



ECONOMIC TRANSFORMATION

AN ESSENTIAL CONDITION FOR SDGs COMPLIANT FUTURE

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Who are we?

The International Resource Panel - IRP was launched in 2007 with the idea of creating a science-policy interface on the sustainable use of natural resources and in particular their environmental impacts over the full life cycle

Climate Change



Biodiversity Loss

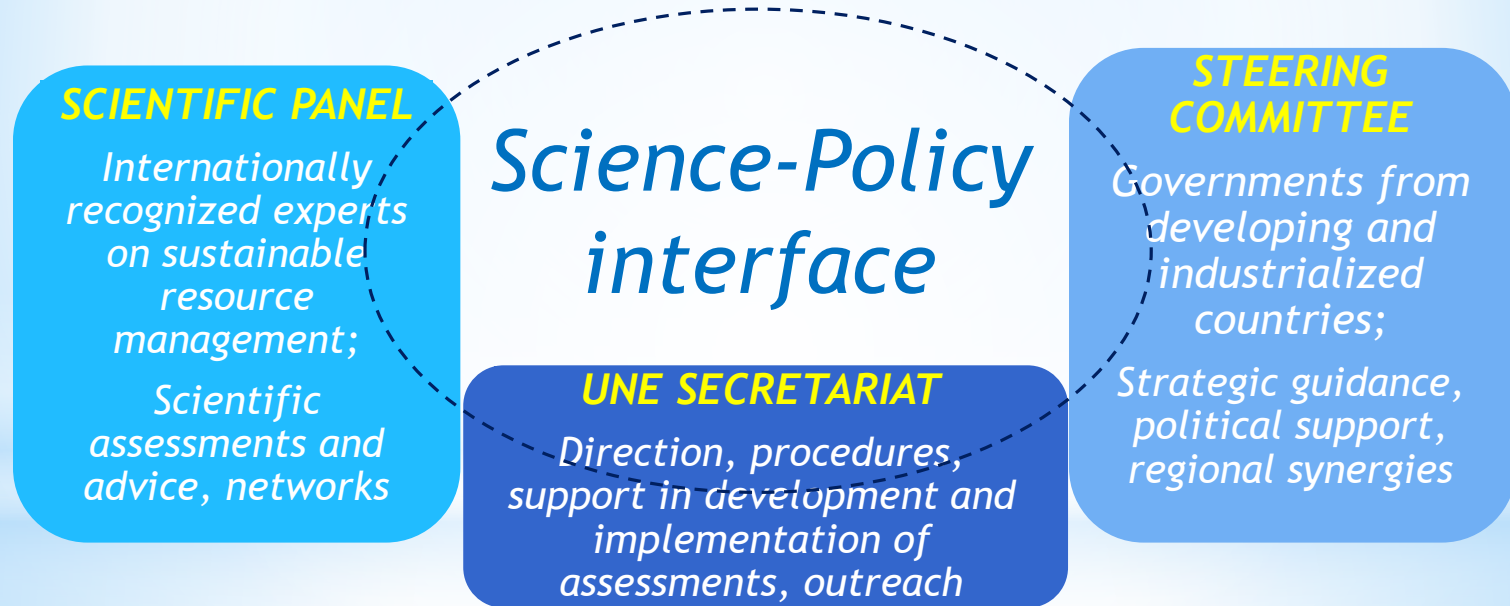


Resource Efficiency





IRP STRUCTURE

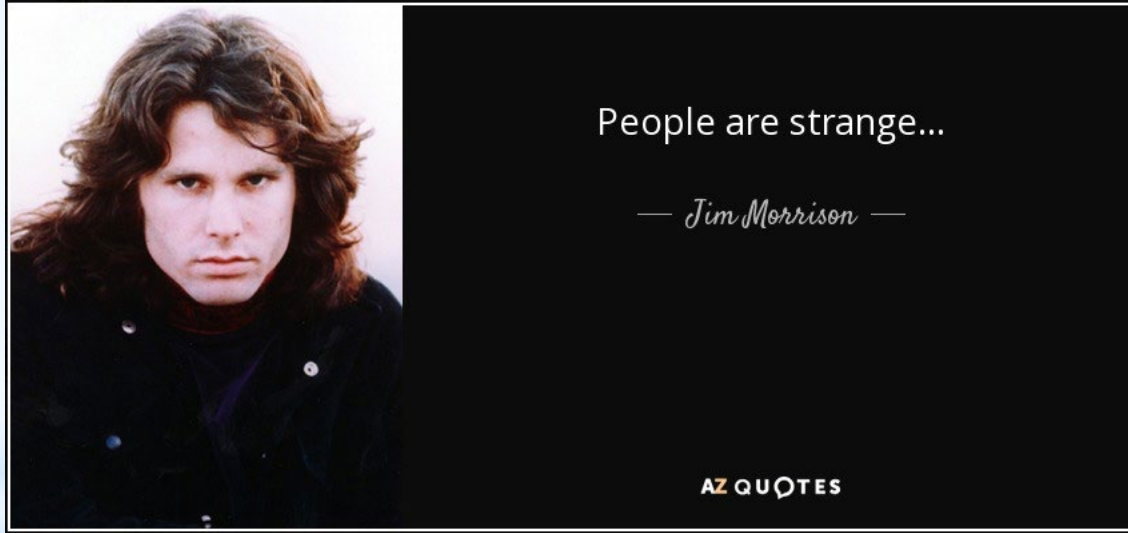




*25 reports published
from 2007*

<http://resourcepanel.org/>

OUR WORLD ...

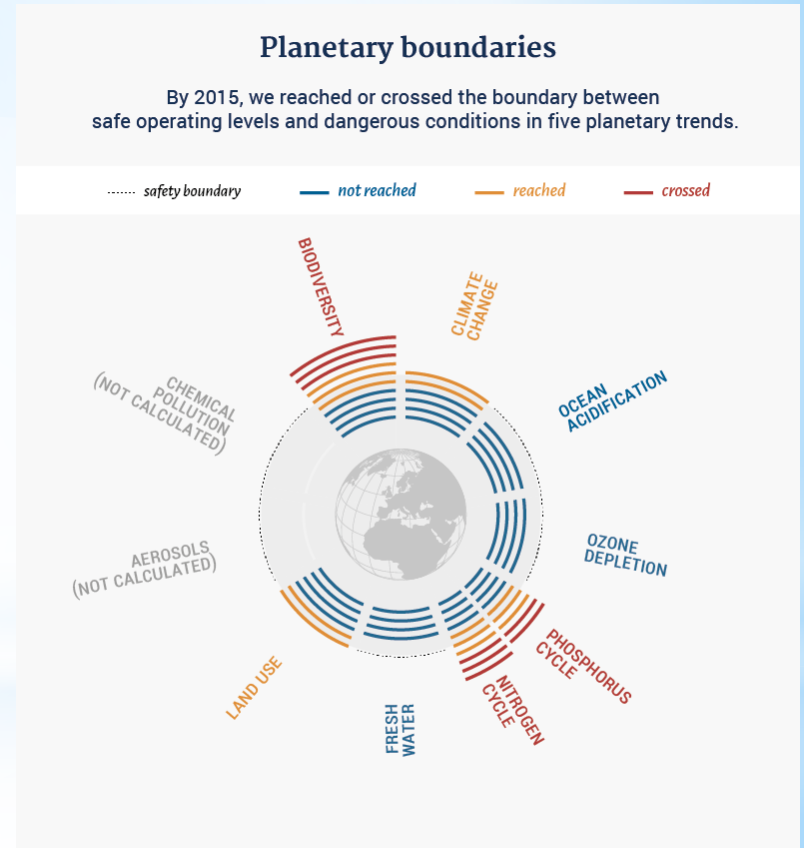


***WE WANT CHANGES ...
BUT WE DO NOT WANT TO CHANGE***

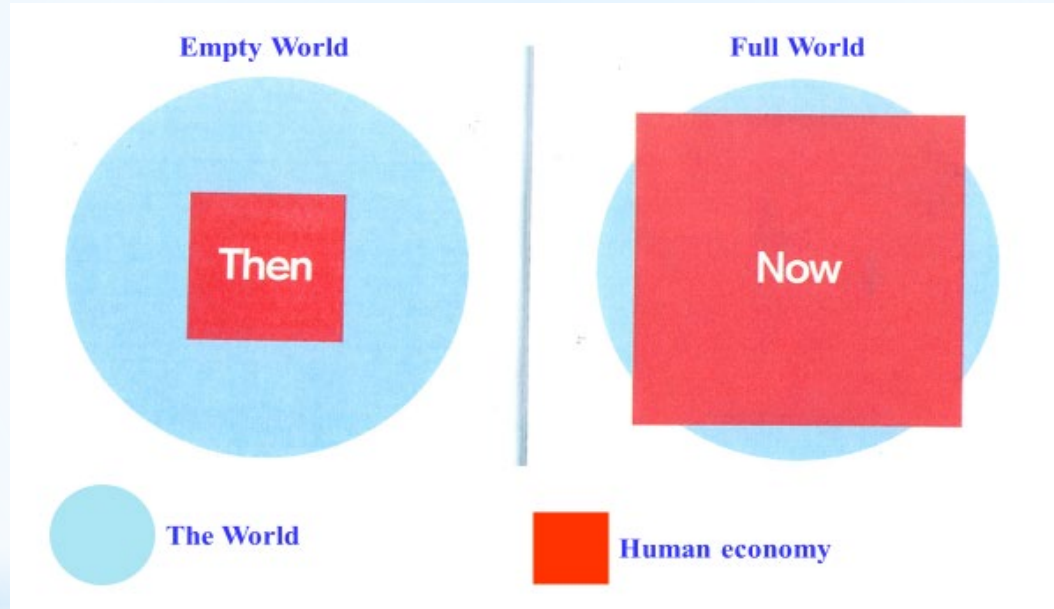
For the first time in a human history we face the emergence of a **single, tightly coupled human social-ecological system of planetary scope**.

We are more **interconnected and interdependent** than ever.

Our individual and collective **responsibility** has enormously increased.



EMPTY WORLD AND THE FULL WORLD



Source: Club of Rome: Simplified after Herman Daly

Labour and Infrastructure
limiting factors of human
wellbeing

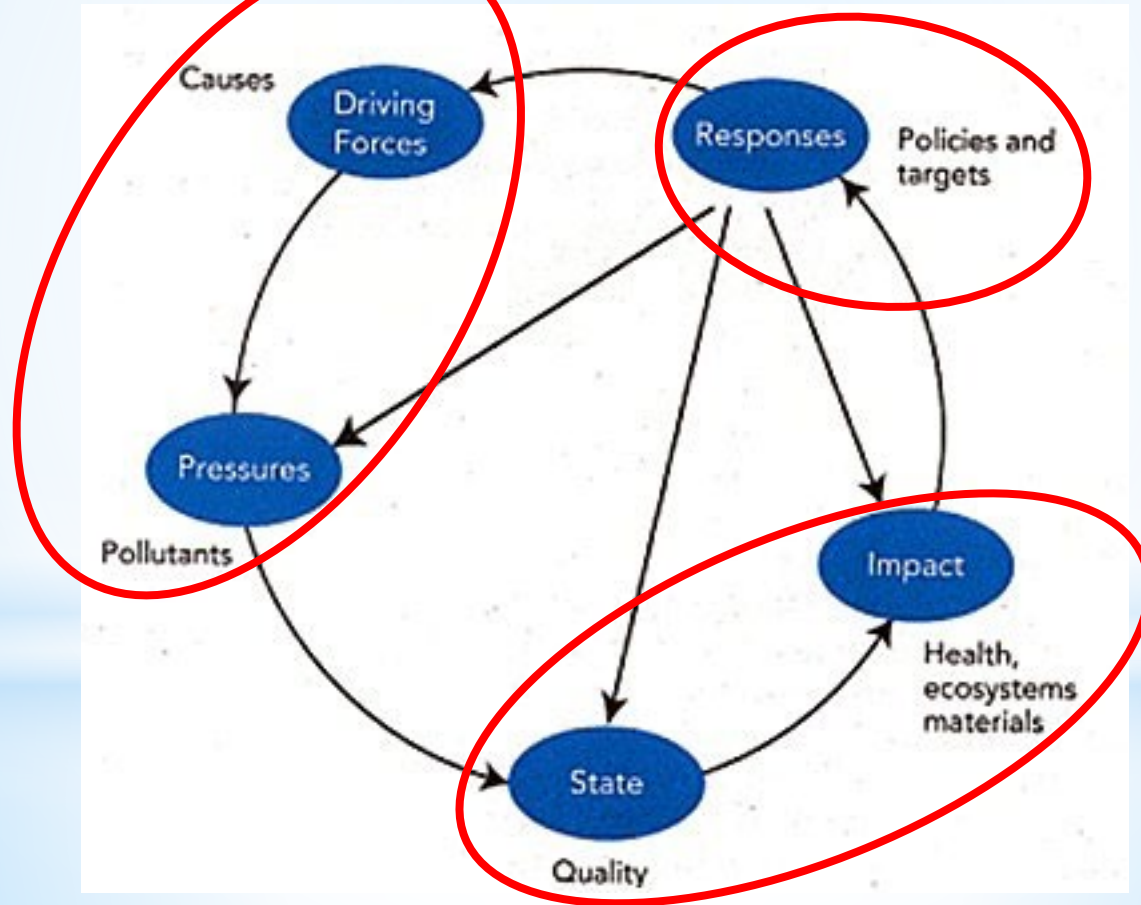


*Natural resources and
Environmental sinks* limiting
factors of human wellbeing

In the 21st Century we do not have any more the luxury of thinking and acting based on short term logic and interests



DPSIR FRAMEWORK



OUR ECONOMY ...

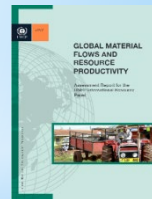


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GLOBAL MATERIAL FLOWS AND RESOURCE PRODUCTIVITY (1970-2017)



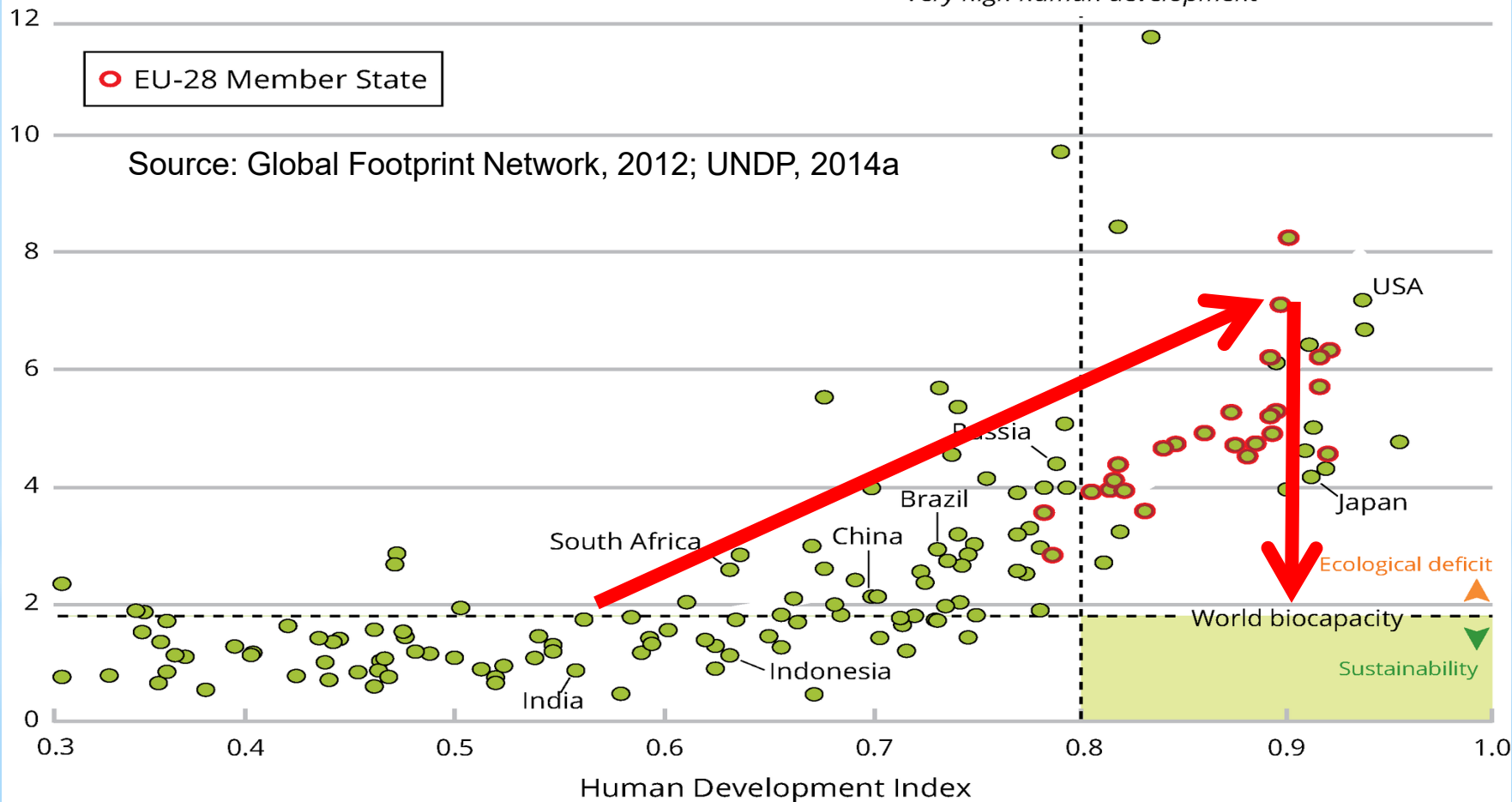
- **Consumption** has been stronger driver of growth in than population growth
- **High-income countries** are currently consuming **10 times more** per person than low-income countries
- **Global material productivity** - USD per kg - started to decline around the year 2000. The decline is attributable to a shift in the share of global output from highly material productive economies to less productive economies.
- **Global material resource** use is expected to reach nearly 90 billion tonnes in 2017 and may more than double from 2015 to 2050. The level of wellbeing achieved in wealthy industrial countries **cannot be generalised globally based on the same system of production and consumption**



DEVELOPMENT TRAJECTORY ...

Ecological footprint
(hectares per person per year)

'Very high human development'



Price Signals:

Financial Capital Overvalued

Human Capital Undervalued

Natural Capital not Valued



Market

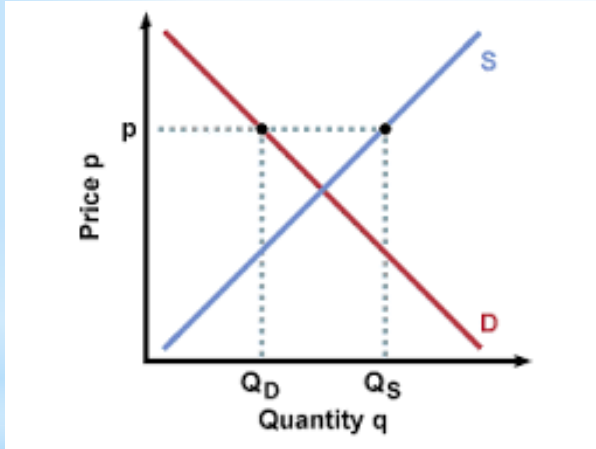
Producers/Consumers

Rational Behaviour



Economic model

Inbuilt Economic, Social, Environmental Imbalances



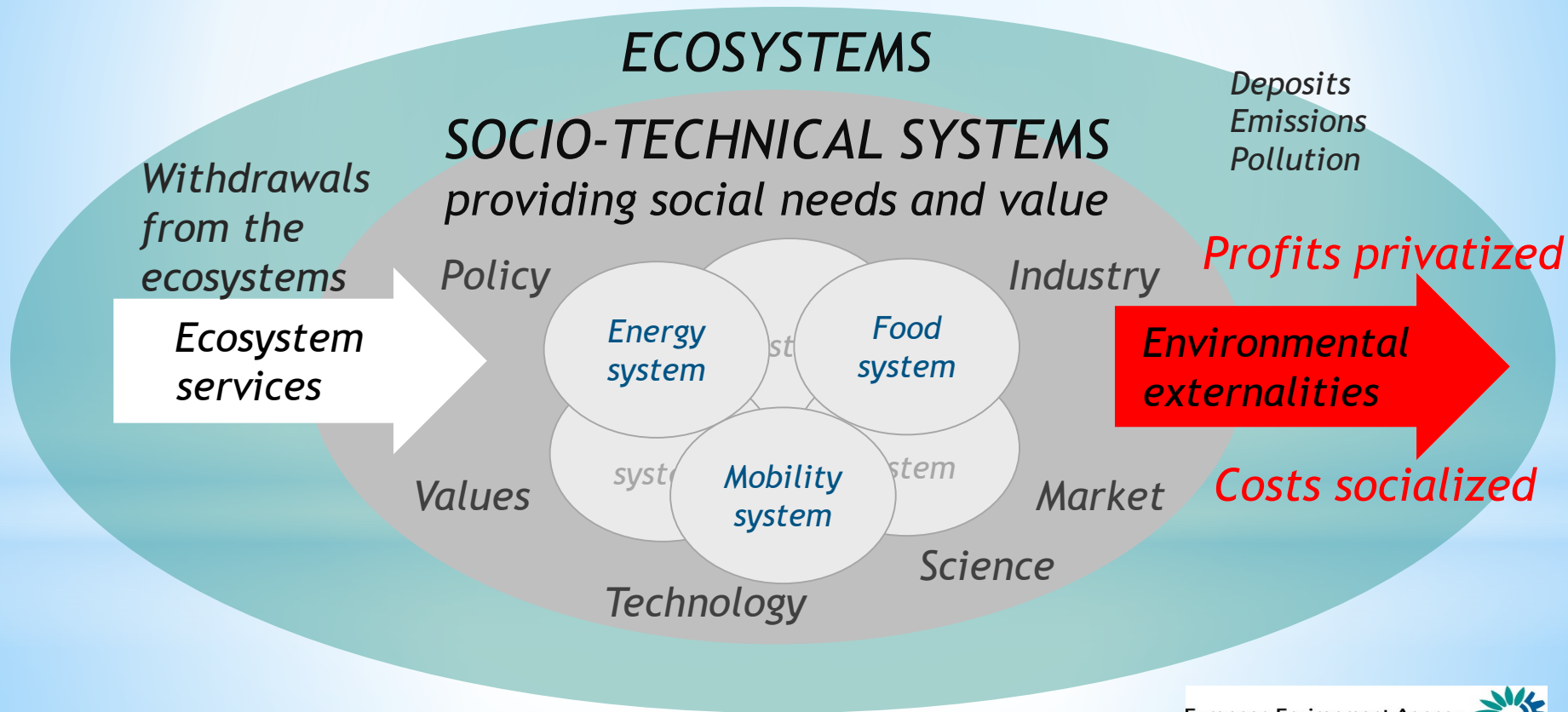


*In the mid-term, except in specific cases,
resource shortage will not be the core
limiting factor of our (economic)
development ...*

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

LIVING WELL WITHIN ECOLOGICAL LIMITS

ECONOMIC SYSTEM FUNCTION OF ECOSYSTEM



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

Progress per capita³, globally, 1990-2010, real terms

Considerations

Gross Domestic Product

Human Development Index

Genuine Progress Indicator¹

Inclusive Wealth Index²

-0,1

-0,2

0,8

2,0

Economic

Capital

Social

Natural



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)

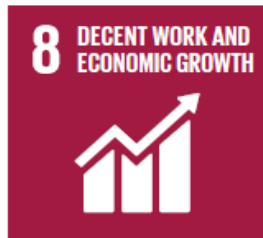


*It is not helping if
you are walking
faster,
if you are walking in
the wrong direction!*

AND **OUR COMMITMENT**
OUR OBLIGATION

THE GLOBAL GOALS

For Sustainable Development





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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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SDGs DIRECTLY DEPENDENT ON NATURAL RESOURCES

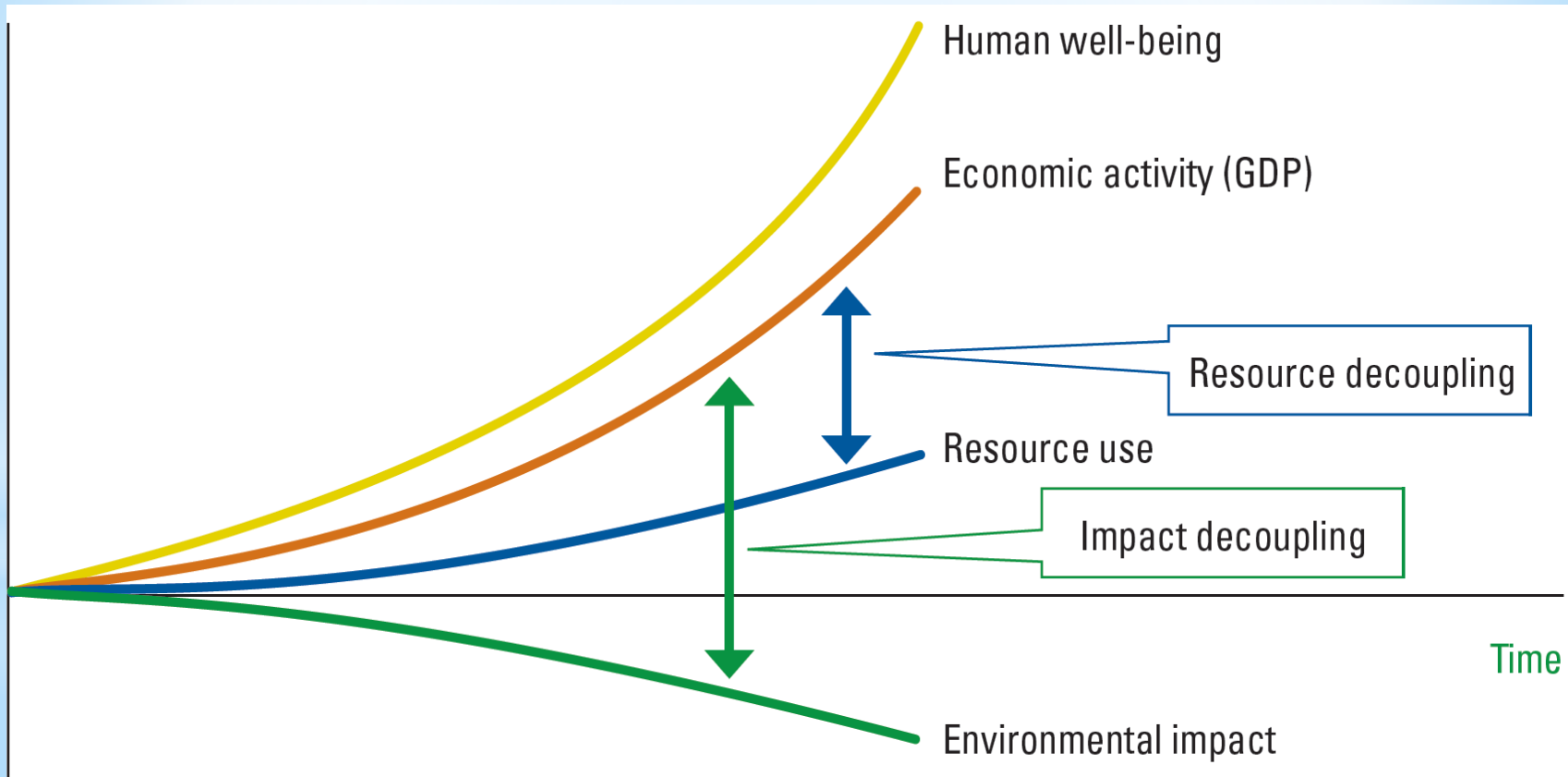


RESOURCES *THE MISSING LINK*



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DECOUPLING IS THE IMPERATIVE OF MODERN ENVIRONMENTAL AND ECONOMIC POLICY



AN IMPLEMENTABLE PARADIGM FOR SUSTAINABILITY TRANSITIONS



***Essential development needs
and provisioning systems***

DUAL DECOUPLING
FOR INCLUSIVE AND SUSTAINABLE GROWTH
LINKING DEVELOPMENT AND SUSTAINABILITY:

*I. increasing wellbeing per unit of
resource use;*

*II. decreasing environmental pressures
per unit of resource use*

***Natural and social capital**
required to underpin sustainable development*

CLIMATE

CARBON MANAGEMENT

LAND

WATER

ENERGY

MATERIALS

DECOUPLING

RESOURCES

PILLARS FOR EFFICIENT CLIMATE CHANGE POLICY

*SUPPLY SIDE
SOLUTIONS*

*DEMAND SIDE
SOLUTIONS*

*NATURE BASED
SOLUTIONS*

*Energy,
Carbon management*

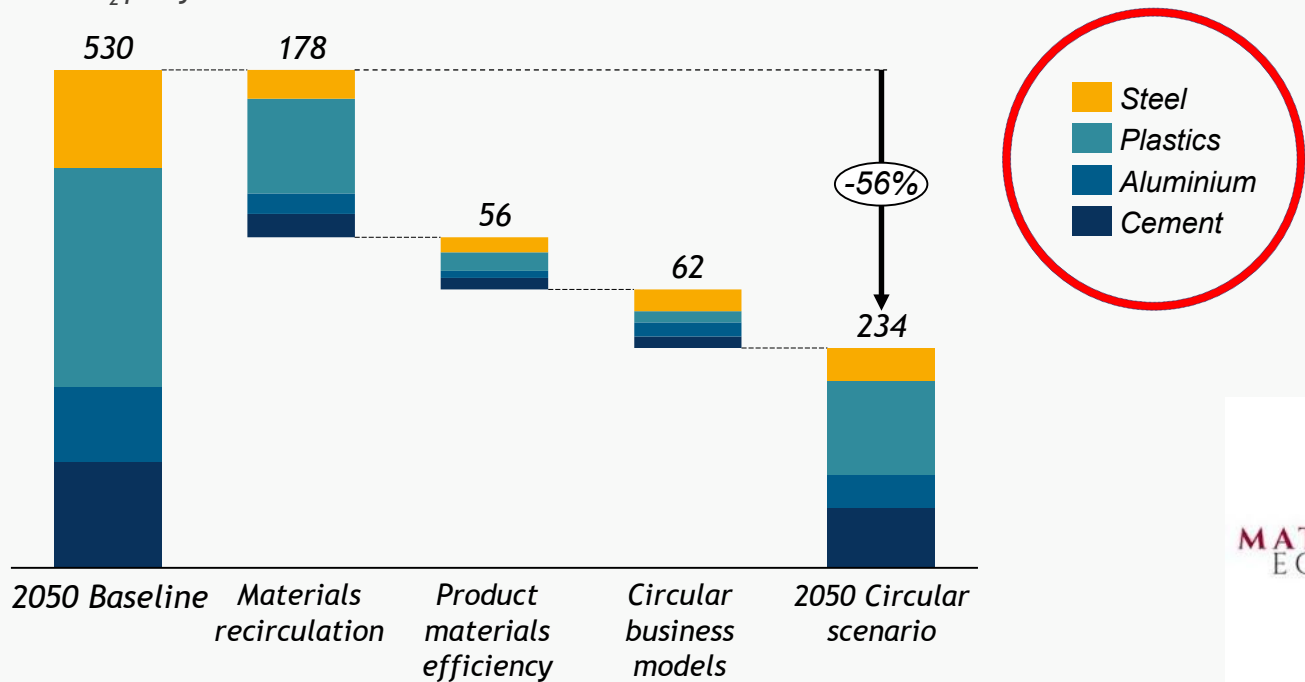
*Circular Economy,
Land, Water,
Materials
Management*

*Eco-system services
Environmental sinks*

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

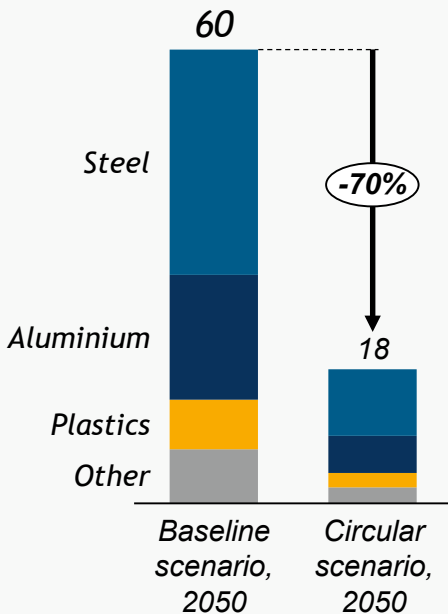
EU emissions reductions potential from a more circular economy, 2050

Mt CO₂ per year

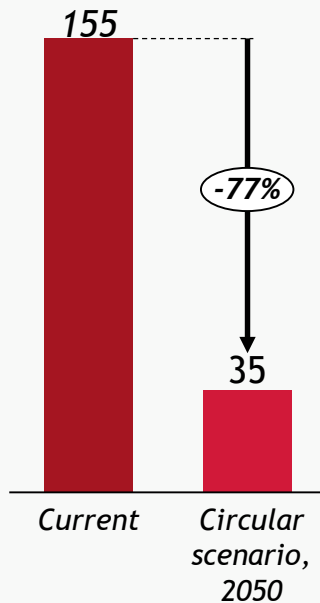


A **SHARED MOBILITY** SCENARIO IS A HIGHLY ATTRACTIVE VISION FOR **PASSENGER CARS**

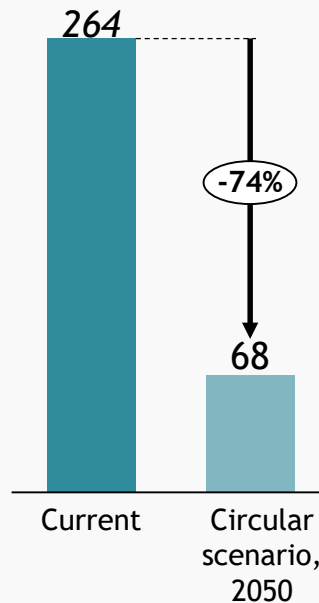
*CO₂ impact of materials
Mt CO₂ per year, Europe*



*Total cost of ownership
EUR per 1000 pkm*



*Externalities and cost
to society
EUR per 1000 pkm*



pkm = passenger kilometre



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

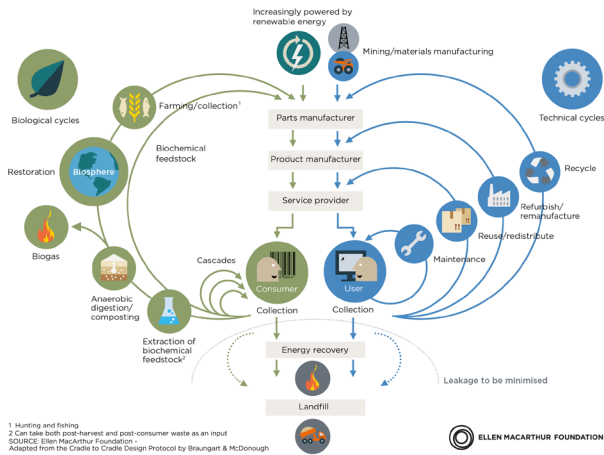
*... but the environmental and health
consequences caused by this excessive and
irresponsible use of resources will be!*

CIRCULAR ECONOMY *PROSPECTS*

CIRCULAR ECONOMY

- Started as an **environmental initiative**
- In two years it was **transformed to an economic based initiative** with positive environmental and health consequences
- In reality it should be seen as a **part of the bigger picture of societal and cultural transformation** needed to sustain the humanity and its prosperity.

CIRCULAR ECONOMY - an industrial system that is restorative by design



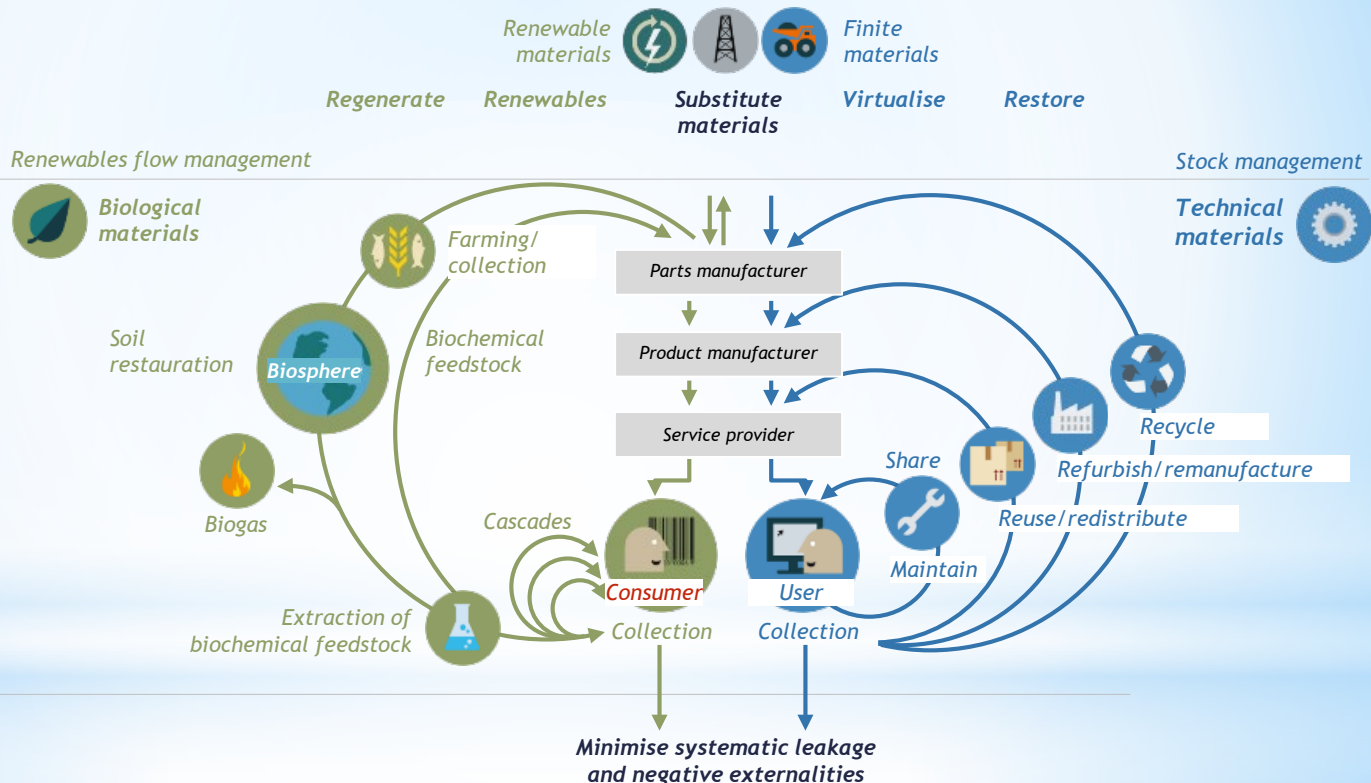
OUTLINE OF A CIRCULAR ECONOMY SYSTEM

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 Environment; Stiftungsfonds für Umweltökonomie und Nachhaltigkeit;

MOBILE PHONE ... OUR POCKET PARTNER

- *Wedding ring: 10 tonnes of gold ore
10 kilos of mobile phones*
- *Less than 10% recycled*
- *In EU more than 100 mil each year in the drawers*

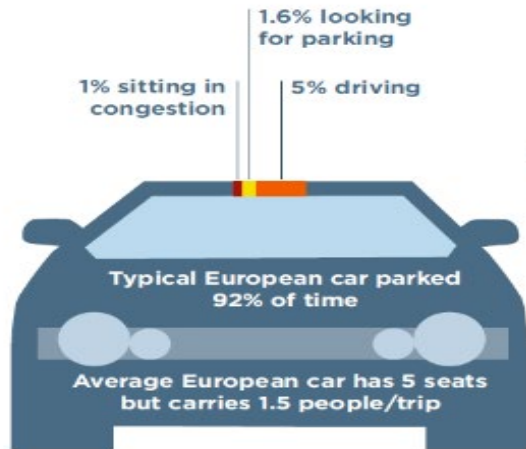


*2.4 tonnes of gold
25 tonnes of silver
1 tonne of palladium
900 tonnes of copper*

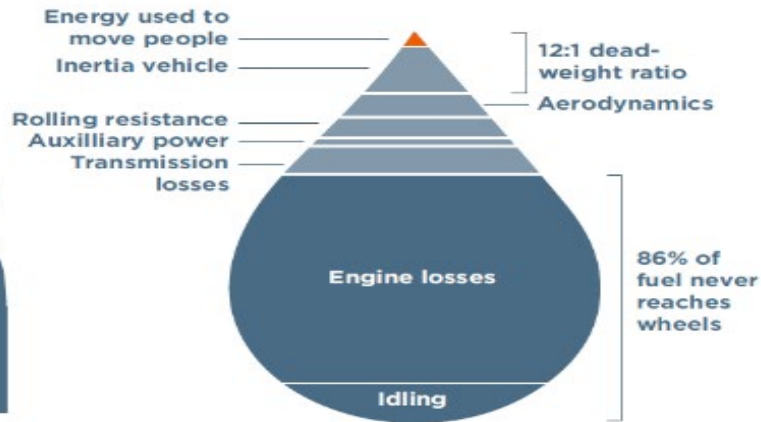


STRUCTURAL WASTE IN THE MOBILITY SYSTEM

CAR UTILISATION

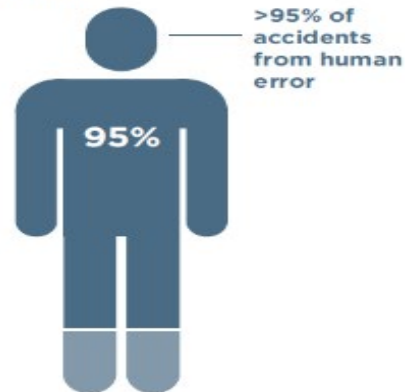


TANK-TO-WHEEL ENERGY FLOW - PETROL



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

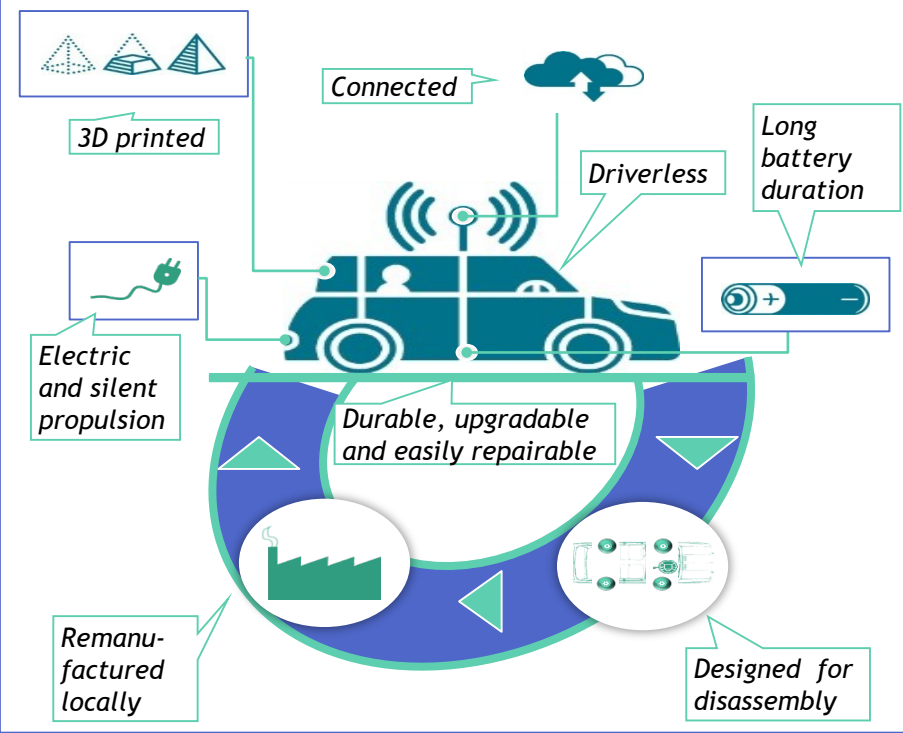
50%

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

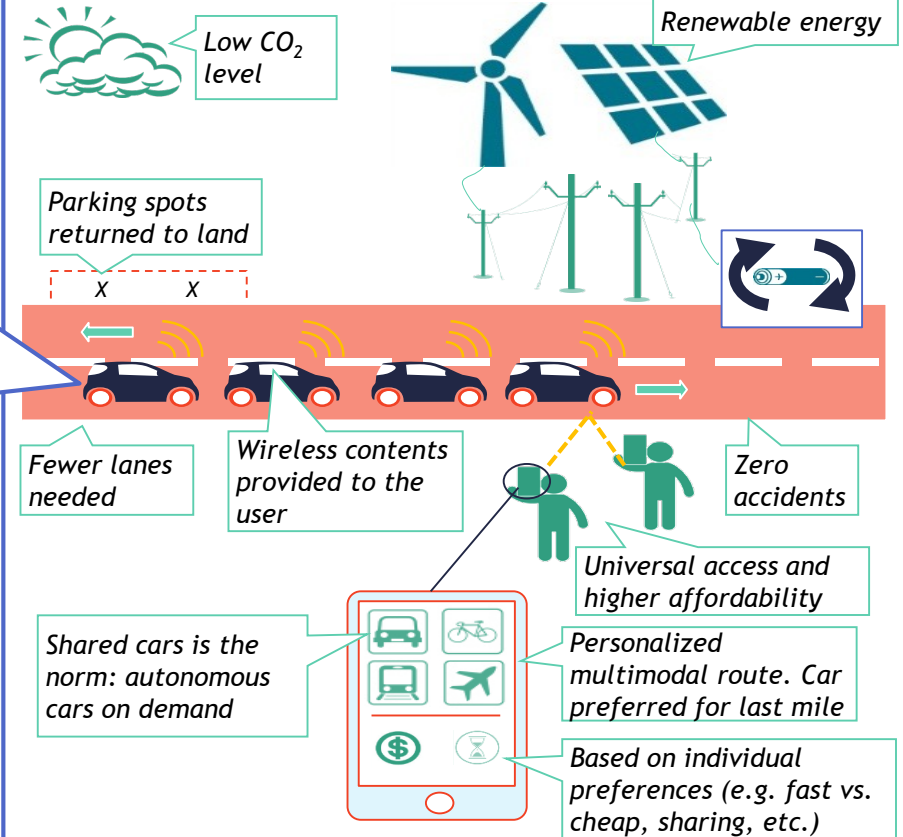
A FUTURE END-STATE COULD LOOK VERY DIFFERENT FROM TODAY'S MOBILITY SITUATION

Illustrative vision

The car of tomorrow



The mobility system of tomorrow



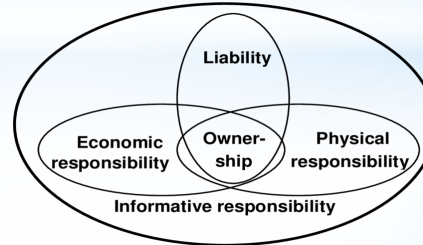
Design of the products (ECO Design)



Business models - From owning to using and sharing

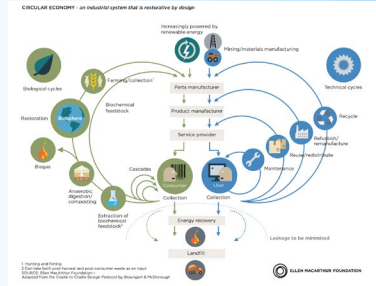


Extended producers Responsibility (EPR)



WHERE SHOULD OUR FOCUS BE IN THE NEXT STEPS OF CE DEVELOPMENTS

- *Social aspects of the circular economy*
- *Retaining value in the circular economy*
- *Sustainable financing and digital transformation as necessary enablers of the circular economy*
- *Linking circular economy to the climate change, bio-economy and urban systems*



TO CONCLUDE

**WE HAVE TO FIX A BROKEN
COMPASS
(PAVAN SUKHDEV)**

**NEW ECONOMIC MODEL BASED ON
SUSTAINABLE CONSUMPTION AND
PRODUCTION (SCP) INTEGRATING ALL
PILLARS OF SUSTAINABILITY IS**

**NECESSARY
AND UNAVOIDABLE**



ASSESSING GLOBAL RESOURCE USE

2017 IRP Report

Recommended policy strategies

- 1. Set targets and measure progress*
- 2. Act on key leverage points across all levels of governance*
- 3. Take advantage of leapfrogging opportunities*
- 4. Implement a policy mix that builds incentives and corrects market failures*
- 5. Promote innovations toward a circular economy*
- 6. Enable people to develop resource efficient solutions*
- 7. Unlock the resistance to change*

CURRENT FOCUS FROM THE IRP

Address a request from the second session of the **UNEA - United Nations Environment Assembly (Resolution 2/8)**

- Provide reports on the state, trends, and outlook of **sustainable consumption and production**.
- Prepare a global assessment on **natural resource use and management** (to be submitted to the UNEA4 in 2019).

Presented to the **G7 and G20**: Intellectual work on the **linkages between resource efficiency and economic growth** as requested by the two groups in 2016 and 2017.

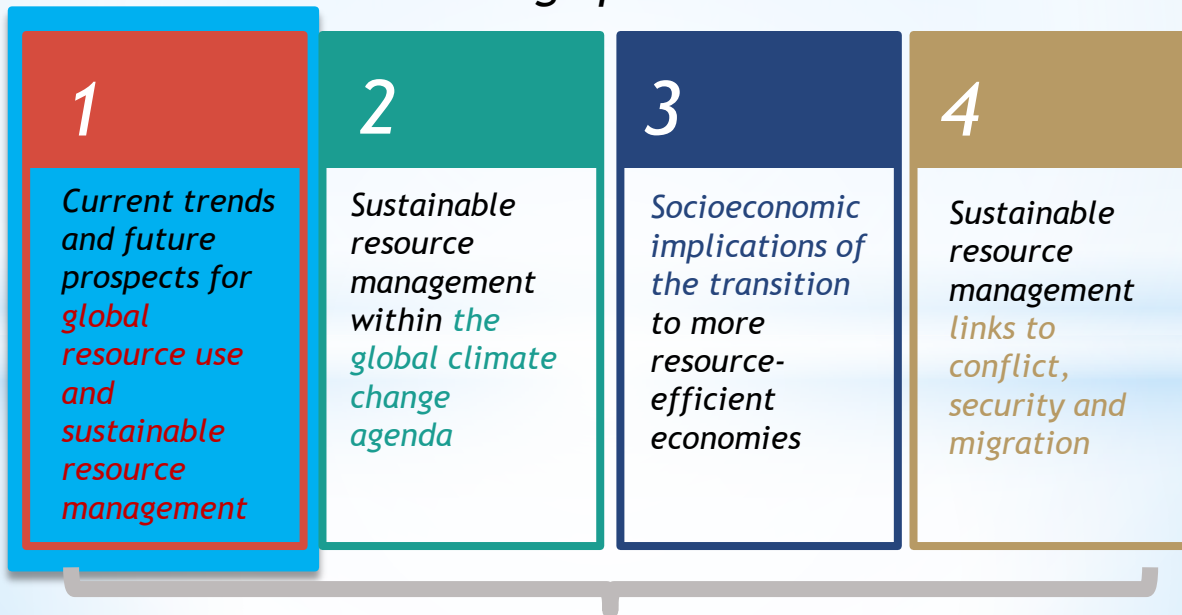
21st Meeting of the International
Resource Panel, Lima, Peru, 2017





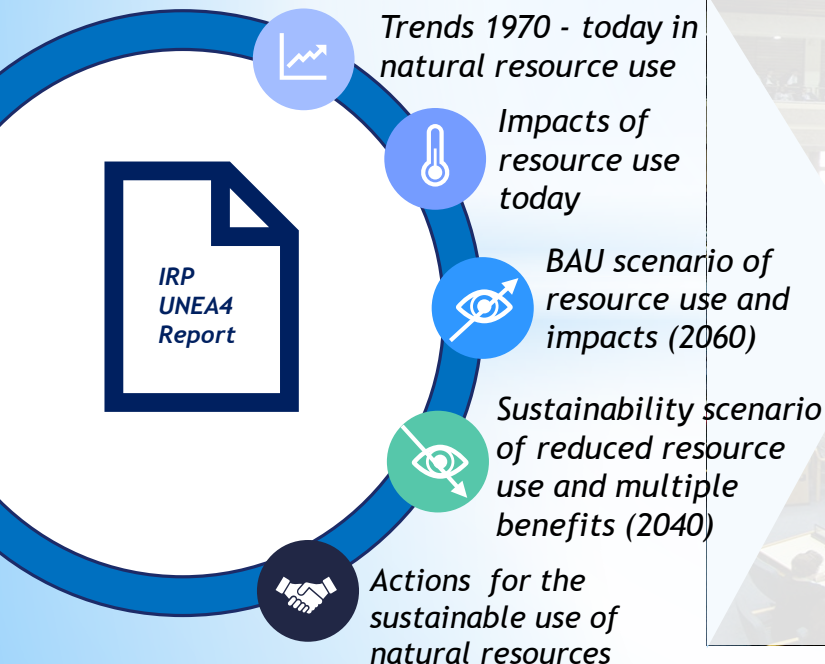
THE WAY FORWARD: 2018-2021 STRATEGY

High Impact Priority Areas for IRP's upcoming knowledge production



To engage the private sector more in the Panel's scientific and policy results

Structure of the report



Purpose of the report

- contribute to a better understanding of sustainable development from a natural resources perspective
- provide science-based options for policy innovations on how to decouple economic growth from environmental degradation while enhancing human wellbeing

RESPONSIBILITIES OF THE BUSINESS SECTOR

Change the risk management to be aligned with the SDGs

*From being a pure product or service
providers managing the risks of the company
through profit maximisation*



*To socially responsible companies managing
also the risks of the society*

SYSTEM INITIATIVE ON ENVIRONMENT AND NATURAL RESOURCE SECURITY

World Economic Forum - Annual Meeting 2018



Complexity and scale of these challenges requires a space that allows actors with responsibility for those environmental governance mechanisms to be able to consider and experiment with both new forms of collaboration and more „systemic“ approaches ... through promoting multi stakeholder cooperation, more agile governance (including sub-state actors, such as cities, states and provinces), the use of new technologies, and enhanced accountability and transparency.

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.*

GOVERNANCE



REDEFINING SOVEREIGNTY

- If we are to *avoid globally extensive and inter-systemic crisis and frequent conflicts* than let's get serious about implementing what we have agreed in SDGs. Changes are *unavoidable* and humans are supposed to be intelligent. It is high time to prove it.
- Change will not appear by waiting for the leadership of others, *be the leaders* on your level of governance and authority ... in politics, in business, academia, civil society, in making your investment decisions ...

Any global transition is a major new opportunity for the innovation, new development opportunities, new jobs

*And alternative ...
I would rather not think and talk about it!*

The CE genie is out of the bottle

(Apple, HP, Siemens, Alstom, BMW, Renault, Michelin, Veolia, Dow Chemicals, Walmart, Arup, BSF, CISCO, Caterpillar, Kingfisher, Ikea, Microsoft, Philips, DSM, Solvay, SUES, Steelcase, Unilever, Tetra Pak, Google, Danone ...)

Major economic actors have moved.

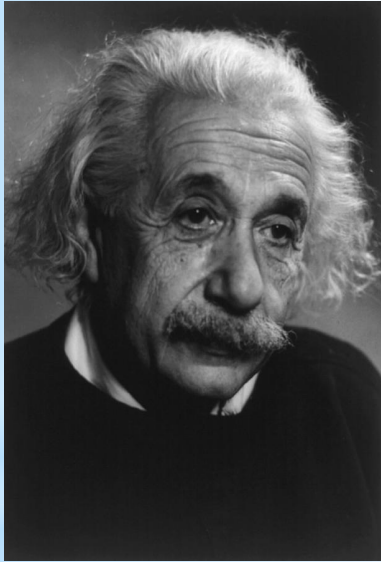
CE connects competitiveness and sustainability.

CE is about transition to the SDG compliant economy.

How to overcome short termism inbuilt in our democratic political systems and institutions (public, financial...) which is in fundamental conflict with the system change needed?

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”



Guy McPherson:

"If you think the economy is more important than the environment (and health), try holding your breath while counting your money".



International
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THANK YOU

For more information

Contact IRP Secretariat at resourcepanel@un.org

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