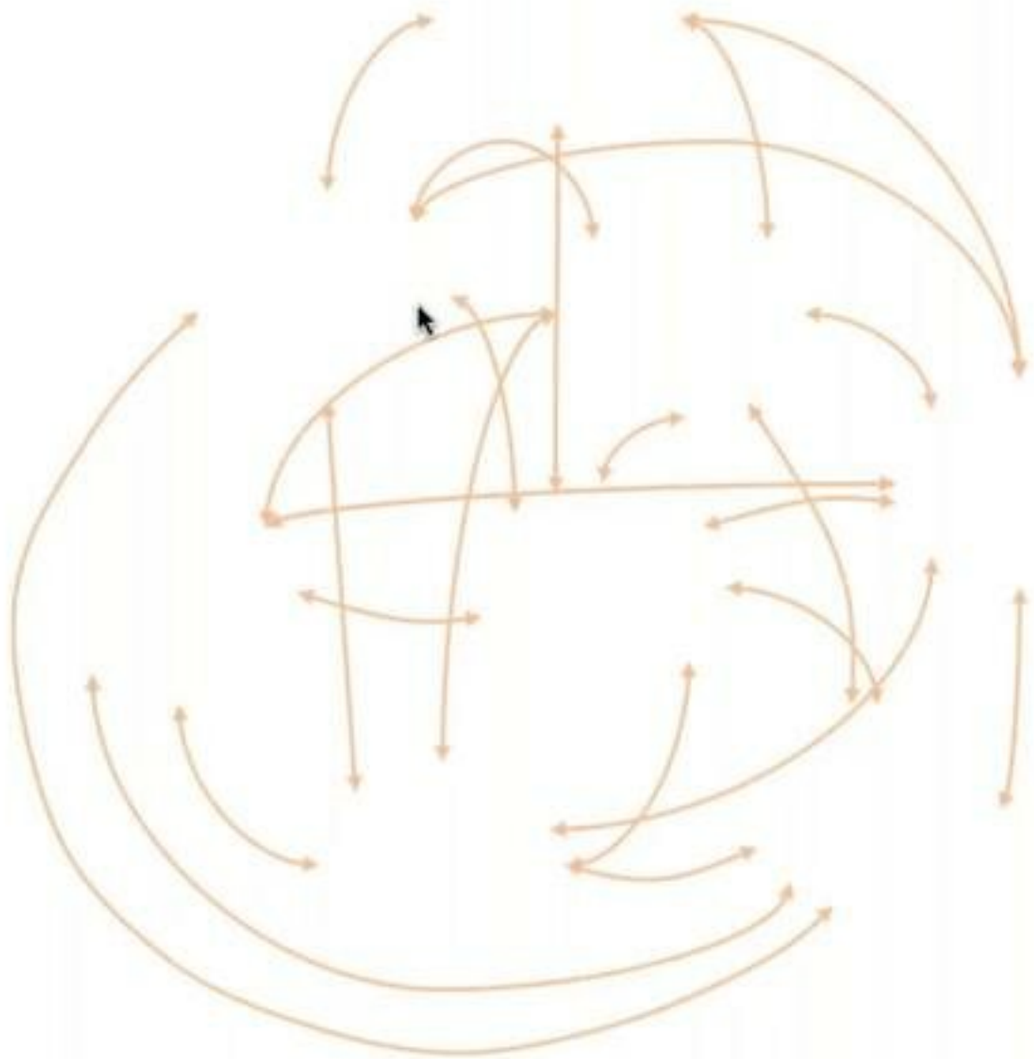
Economic Eco-Systems



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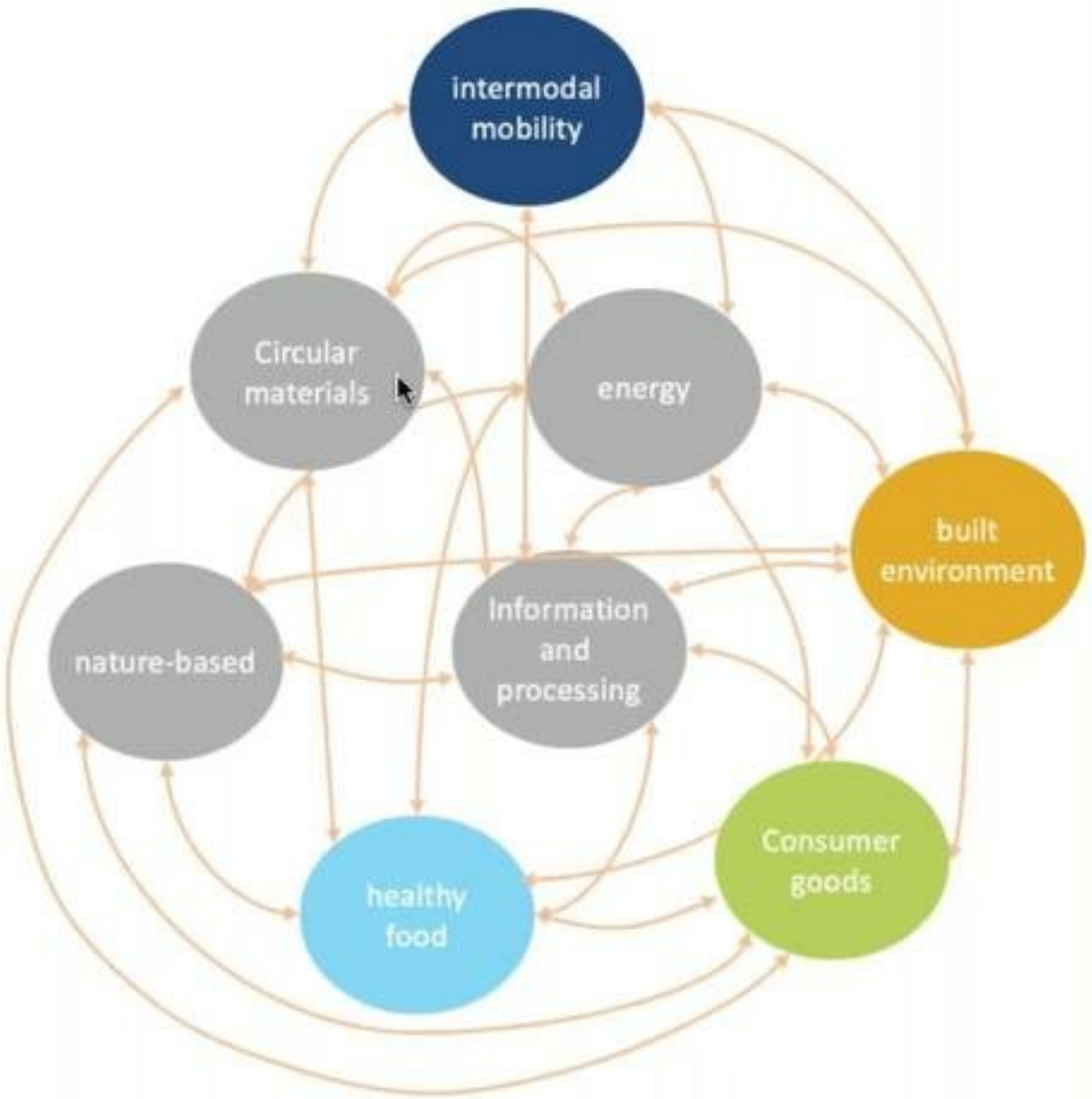
Economic Eco-Systems



Related to resource intensive human needs

- *Nutrition*
- *Mobility*
- *Housing*
- *Daily functional needs*

Supporting the other economic ecosystems in their delivery of societal needs

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50+ nascent industrial champions

that should be supported to built ecosystems based on compass orientations

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50+ nascent industrial champions
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Healthy food

- *Organic food and beverages*
- *Regenerative agriculture*
- *Sustainable aquaculture and fishing*
- *Reduce and valorise food waste*
- *Urban agriculture*
- *Product reformulation for nutritious food*
- *Alternative proteins*

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- Alternative proteins

Built Environment

- Smart urban planning
- Rethink built environment ownership
- Repurpose underutilized buildings
- Retrofit existing buildings
- Fluid and sufficiency-oriented space management
- Circular and net-zero housing

Intermodal Mobility

- Fast charging infrastructure
- High speed railway infrastructure
- Modern and adapted transit infrastructure
- Car- and ride-sharing models
- End-of-life management for cars
- Electric and autonomous vehicles
- Infrastructure to improve traffic flow and AV adoption
- Green aviation
- Green shipping
- Walking/cycling infrastructure

Consumer goods

- Product-as-a-Service models
- Maintenance and value retention in products
- Peer-to-peer product sharing platforms

Nature-based

- Restoration of degraded land and coasts
- Smart forest management
- Urban greening
- Systems for paid ecosystem services
- Seaweed
- Marine and land-based environmental protection areas
- Ecotourism

Energy

- Renewable power generation
- Energy storage
- Hydrogen economy
- Smart metering and (point-of-use) energy management
- Grid integration and technologies
- Production of low-carbon gaseous and liquid fuels (transition technology only)
- Carbon capture infrastructure (transition technology only)

Circular Materials

- Localised and distributed value chain systems
- Asset recovery systems and reverse logistics
- Markets for secondary materials
- High-value material recycling
- Materials-as-a-Service models
- New materials and high-performing substitutes
- Additive manufacturing

Information and processing

- Distributed manufacturing
- High-speed digital infrastructure
- Digital material information and tracking systems
- Data generation, processing, and protection
- Artificial Intelligence for societal challenges

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Healthy Food | Ecosystem-level policy orientations

Healthy Food Economic Ecosystem				
	Impact			
Ecosystem-level policy orientations	Economic	Social	Environmental	Resilience
Maximise nutrient productivity (nutrients per resource input; land & water) and improve health benefits	✓	✓	✓	✓
Minimise food/biomass waste in supply chains and at the consumer/household stage and maximise nutrient cycling	✓	✓		✓
Create enabling sustainable conditions (transition help, resolving competing land/biomass consumption claim, match potential and actual use of land)		✓		✓
Minimise and compensate remaining negative impacts		✓		✓

Healthy Food | champion-orientations

Healthy Food – Champions	Descriptions
Organic food and beverages	*Increase organic food and beverage market (e.g. through pull measures and rewards for their ecosystem services)*
Regenerative agriculture	*Minimise agrochemicals and soil disturbance, maintain soil cover and promote efforts to maximise biodiversity (adapted to local contexts across European geographies)*
Sustainable aquaculture and fishing	*Boost development of sustainable aquaculture and sustainable wild-caught fisheries*
Reduce and valorise food waste	*Shift to zero-waste high-quality food systems, reducing food waste through new business models and technology, and scale nutrient waste-to-fertiliser facilities, e.g. anaerobic digestion and bio-refineries*
Urban agriculture	*Improve the scale and efficiency of food grown in urban environments, e.g. through urban public gardens, indoor or vertical farming*
Product reformulation for nutritious food	*Improve nutritional content by reducing processing, substituting fat and sugar content, and increasing transparency for consumers*
Alternative proteins	*Scale next-wave human protein food supply sources, particularly aquatic, plant-based, insect-based and laboratory-cultured*

EGD implementation system roadmap

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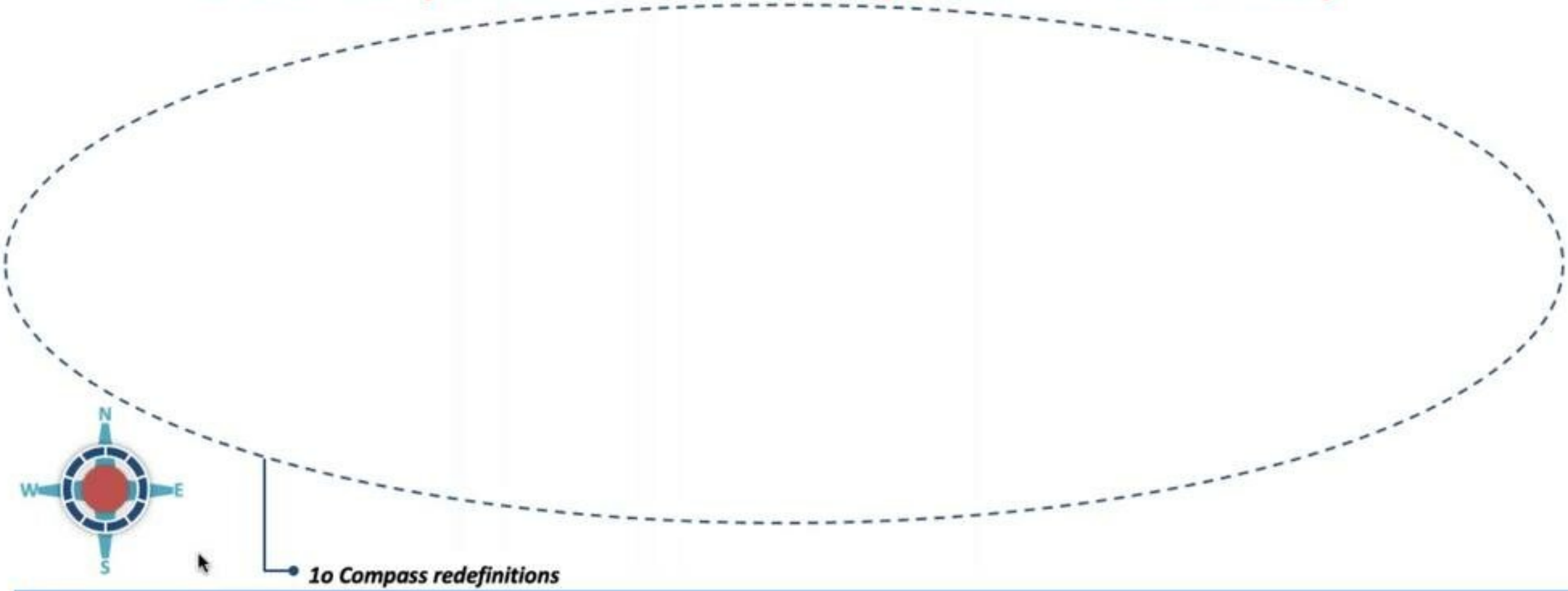
EGD implementation system roadmap



New organization of economic activities	*One overarching system that consolidates the European economy in its entirety.*

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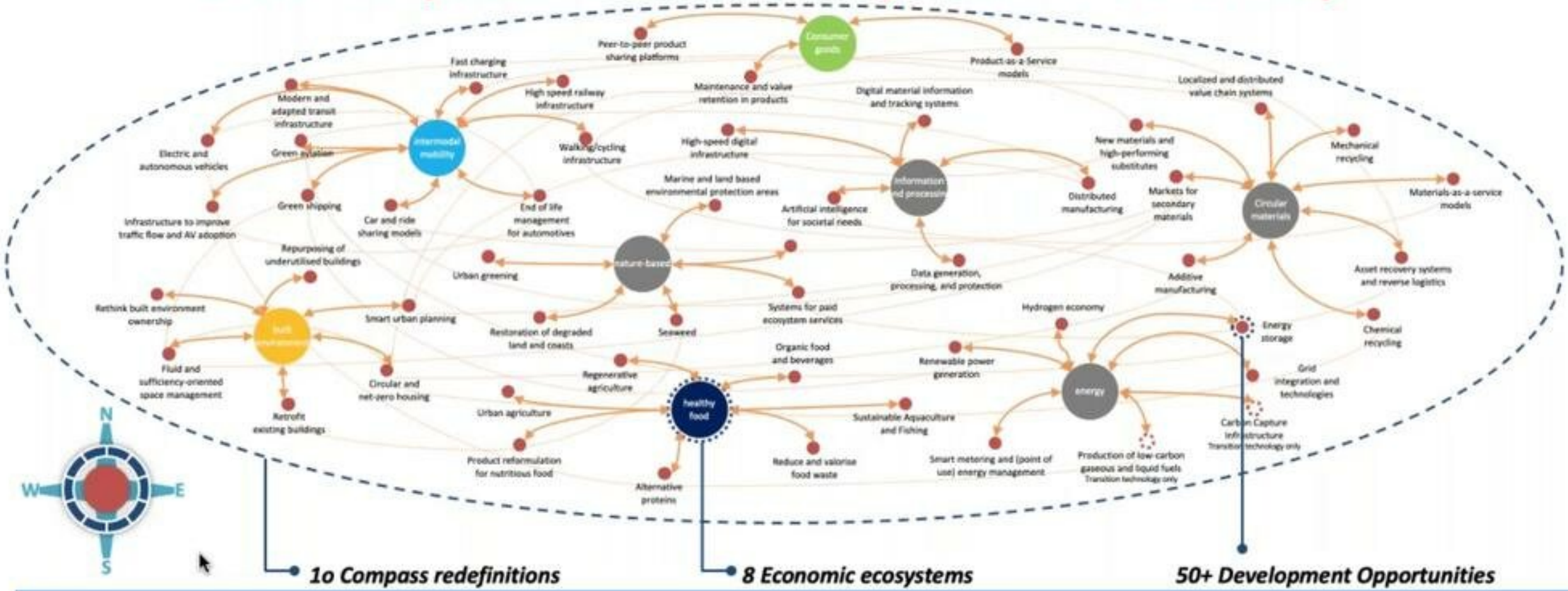
EGD implementation system roadmap



1o Compass redefinitions | **8 Economic ecosystems** | **50+ Development Opportunities**

New organization of economic activities	*One overarching system that consolidates the European economy in its entirety.*	*Economic ecosystems can meet a specific societal need (e.g. intermodal mobility system) or support the fulfilment of multiple societal needs (e.g. new energy system).*	*"Champions" are economic subsystems which could become the new spearheads of the green, resilient and fair post-COVID economy Europe wants to build*
Application of the compass on each level	***10*3 = 30 system-level policy orientations***	***3-5 specific economic ecosystem policy orientations***	***50+ economic subecosystems orientations***

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EGD and the post-COVID Recovery
Two Sides of the same Coin

EGD and the post-COVID Recovery Two Sides of the same Coin

1. *The economic policy designed by the EGD and related documents is the most convincing competitiveness policy for the European Union - According to the Raw Materials Scoreboard of the EC, the EU was in 2018 between 75% and 100% reliant on imports for most metals and more than half of EU's energy needs are met by net imports. Prices for raw materials are extremely volatile and resources constitute the largest share of industry input costs.*
2. *EGD already provides convincing answers to some COVID-19 related concerns in relation to reconsidering globalisation effects - Building a clean and circular economy promises to reduce our dependence on imported materials, lower our environmental, climate and health impacts, and create more local jobs. It can also help improve self-sufficiency and resilience exposed by Covid-19 in relation to the global supply chains.*

EGD and the post-COVID Recovery
Two Sides of the same Coin

3. *Both EGD and post-Covid-19 call for an inter-generational solidarity and agreement - In or the past decades, GDP has grown at the expense of depleting natural capital, passing on the costs of replenishing this capital to future generations. The billions in financial debt being mobilised by countries and institutions to combat Covid-19 are adding to the environmental debt. At minimum we should provide them a safer, more sustainable and resilient world than is the current one.*

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4. *COVID-19 is providing the necessary missing urgency to the EGD and climate related financial efforts - We have seen that determined global actions in facing a crisis are possible if the crisis is perceived as imminent. Until now, the fight against environmental challenges has never been seen as sufficiently urgent to attract enough funding. Funds committed to Covid-19 recovery (in EU almost doubled budget capacity) create an opportunity to reshape an economy on a transformative scale.*
5. *Both COVID-19 and EGD related challenges require a new approach to governance, in particular on the global level*

There has never been a better moment for

There has never been a better moment for

Europe to move form the history of "resource-driven imperialism" into an era of responsible use of natural resources, mitigating its resource fragility and strengthening preparedness and resilience

This would also clearly position EGD and give it a real historic and strategic weight.

Importance of European Leadership

Importance of European Leadership

Europe is not only
blue with yellow starts

It is a rainbow

- *blue for freedom and democracy*
- *red for social values*
- *green for the protection of environment*
- *yellow for the culture*

We can hardly picture Europe as the center of the World, but we should do everything that Europe remains the center of the dreams of all the people of the World. Circular Economy could help us connect people and interests.

We need more "Circularity " even in the

GOVERNANCE

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GOVERNANCE

Sharing sovereignty instead of owing sovereignty

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GOVERNANCE

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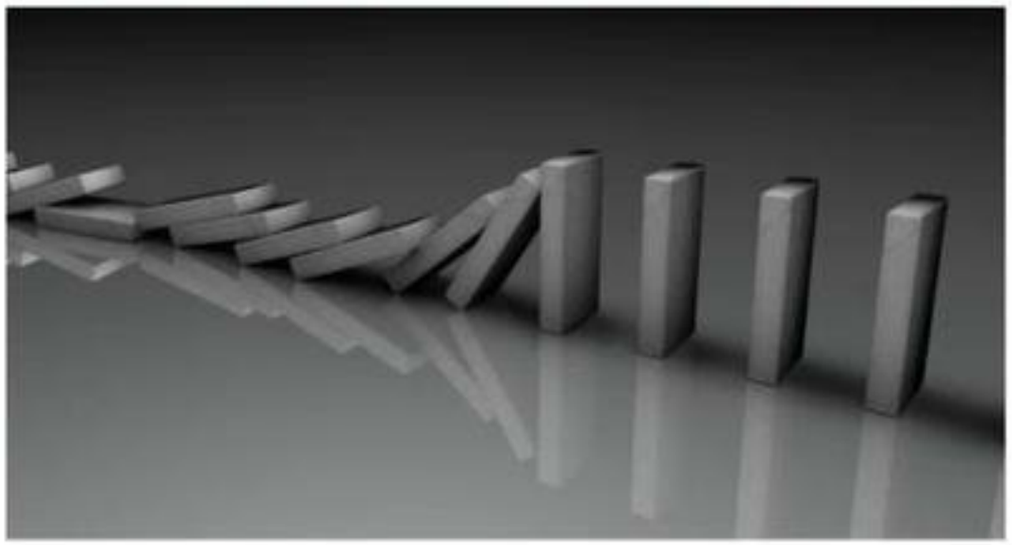
TO CONCLUDE

From Knowing to Applying

From Willing to Doing

Transition to a more sustainable economy and society



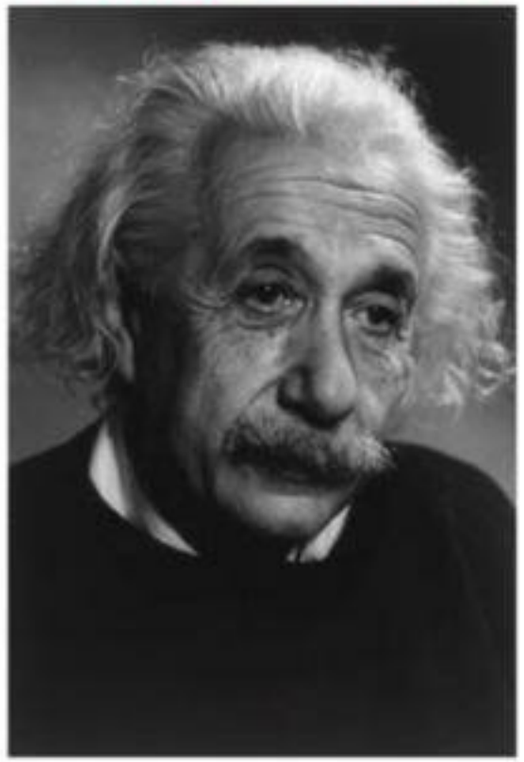
IS UNAVOIDABLE!

Humans are supposed to be intelligent. It is high time to prove it.

We have to fix a broken compass!

WILL IT BE EASY?

ALBERT EINSTEIN



When asked why it is that mankind has stretched so far as to discover the structure of the atom, but we have not been able to devise the political means to keep the atom from destroying us he replied:

"That is simple, my friend. It is because politics is more difficult than physics"

Johann Wolfgang Goethe

imdb.com

Johann Wolfgang Goethe

imdb.com

Knowing is not enough; we must apply.

Circular Economy is not a new concept

It is the oldest concept on the earth.

Circular Economy is not a new concept

It is the oldest concept on the earth.

Nature is a "bio-economy" organized on the principles of the circular economy.

Nothing is lost and everything has its purpose.

It makes sense to embrace it and finally start to behave accordingly.

In essence there is only question to answer:

Do we agree that we humans are part of the nature too?

To answer this question we probably do not need the help of the most famous Belgium detective, but his advice is always useful

HERCULE POIROT

When asked why he is speaking about himself always in a third person he replied something like that:

If one is such a genius like me, it is very important to establish a healthy distance to himself.