



International
Resource
Panel



International Resource Panel
Science-Policy Interface in a
Natural Resources Management

JANEZ POTOČNIK
Co-Chair International Resource Panel - IRP
Partner SYSTEMIQ
Member Club of Rome

Who are we?

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 Management



Panel Co-Chairs:
Janez Potočnik and Izabella Teixeira

Steering Committee Co-Chairs:
Astrid Schomaker and Steven Stone

SCIENTIFIC PANEL

Internationally
recognized experts on
sustainable resource
management;
Scientific assessments
and advice, networks

Science-Policy interface

Head of Secretariat: Merlyn van Voore

UNE SECRETARIAT

Direction, procedures, support in
development and
implementation of assessments,
outreach

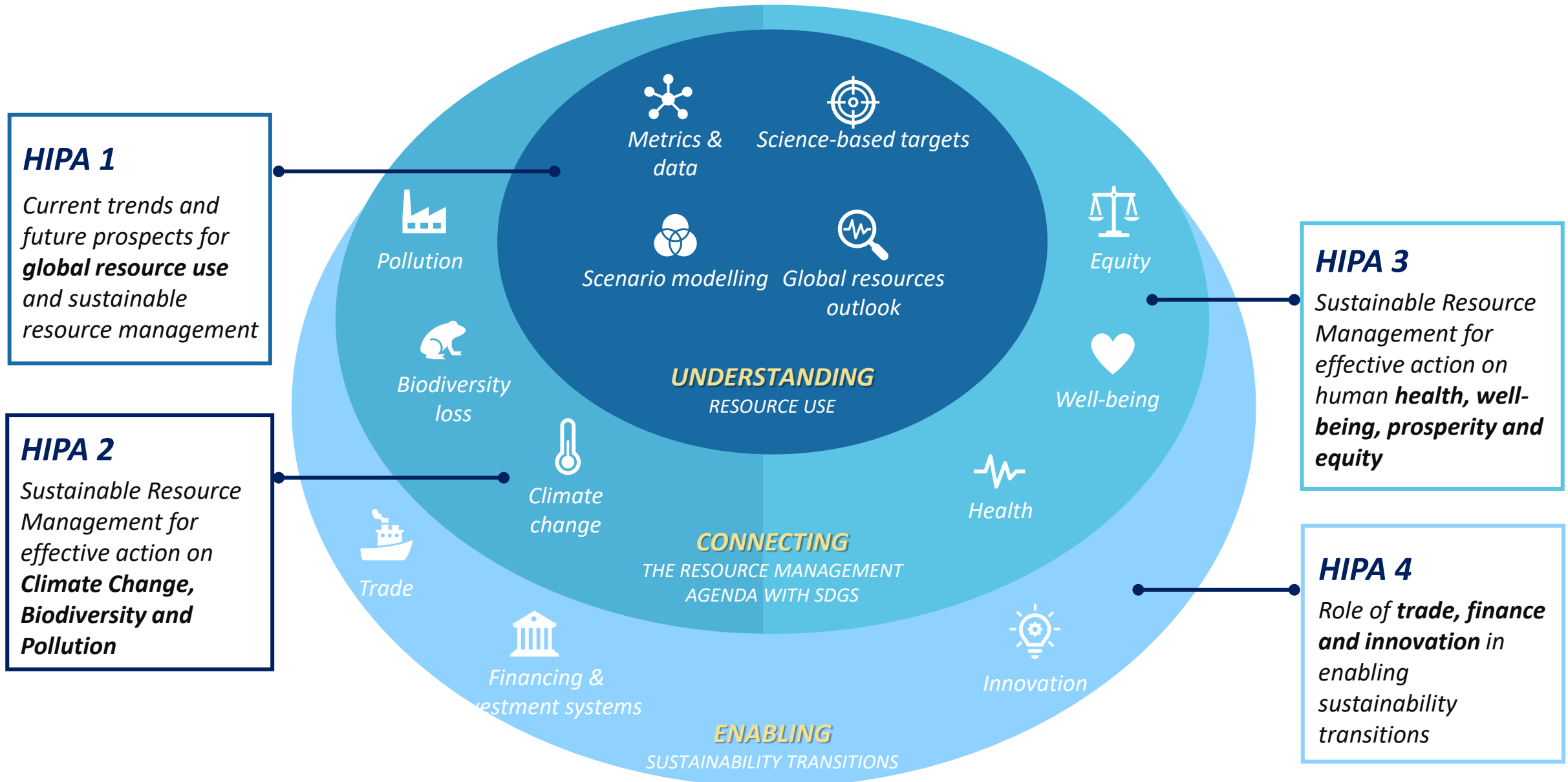
STEERING COMMITTEE

Governments from
developing and
industrialized countries;
Strategic guidance,
political support, regional
synergies

Strategic Partners



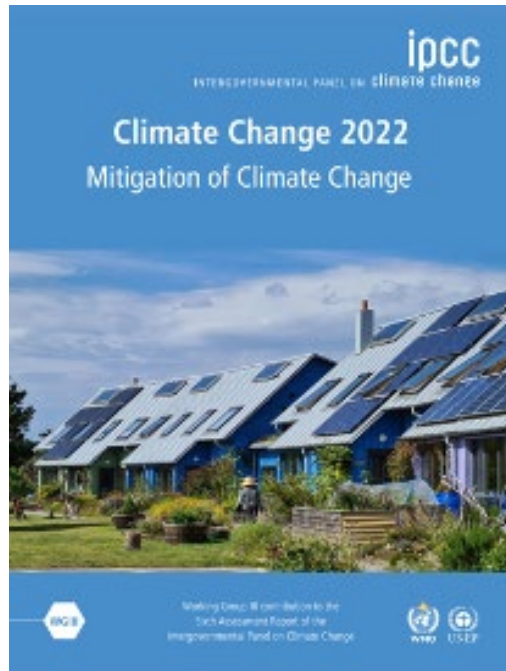
IRP's High Impact Priority Areas for 2022-2025



Resources - The Missing Link

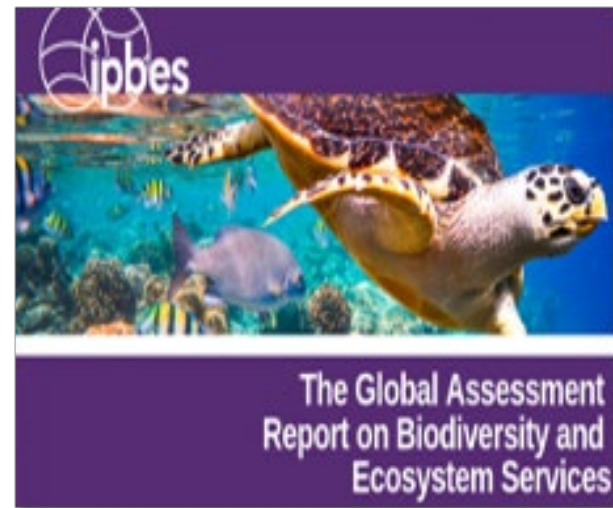
IPCC

Climate Change



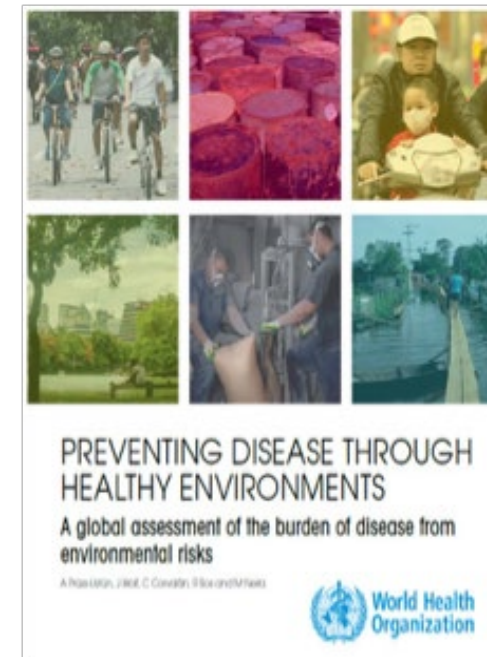
IPBES

*Biodiversity loss and
Ecosystem Services*



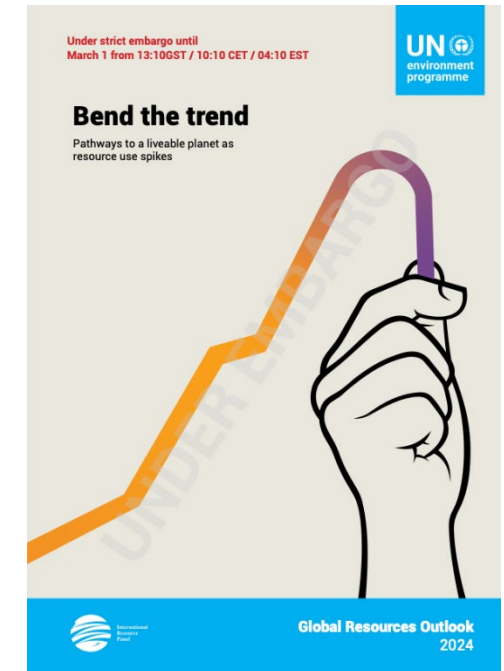
WHO

*Environment and
Health*



IRP

*Unsustainable
Resource Use*



Main Challenges

The diagnosis and context of the problem

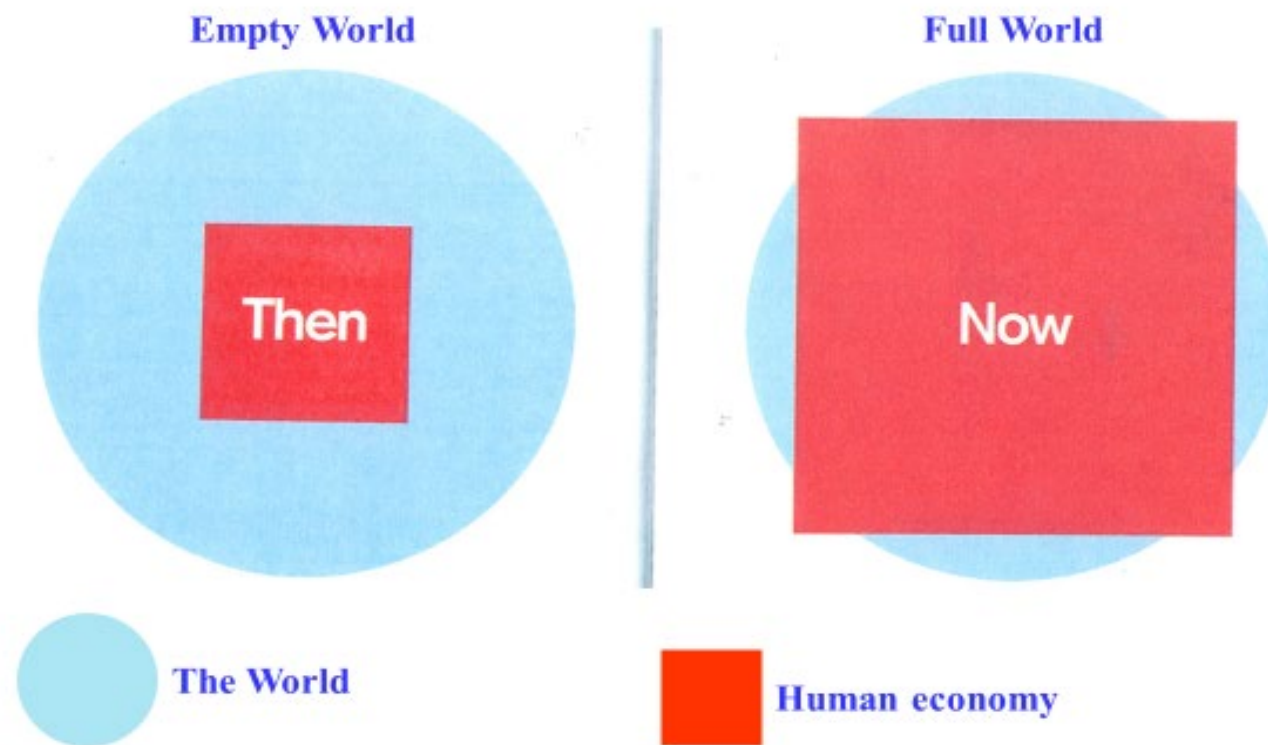


*For the first time in a human history, we face the emergence of a single, tightly coupled human **social-ecological system of planetary scope.***

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

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

From “Empty” World to “Full” World



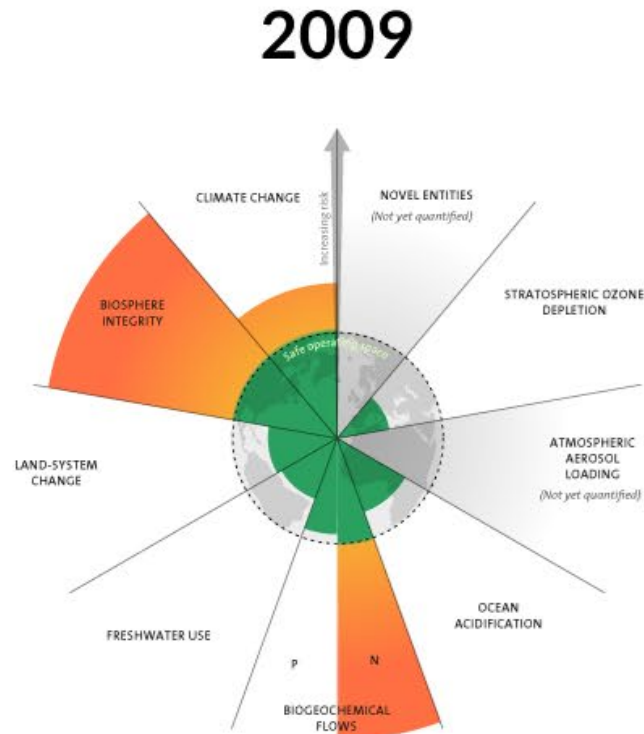
Source: Club of Rome: Simplified after Herman Daly

*Labour and Infrastructure limiting
factors of human wellbeing*

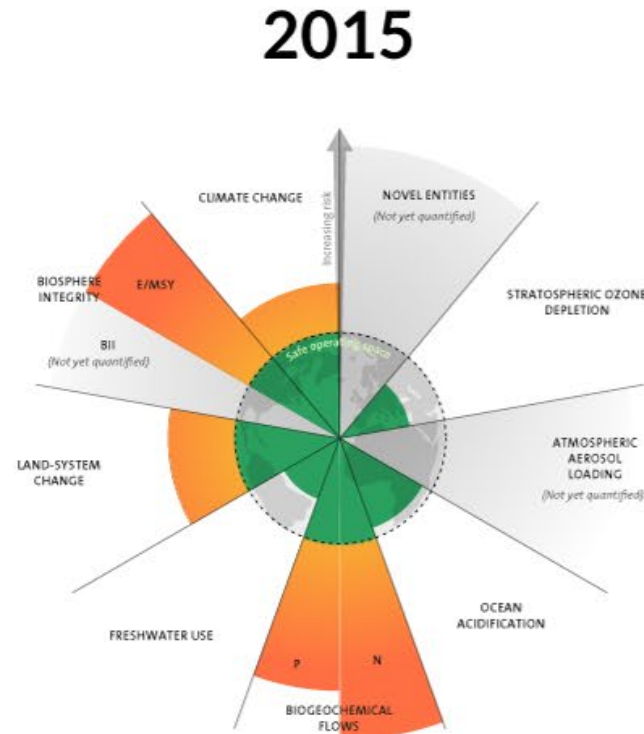


*Natural resources and Environmental
sinks limiting factors of human
wellbeing*

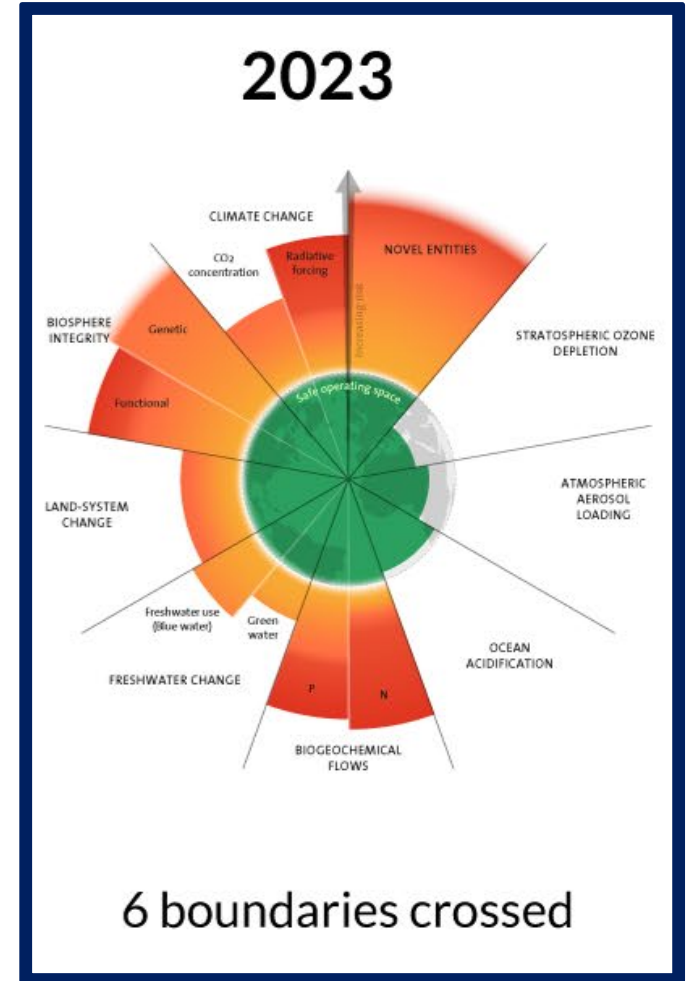
Planetary crises is making instability the norm



3 boundaries crossed



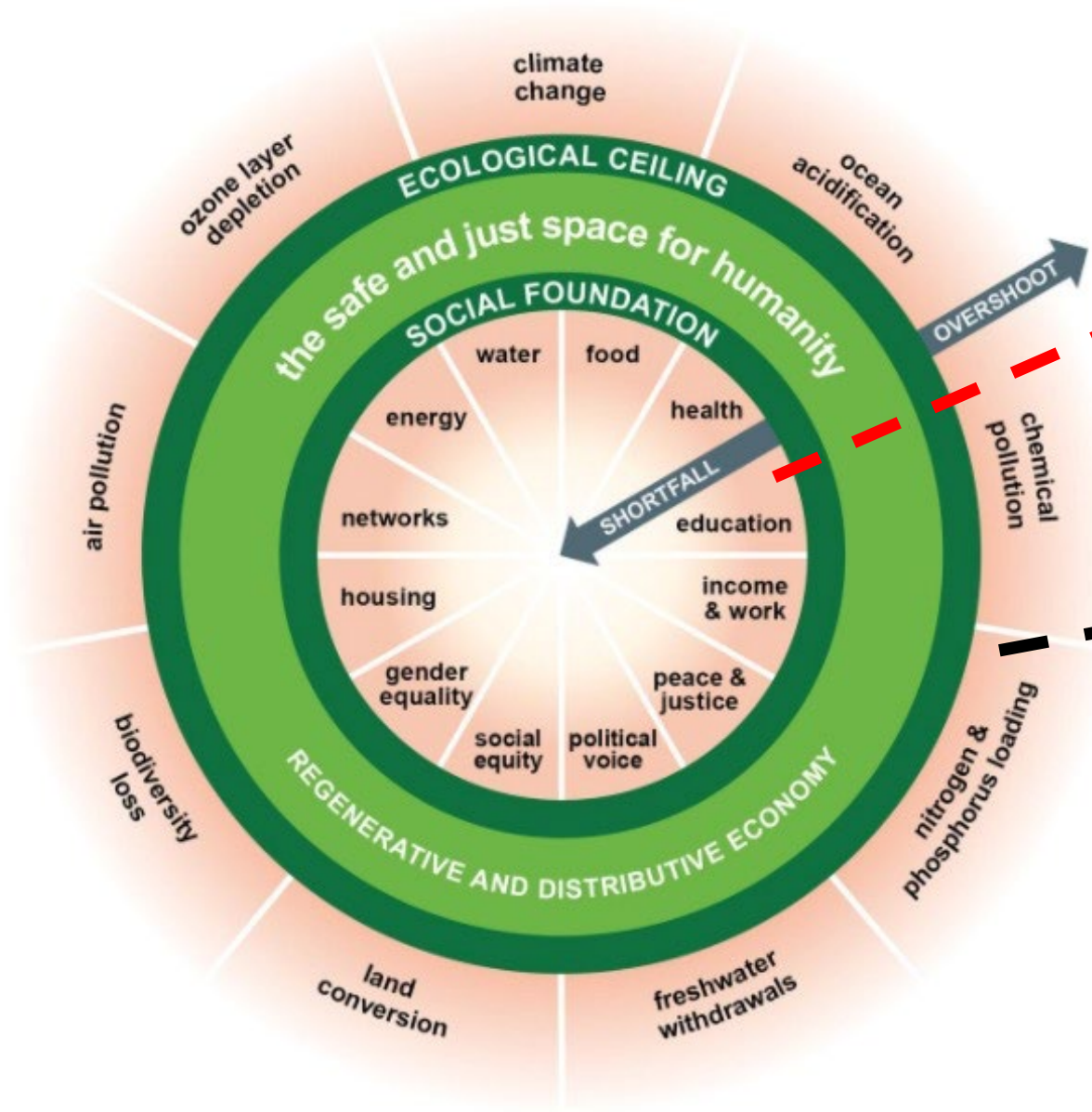
4 boundaries crossed



6 boundaries crossed

Source: Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023

A compass for human prosperity



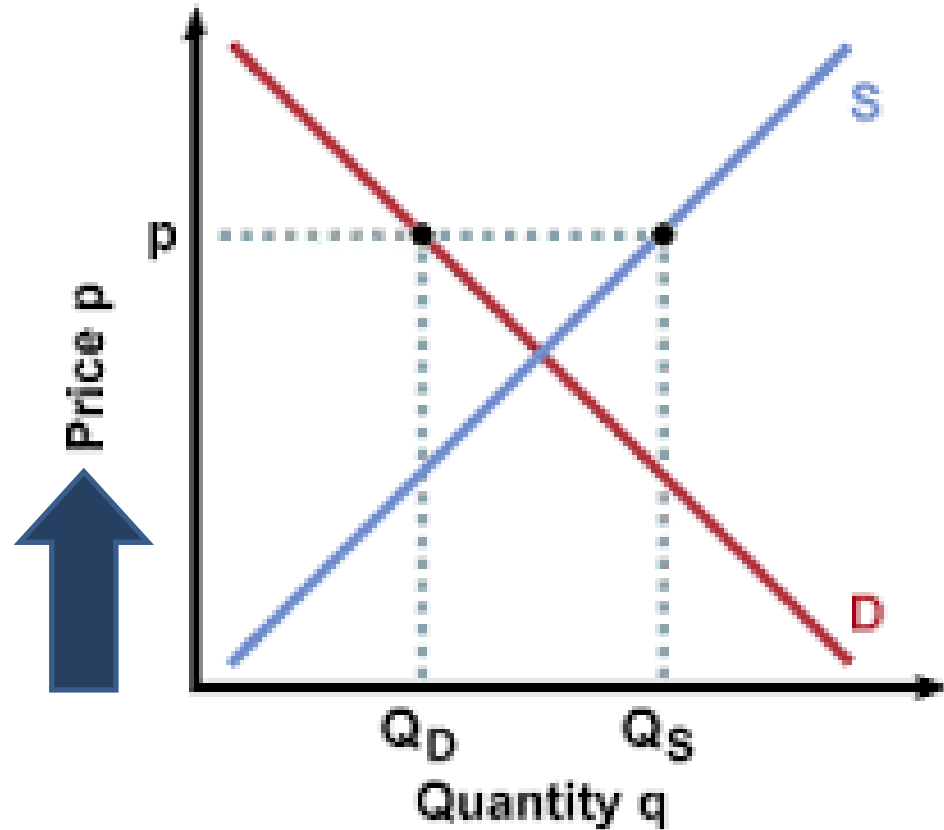
*Basis human needs
incl. minimum requirements
of resource supply*

*Outer limit by Planetary
Boundaries*

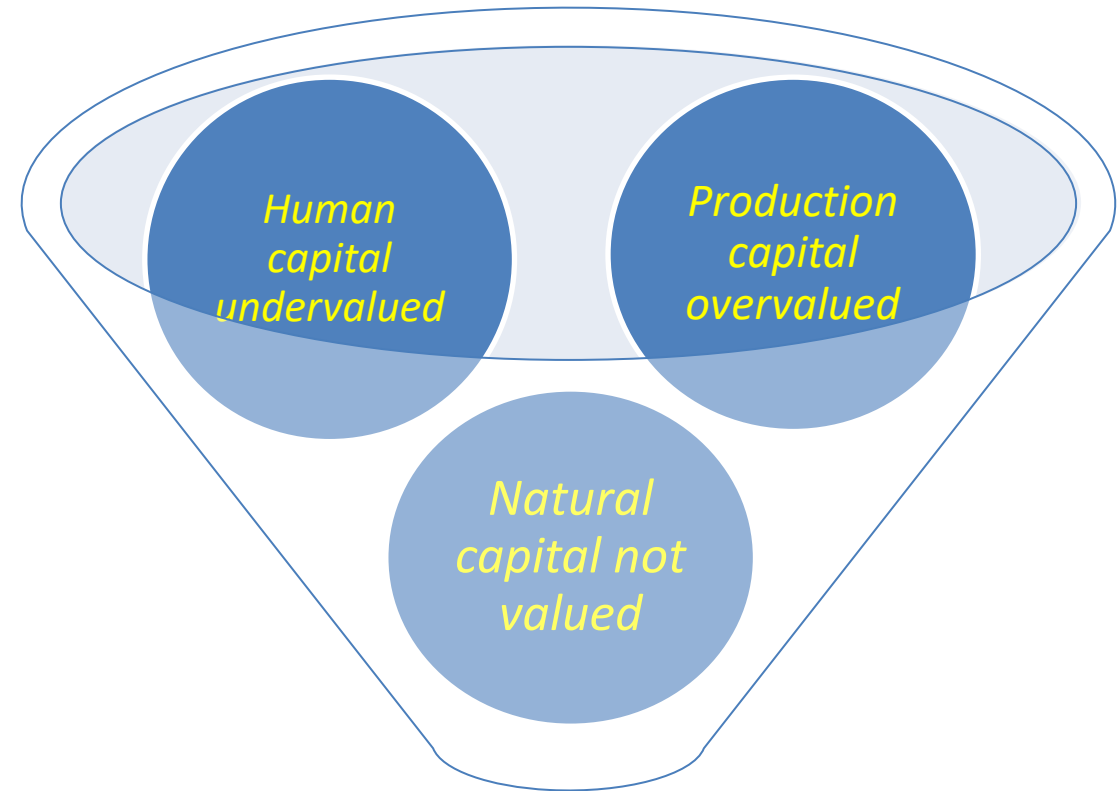
Adapted from Raworth 2017

The role of Markets: Confusing market Signals

*Producers/Consumers
Rational Behaviour*



Market Economy



*Economic, social and environmental
(in)balance*

Pavan Sukhdev: "Externalities are today's profits, tomorrow's risks and future losses"

Global Resource Outlook 2024

What is Science telling us

The Importance of Natural Resources

*Access to and use of natural resources have been in the human history **closely related to the level of the achieved wellbeing of the nations, but also to stability, security, conflicts, wars** (Access to Land, Water, Oil and Gas, Minerals, Precious Metals ...)*

*It was driving the **geo-political efforts of consumption countries to control the resource rich countries.***

*The whole history of the “colonialisation of nature”, is also central to **fairness and equity.***

Definition: Materials and Resources



Biomass: crops for food, energy and bio- based materials, wood for energy and industrial uses



Fossil fuels: covering coal, gas and oil, among other



Metals: such as iron, aluminum and cooper, among other



Non-metallic minerals: sand, gravel, limestone and minerals used for industrial applications



Land



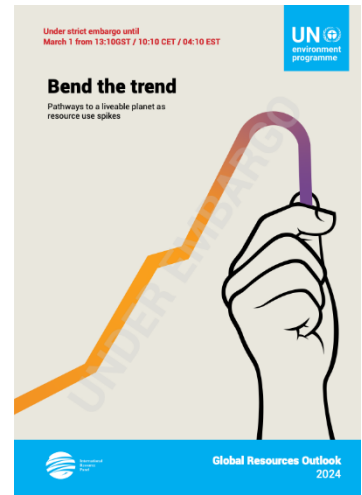
Water

Materials:

Everything
extracted from
the Earth

Resources:

Materials + Land
and Water



Economy Championed by Industrialised Nations is Wasteful and Unjust

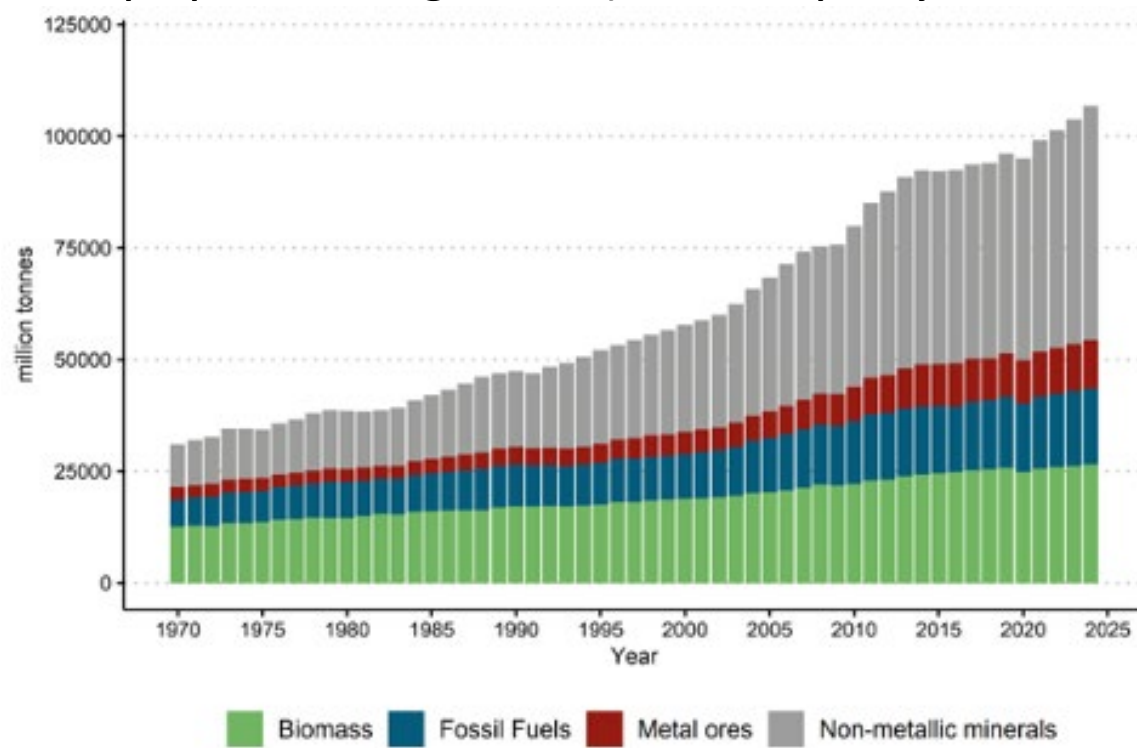
We must shift away from the prevailing resource wasteful economic approach based on maximising the output of sectors, simplistically defined by GDP, towards an economy that is efficiently meeting human needs and optimise human wellbeing. The current logic is both ethically and ecologically unsustainable. We must set the order right. Economy was invented to serve humans and our needs, and not the opposite.

GRO 2024

Natural resource use trends

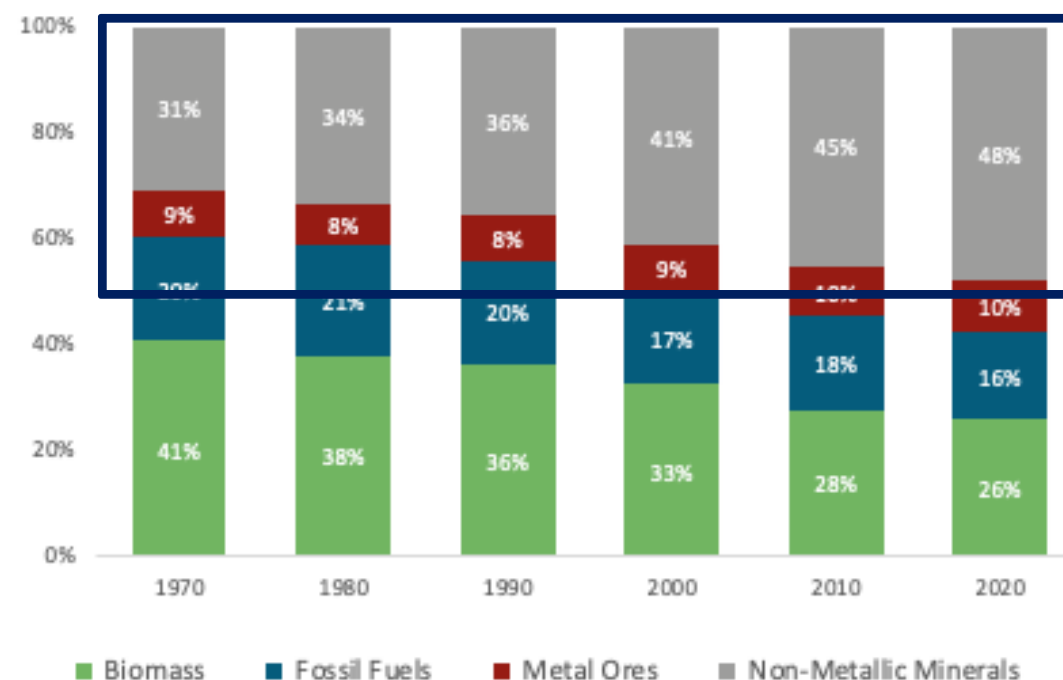
Trends: Global Material Use and Share in 1970-2023

Global Material Use has increased for more than a factor of 3 since 1970 due to urbanisation and industrialisation (and population growth) - 2.3% per year



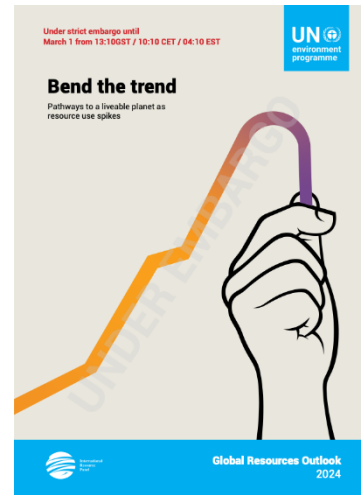
Global material extraction, four main material categories, 1970 – 2024, million tones.

... which is increasing also the share of Non-Metallic Minerals in Global Material Use



Global material extraction, four main material categories, 1970-2020, shares

Definition: Material footprint



Primary materials associated with final demand, independently of where they are sourced (domestically or abroad)

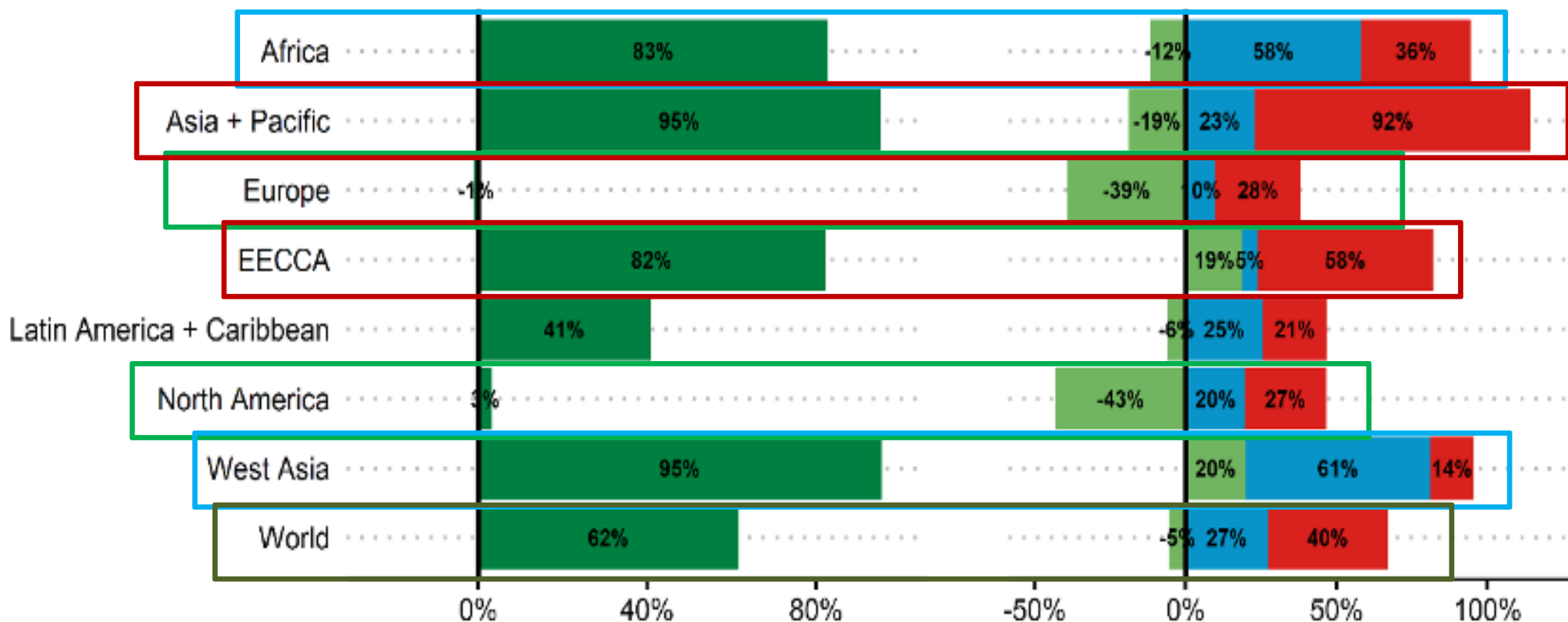
Material Footprint = Domestic Extraction + Raw Material Trade Balance

Domestic Extraction = Material harvested (agriculture, forestry and fisheries) or extracted (mining and quarrying) domestically

Raw Material Trade Balance = Import minus exports of raw materials required to produce materials and consumer goods

Trends: Drivers of Material Footprint 2000-2022, % by world regions

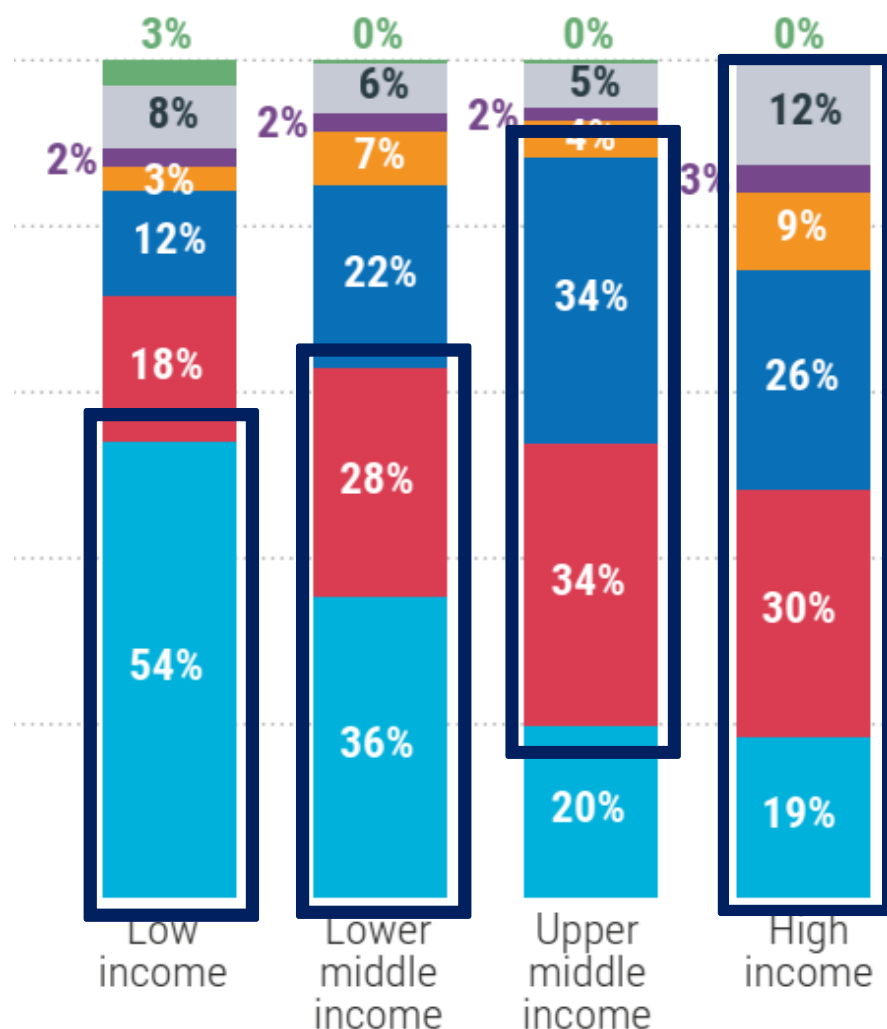
Tons per
capita - 2020



■ Net change % DE Material Footprint
 ■ Affluence
 ■ Population
 ■ Technology

5
13
17
18
12
30
13
13

Trends: The material needs for provisioning systems (built environment, mobility, energy and food) by country income groups (2020)



Food Mobility Built environment
Energy Communication Other
Waste Management and Resource Recovery

Energy includes household energy consumption

All other provisioning systems include their embodied energy

Built environment and mobility: (construction, transport sector&infrastructure): 59 billion tonnes

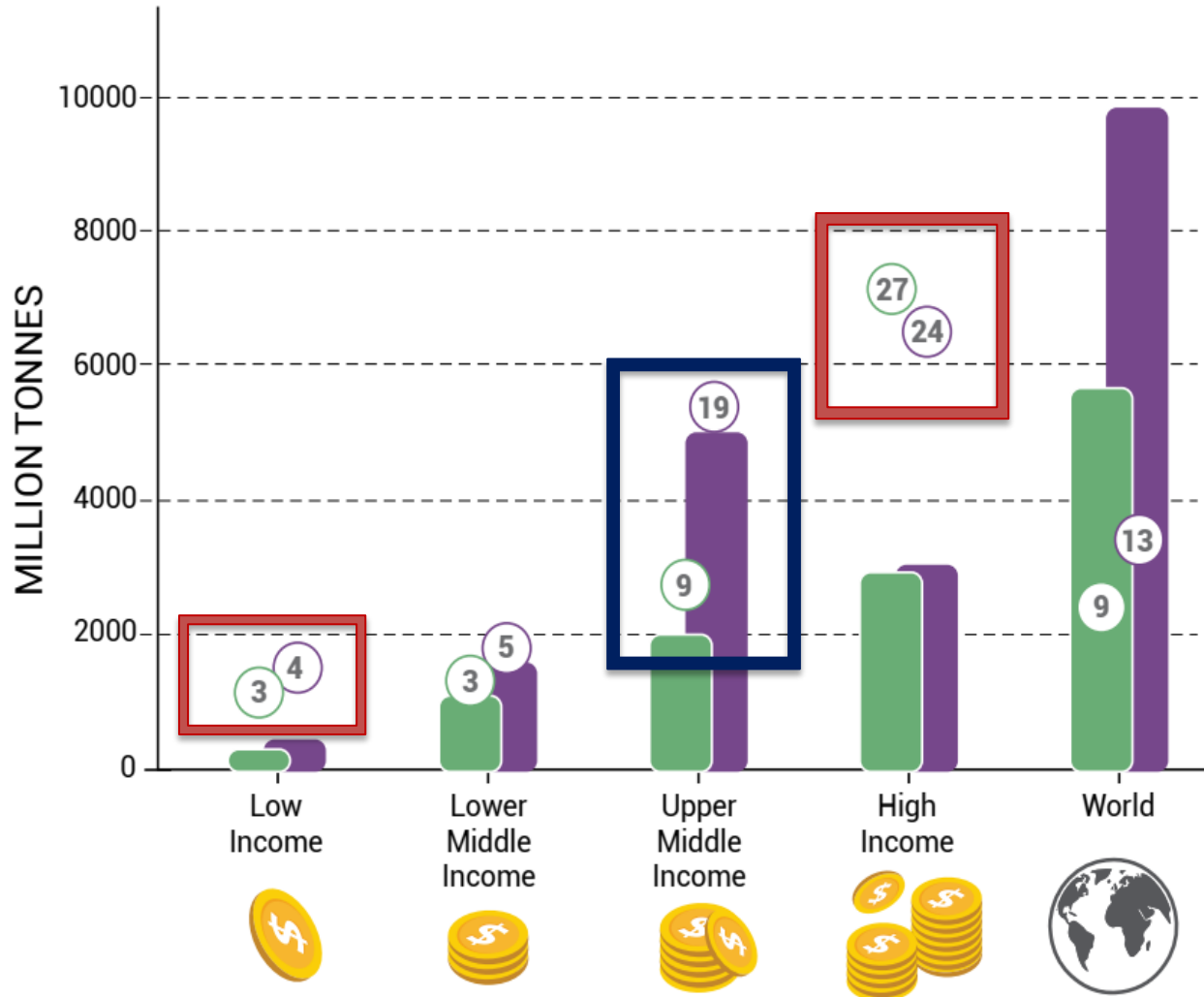
Food: 23.6 billion tonnes

Energy: (electricity, power, heat): 6.1 billion tonnes

Together = 90% of total global material demand, but differ in importance by income group

Source: Global Material Flows Database (UNEP 2023a)

***Trends:** High-income countries use six times more materials per capita and are responsible for ten times more climate impacts per capita than low-income countries.*



Since 2000 ...

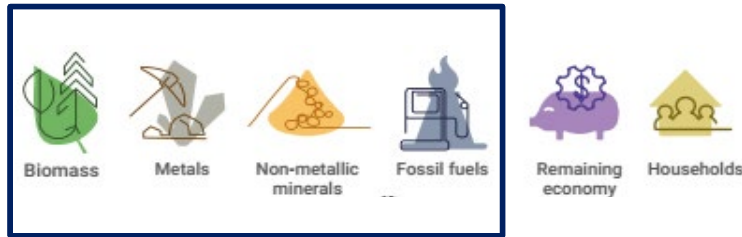
- **High-income:** Highest material footprint of all groups, relatively constant. Climate impact per capita = 10 x low-income group.
- **Middle-income:** material footprint more than doubled, approaching high-income levels. Climate impact per capita = roughly 50% of high-income group; 6 x low-income group.
- **Low-income:** Remain comparatively low, and mostly unchanged.

GRO 2024

*Resource use is driving the triple
planetary crisis*

Impacts: Extraction and Processing of Natural Resources Drives all Aspects of the Triple Planetary Crisis

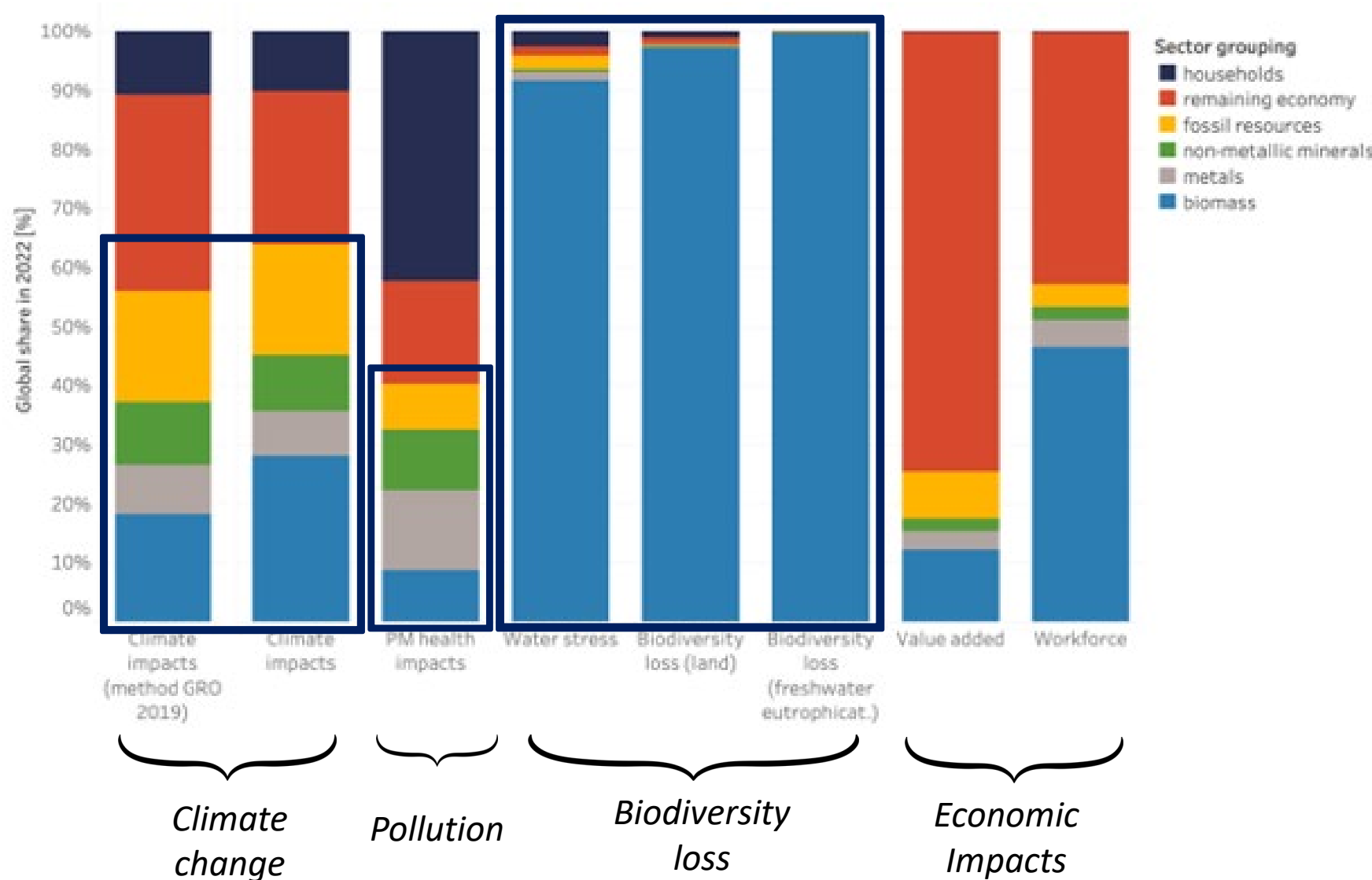
*Environmental impacts of materials
in the value chain in
extraction and processing phase*

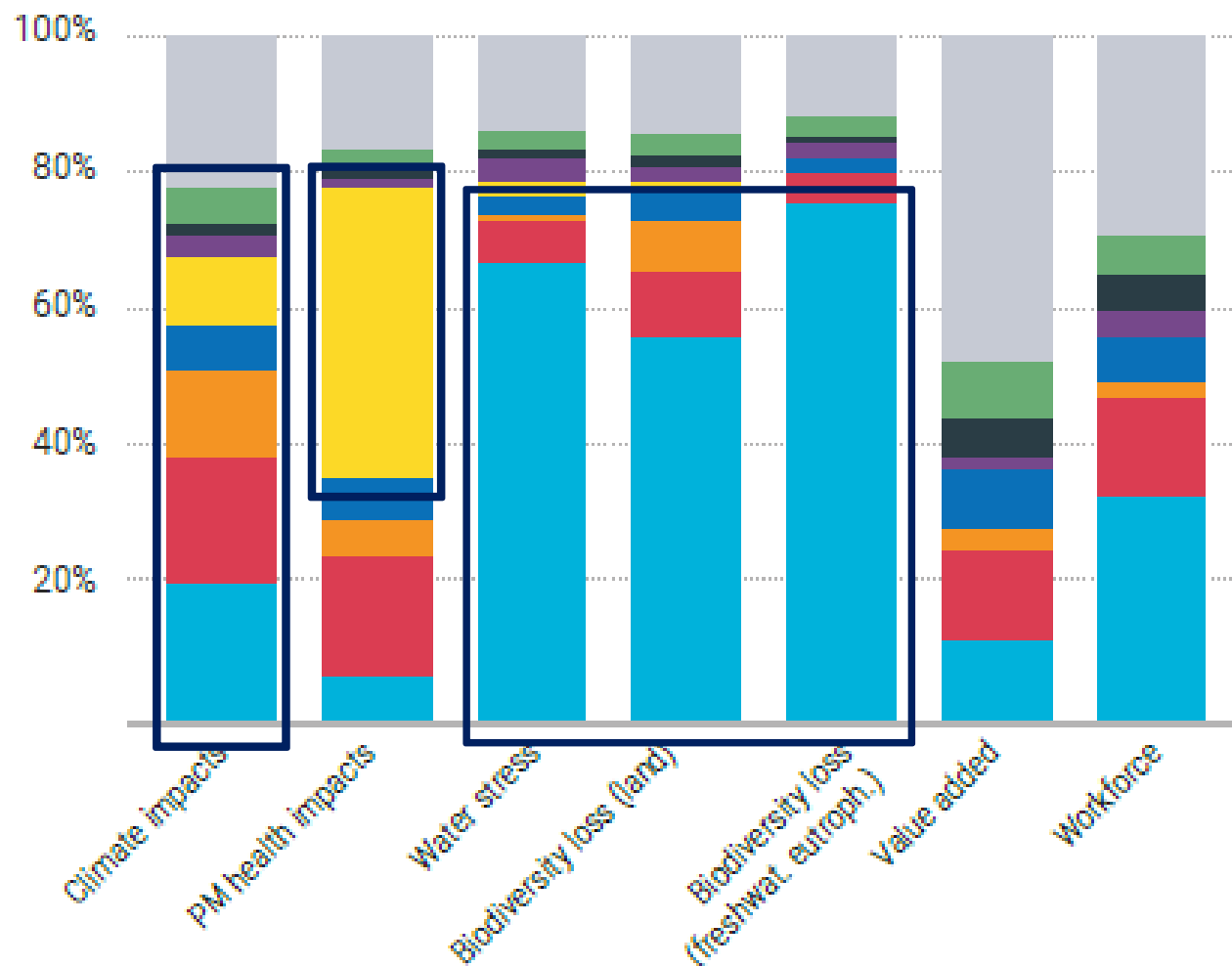


*60% of global climate change impacts
including land use change*

40% of air pollution health impacts

*More than 90% of water stress and
global land and water eutrophication
related biodiversity loss*





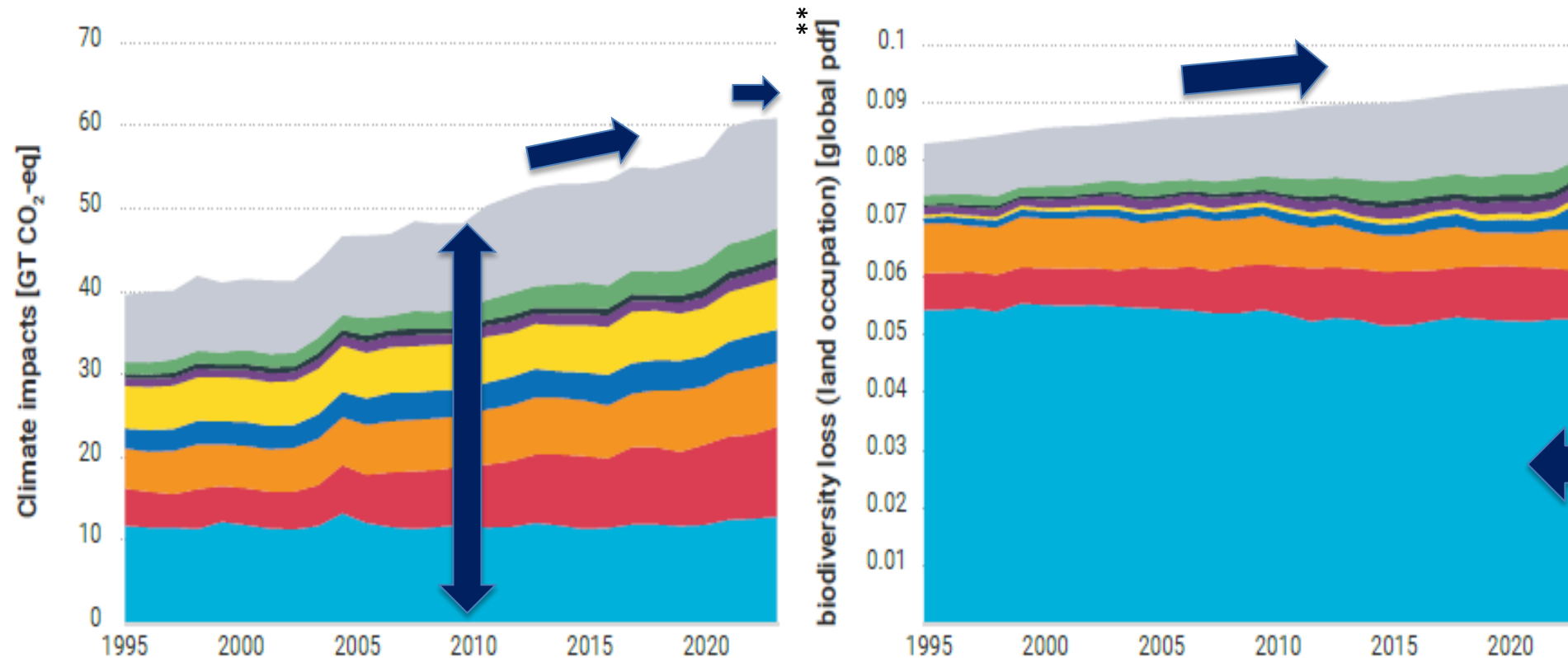
Impacts: "Provisioning Systems Human Needs in the Year 2022"

Provisioning system*

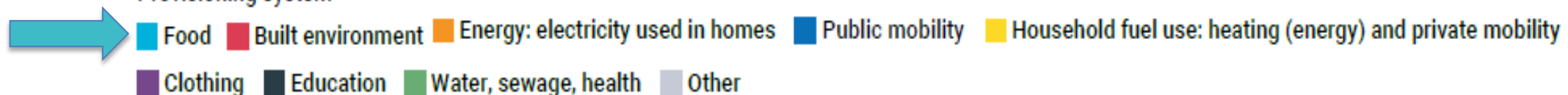
- Food
- Built environment
- Energy: electricity used in homes
- Public mobility
- Household fuel use: heating (energy) and private mobility
- Clothing
- Education
- Water, sewage, health
- Other

*Including embodied energy

Impacts: “Provisioning systems” - human needs with most environmental impacts requesting our focus



Provisioning system*



*Including embodied energy

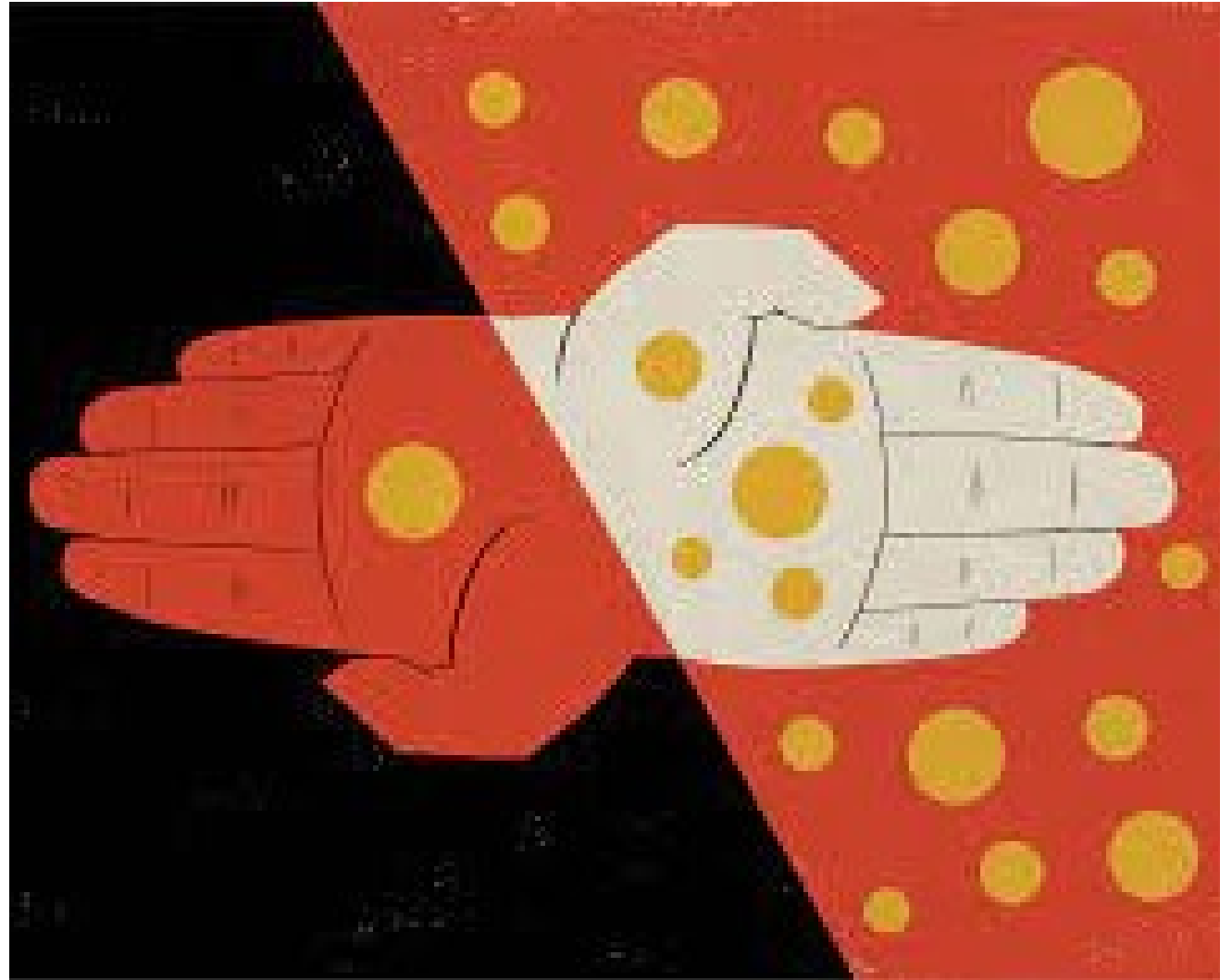
** Global pdf: Global potentially disappeared fraction of species

GRO 2024

*Equity in Focus - Environmental and Social
Efforts are two sides of the same Coin*

*Bruce M. Boghosian: Is
Inequality Inevitable?
SCIENTIFIC AMERICAN,
November 1st, 2023*

- “In fact, these mathematical models demonstrate that (in market economies) far from wealth trickling down to the poor, *the natural inclination of wealth is to flow upward*, so that the “natural” wealth distribution in a free-market economy is one of complete oligarchy. It is *only redistribution that sets limits on inequality.*”



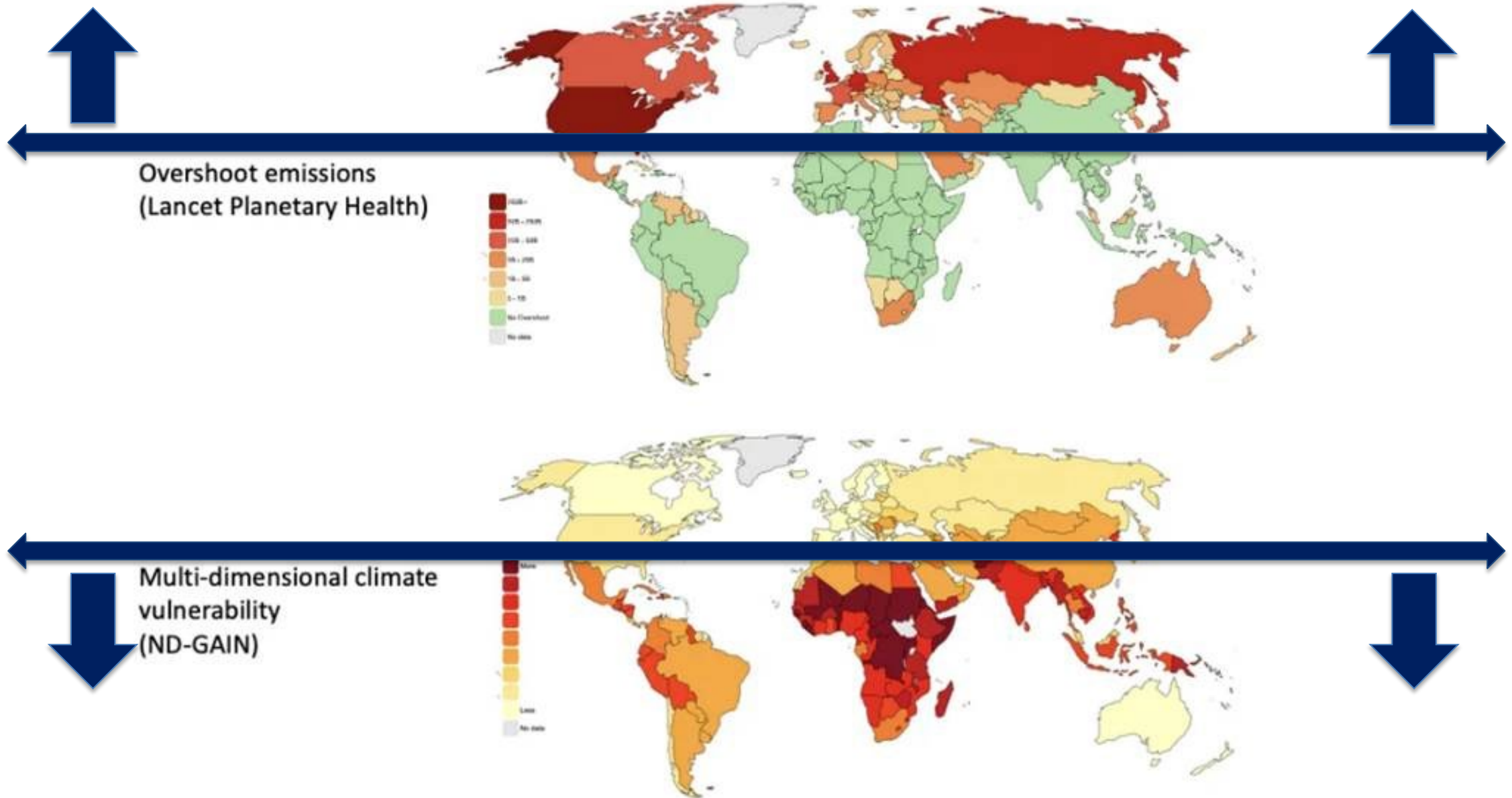
Two scenarios:

Too Little, Too Late: continue our current destructive path and **The Giant Leap:** the fastest economic transformation in history.

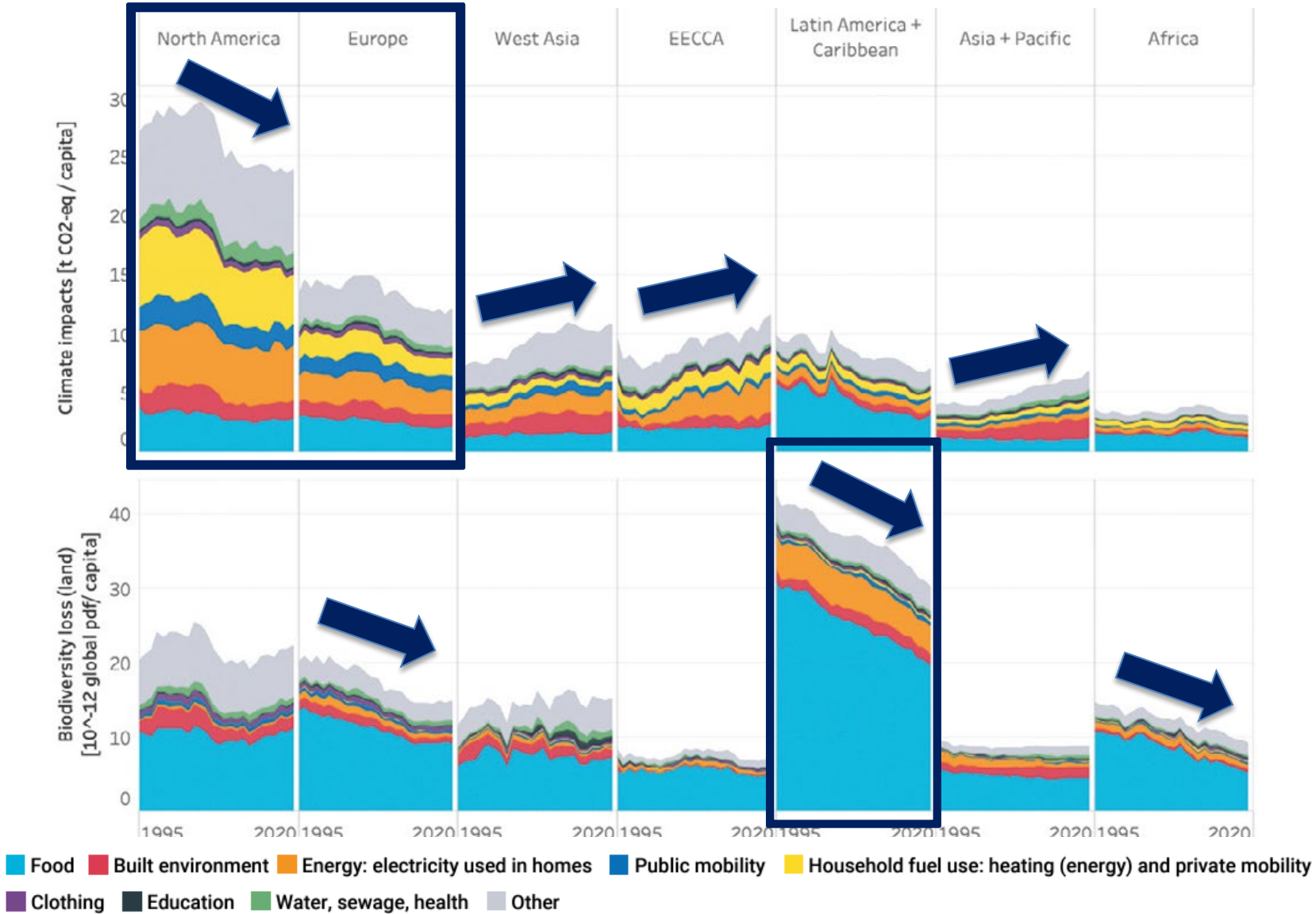
The key outcome is that we will see *negative social tipping before severe environmental tipping points* and that equality and poverty alleviation is key if we want people to be concerned about regenerative economics and decarbonisation.



Those Benefiting Most, and Those Facing Worst Climate Consequences



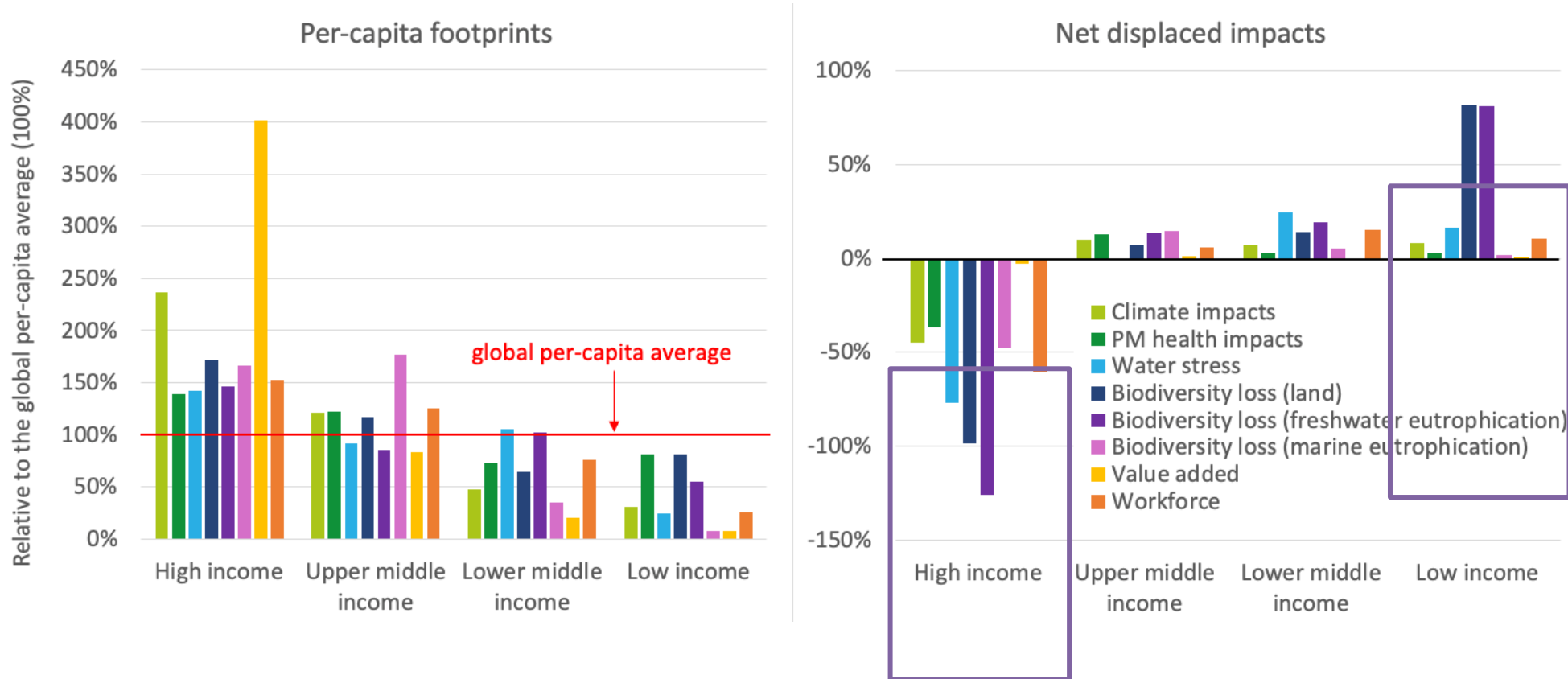
Impacts: World regions drive different climate and biodiversity impacts



*Global pdf: Global potentially disappeared fraction of species

Source: International Resource Panel, Global Resources Outlook 2024 (<https://www.resourcepanel.org/reports/global-resources-outlook-2024>)

Impacts: High income countries still show the highest impact footprints per capita, and are outsourcing to low- and middle-income countries



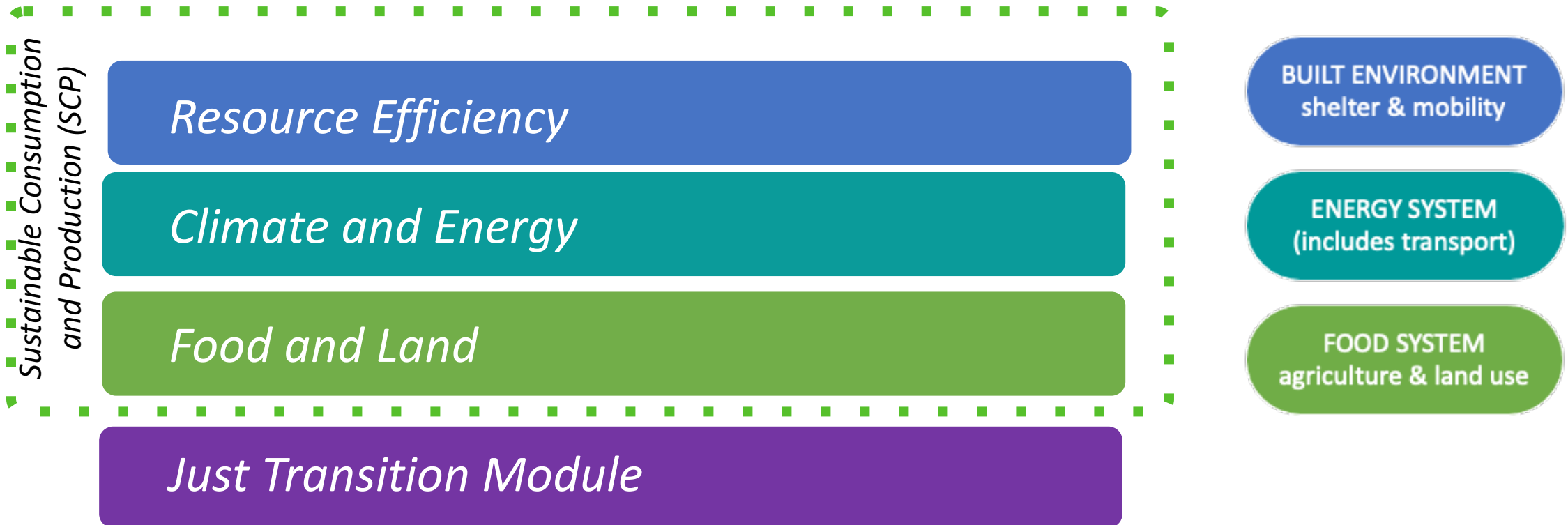
Low-income countries are experiencing high levels of biodiversity loss due to high-income countries consumption

GRO 2024

*Scenario Outlook and Policy
Recommendations*

Scenario outlook: Scenario is built up as three 'shifts' plus measures to support Just Transition contrasted against Historical Trends

Multi-model framework with
provisioning system lens

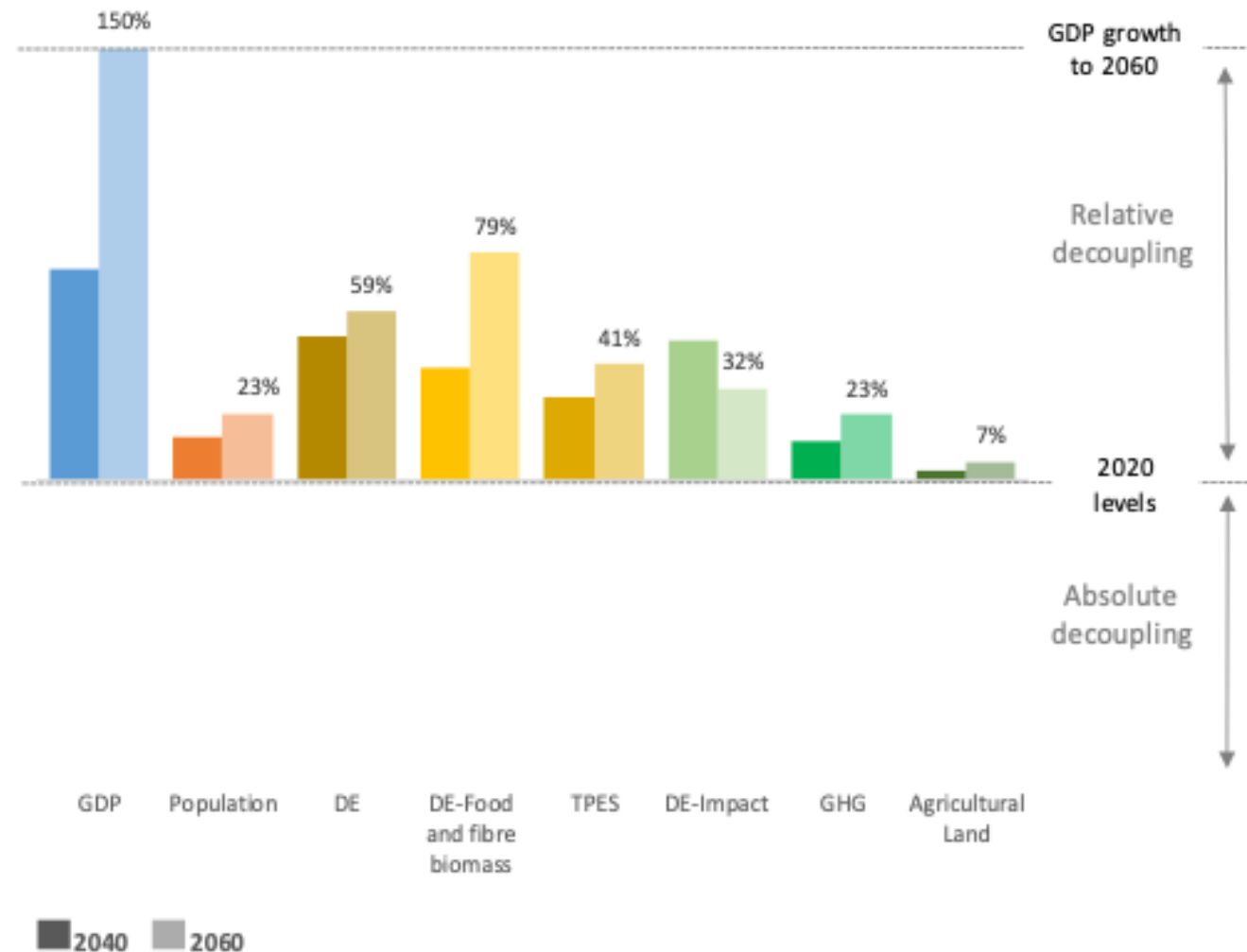
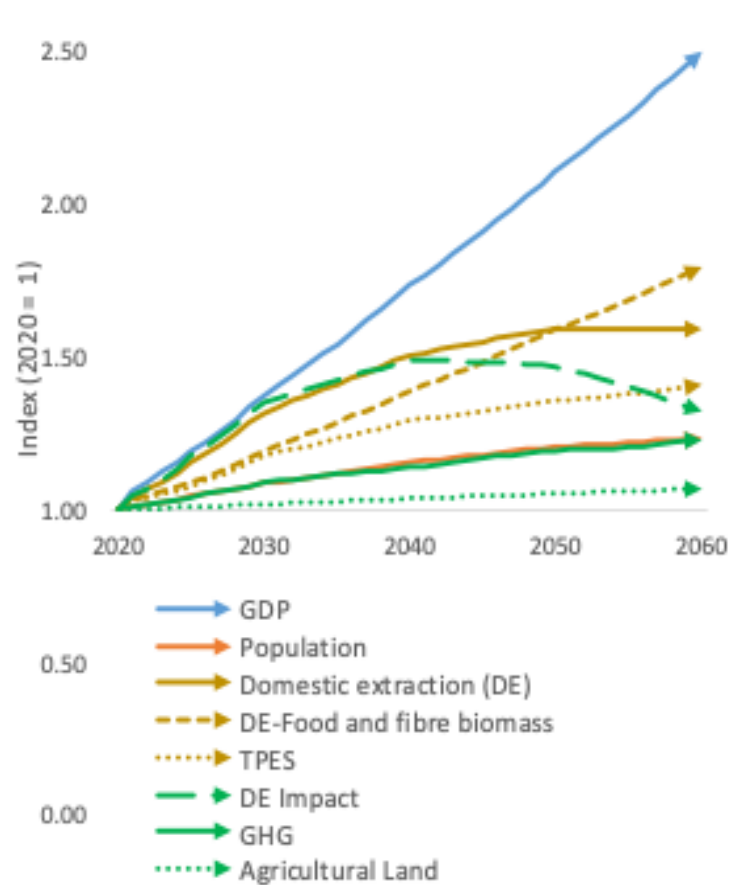


Solutions: Strategies for Reducing Resource Use across Provisioning Systems

Provisioning system	 Food	 Built environment	 Mobility	 Energy
Recommendations	- Reducing the demand of the most impactful food commodities - Reducing food loss and food waste - Protecting and restoring productive land while meeting demand for nutrition	- Assuring sustainability of the new building stock - Retrofitting the existing building stock - More intensive use of buildings	- Cities moving towards active mobility and public transportation - Reducing carbon-intensive frequent traveling modalities - Decreasing emissions intensity of transport modalities	Decarbonizing electricity supply through the scaling up of low-resource renewable energies and increased energy efficiency
Outcomes from policies modelled in Scenarios	Can decrease the land needed for food by 5% compared to 2020 levels while more equitably ensuring adequate nutrition for all	Can decrease building material stocks by 25% by 2060, leading to a 30% decrease in energy demand, and 30% decrease in GHG emissions compared to current trends.	Can reduce related material stock requirements (-50%), energy demands (-50%) and GHG emissions (-60%) by 2060 compared to current trends.	Can drive a sharp decrease in energy demand, with reductions of climate impacts by more than 80 per cent.

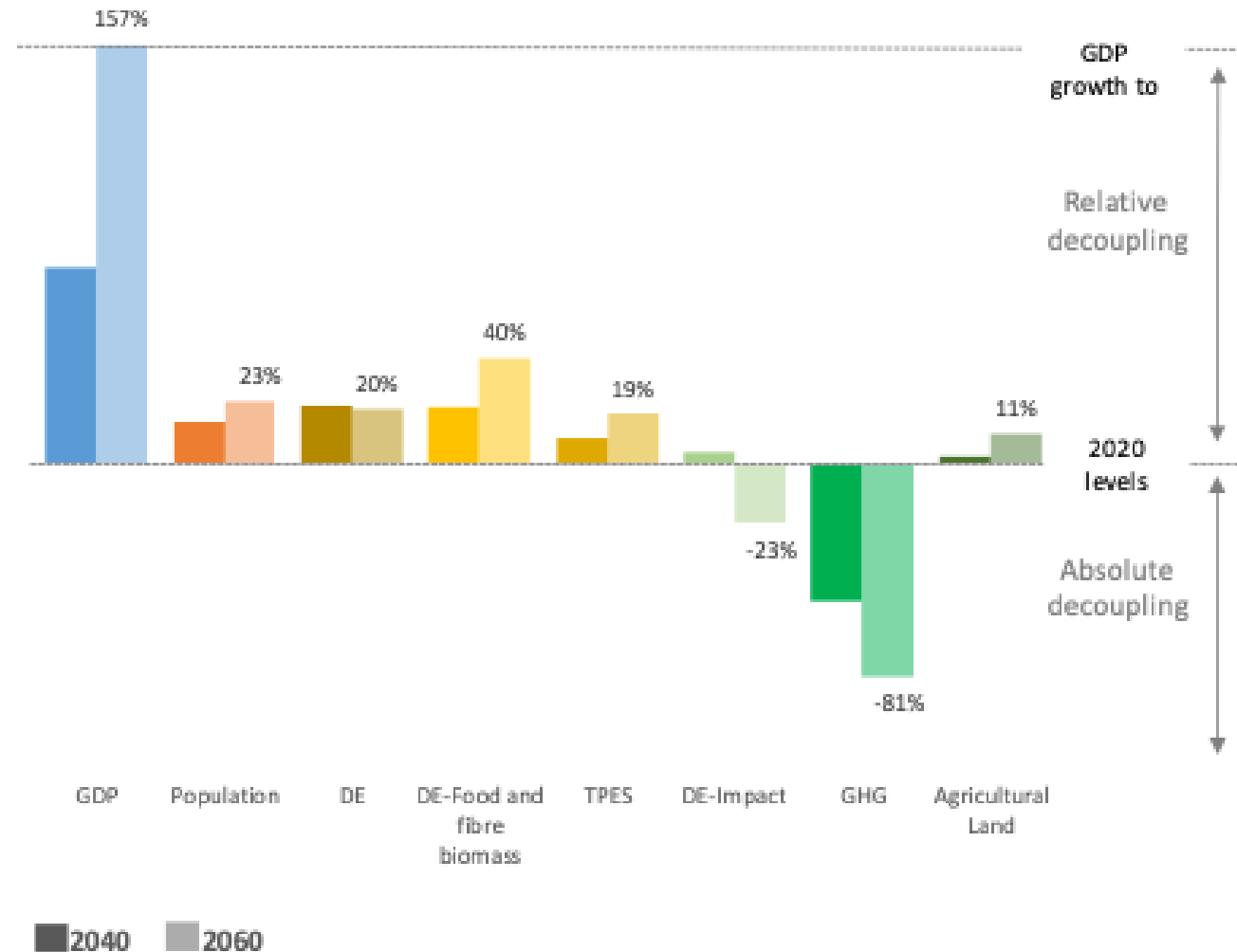
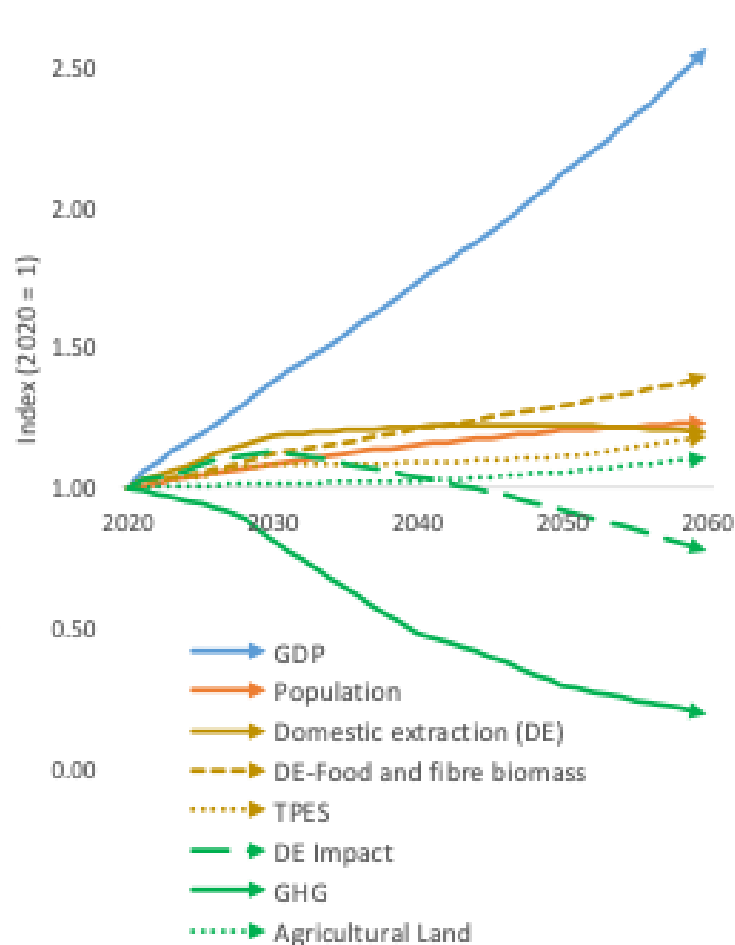
Scenario outlook: Decoupling Outcomes

Historical Trends



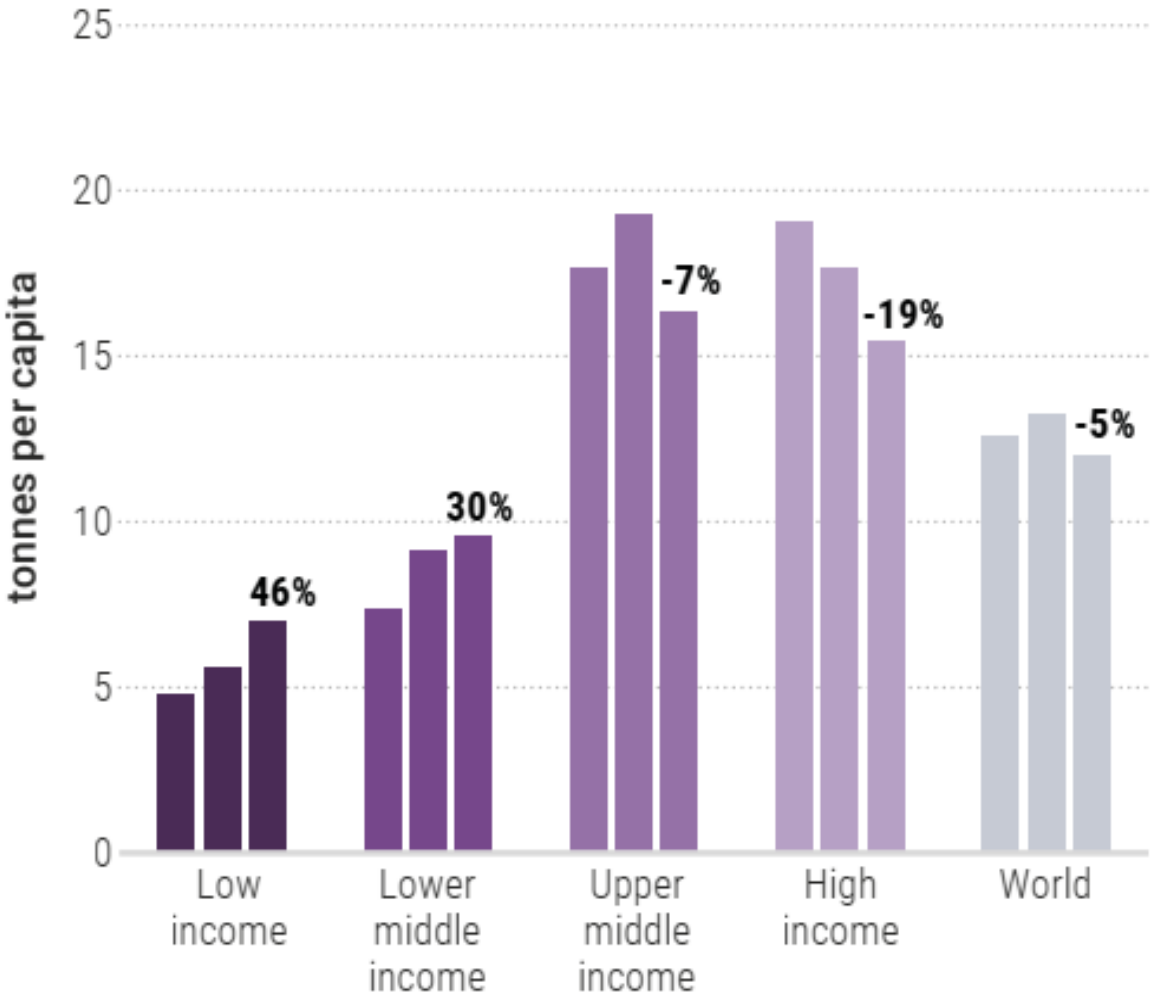
Scenario outlook: Decoupling Outcomes

Just Sustainability Transition scenario

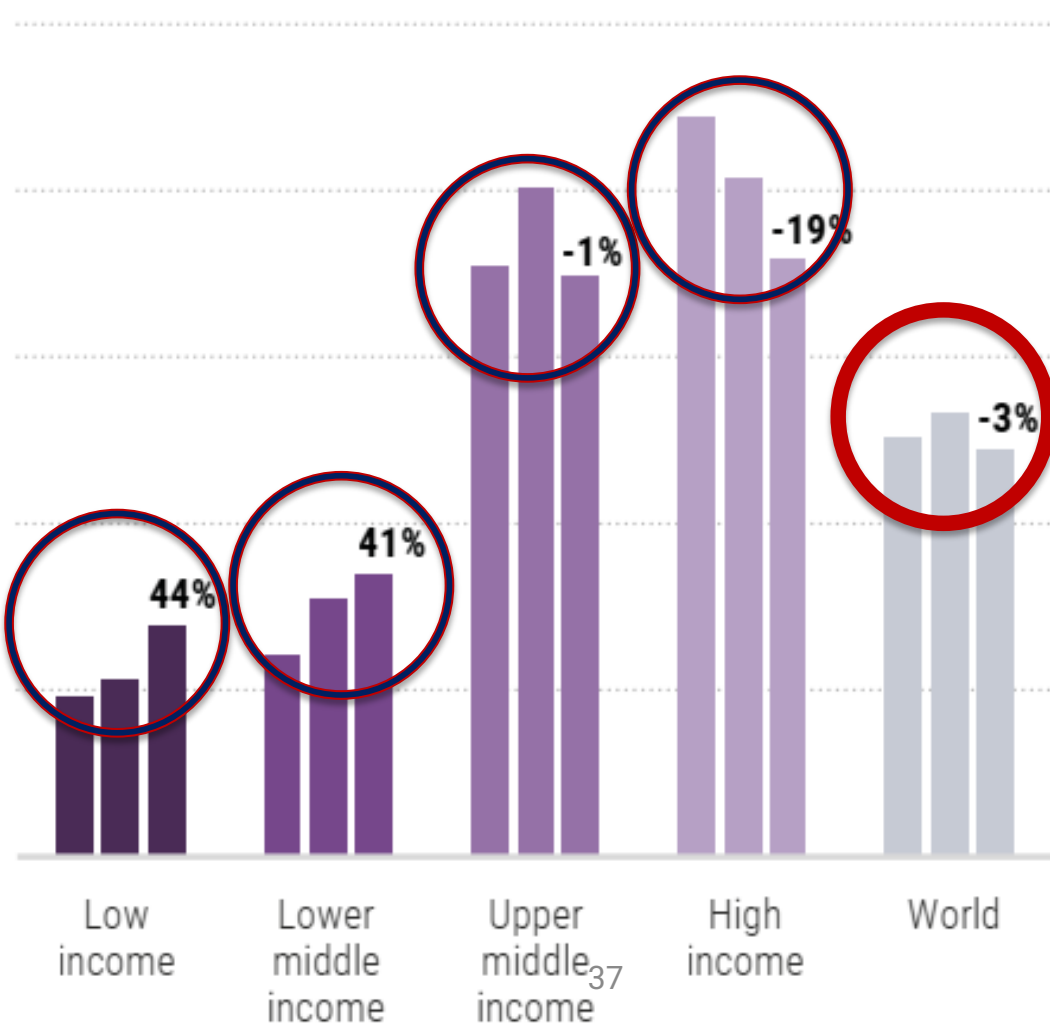


Impacts: Reductions in high consumption contexts means that resource use grows where it is most needed

Resource extraction (DE) per capita by income group, 2020, 2040 and 2060



Material footprint (MF) per capita by income group, 2020, 2040 and 2060



Scenario outlook: Sustainability Transition compared to Historical Trends Scenario (2060)



Growing Economy:

Reduced inequality:

Improved wellbeing:

Reduced growth in resource use:

Reduced environmental impacts:

+ 3%

*Lower income group Material
Footprint gap*

Higher HDI all income groups

By 30%

GHG emissions - 83%

Energy demand - 27%

Agricultural land area - 5%





Source: Pixabay

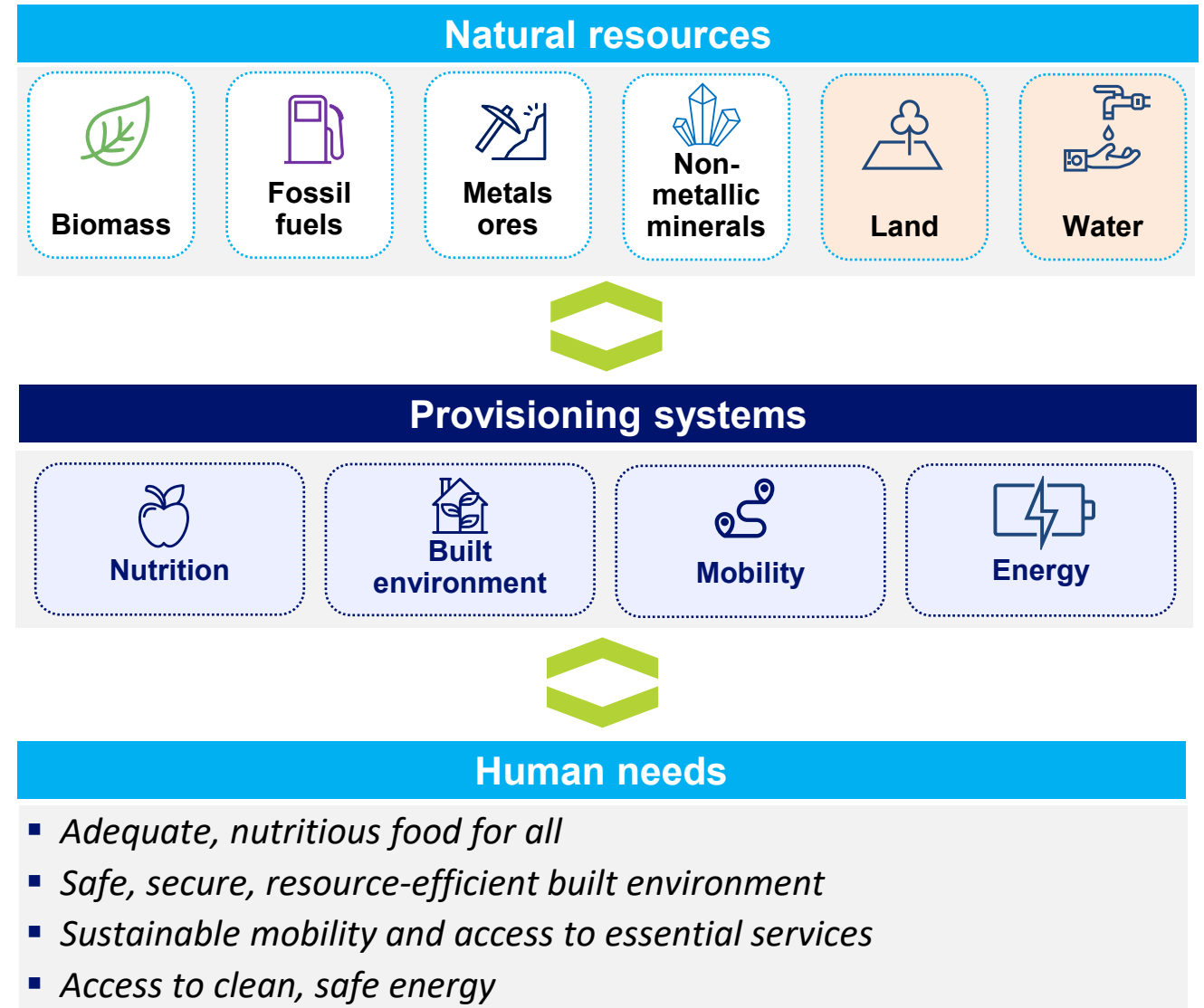
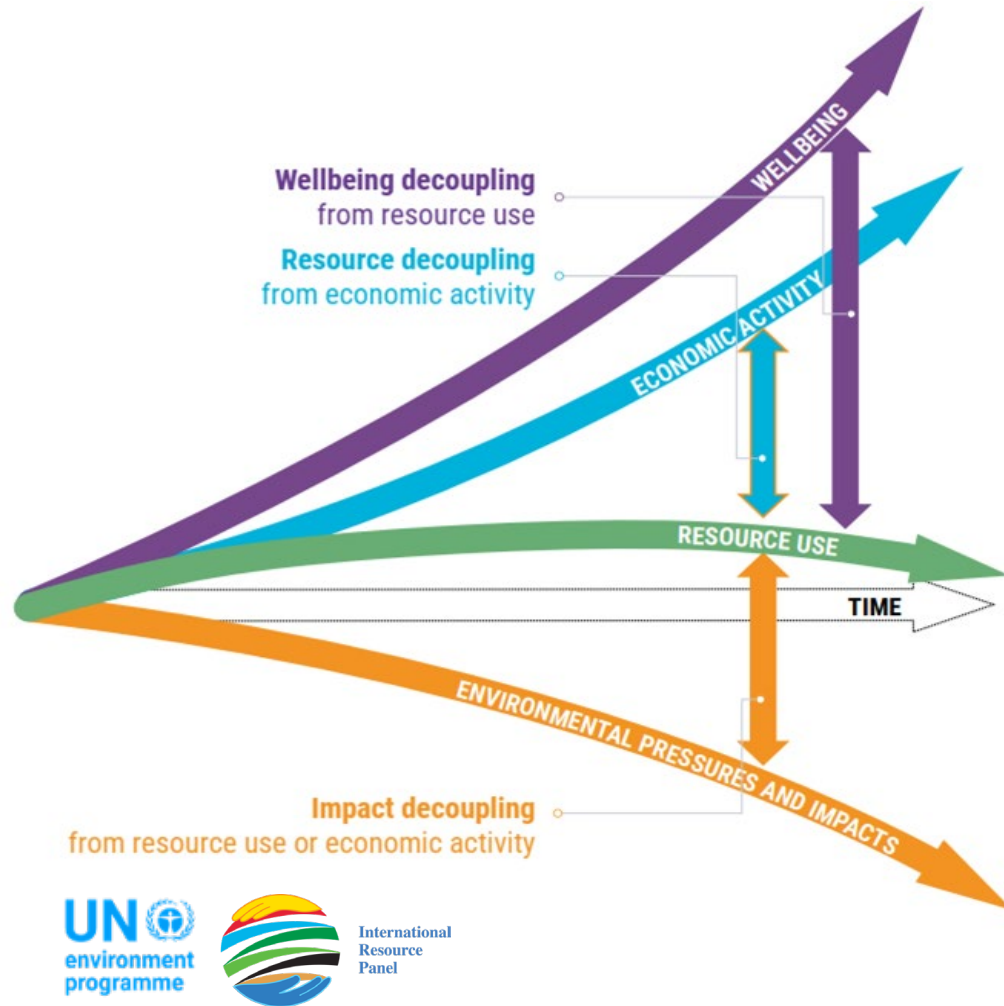
*A **pathway** towards sustainable resource use, which maintains and even enhances human wellbeing, while prevent planetary boundaries to be crossed is possible, but we **urgently must change the direction and fix the broken compass.***

*Solutions pathway is getting **narrower and steeper**, and there are **less, and more urgent options on our policy menu** then decades ago.*

Solutions: *Main Recommendations for implementing the Just Sustainability Transition scenario*

 <i>Institutionalizing resource governance and defining resource use paths</i>	 <i>Directing finance towards sustainable resource use</i>	 <i>Making trade an engine of sustainable resource use</i>	 <i>Mainstreaming sustainable consumption options</i>	 <i>Creating circular, resource-efficient and low-impact solutions and business models</i>
• <i>Global and national institutionalization of natural resource use within global sustainability agendas and action on environmental agreements</i> • <i>Definition of global and national resource use paths</i>	• <i>Internalizing the environmental and social costs of resource extraction</i> • <i>Redirecting, repurposing and reforming public subsidies for sustainable resource</i> • <i>Channeling private finance towards sustainable resource use</i> • <i>Incorporating resource-related risk into Public and Central Bank mandates</i>	• <i>Trade governance for fairness and sustainable resource use</i> • <i>Enabling local resource value retention in producer countries</i>	• <i>Developing action plans to improve access to sustainable goods and services</i> • <i>Regulating marketing practices leading to over-consumption, and raising awareness</i>	• <i>Setting up monitoring systems to identify priorities and develop ambitious circular economy action plans</i> • <i>Developing and reinforcing regulation to boost circular economy business models</i> • <i>Building circular economy capacity and coalitions</i>

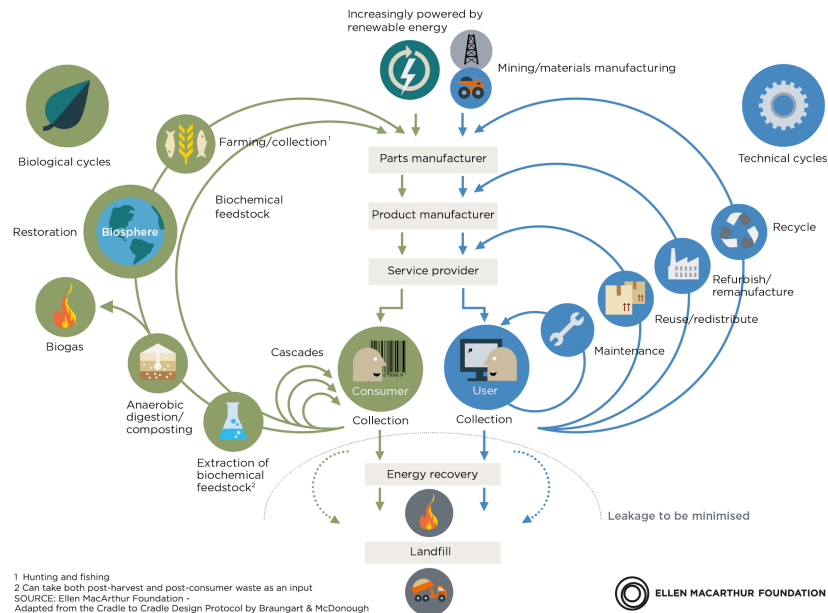
***Solutions:** Decoupling resource use from economic activity and human wellbeing & targeting it to human needs through provisioning systems*



Why Circular Economy?

The Logic of the Obvious

CIRCULAR ECONOMY - an industrial system that is restorative by design



Circular economy should be seen as an instrument helping delivering decoupling of economic growth from resource use and environmental impacts in practice, as well as a part of the bigger picture of economic, societal and cultural transformation needed to deliver the SDGs

Circular Bio-Economy is just using common sense

Circular (bio)economy is the oldest concept on planet Earth. All nature is based on the principles of a circular economy: nothing is lost, and everything has its purpose. We humans, as part of nature, should abide by the same principles. Unfortunately, what seems logical in theory isn't so clear in practice.





Importance of the Point of Perception

*When you complain that you
are caught in a traffic jam ...
you are wrong.*

You are traffic jam.

Source: Mint

From Product Maximisation to Providing Human Needs

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



Main question often-overlooked to be addressed

*How to meet human
needs in most
energy and resource
efficient way?*



<https://edistaffing.com>

Efficiency ... Sufficiency

Consumer ... Producer

*Sufficiency (optimising supply and demand) could be addressed from **consumption side** through reducing consumption, optimising what is sufficient to meet human needs and/or from the **production side** by meeting human needs using less energy & materials, by improving energy and resource efficiency.*

*Consumers behaviour is related to consumer, **consumption system**, is basically designed and impacted by governments and producers.*

Climate Change

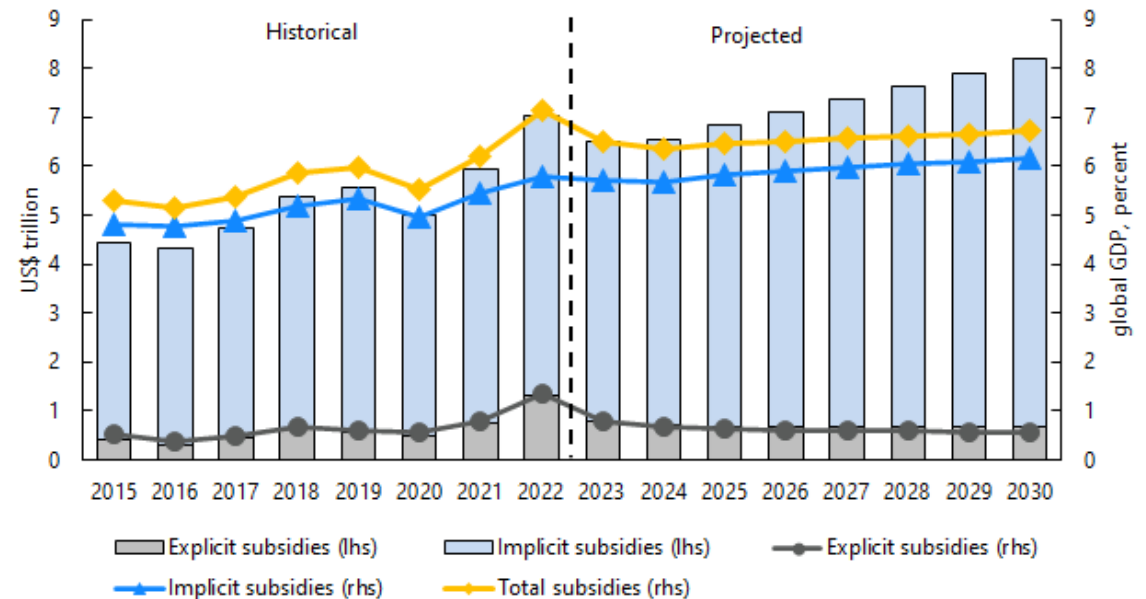
Receiving attention with good reasons, but limited success.

Why is circular economy important part of solution?

Some Climate Change Related Facts

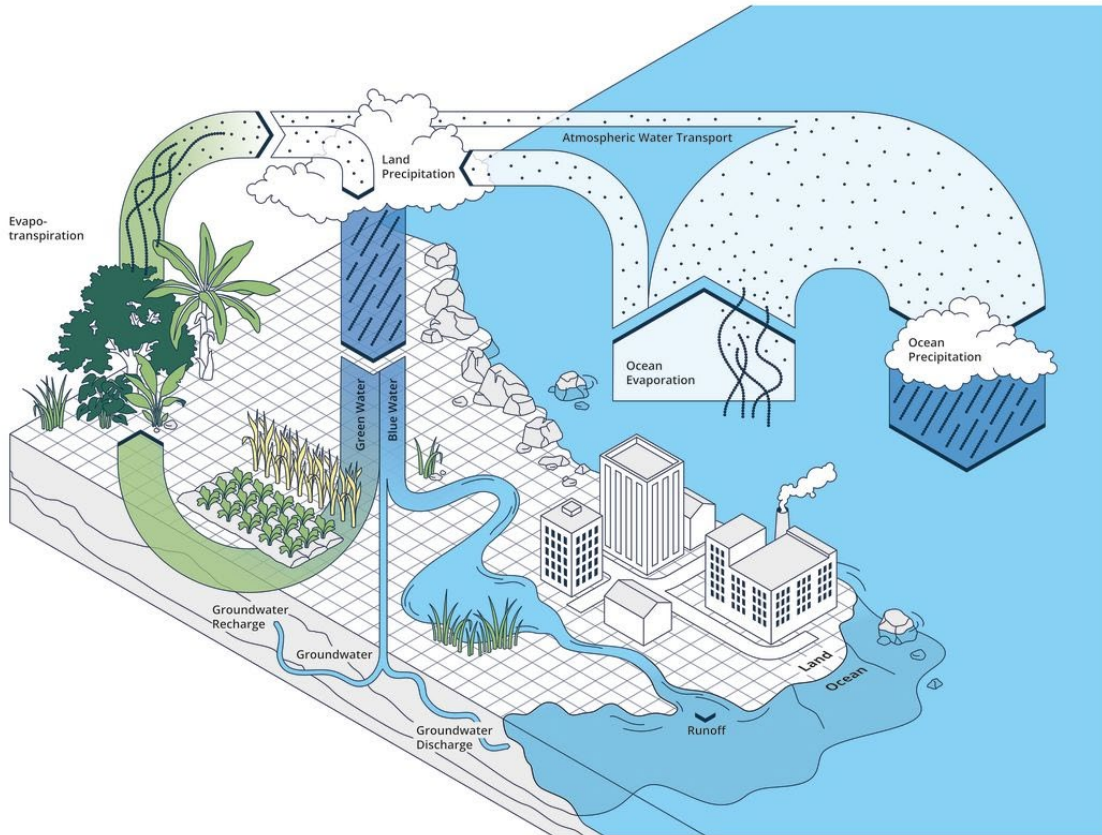
- *Global CO₂ emissions* in billion metric tonnes 37.41 highest ever (Source: Statista 2024)
- *Global surface temperature increase* above pre-industrial level 1.5 – 1.7 degrees Celsius (Source Copernicus monthly figures 2023/24)
- *Fossil fuel subsidies* \$7 trillion or 7.1 percent of GDP (Source: IMF Data/Projections 2022)

The Global Hypocrisy Indicator



The system that moves water around the Earth is off balance for the first time in human history

Global Commission on the Economics of Water, The Economics of Water, 2024



Precipitation, the source of all freshwater, can no longer be relied upon

- *Extreme weather events*
- *Forest fires*
- *Increased Severe Floods*
- *Sinking cities*
- *Water scarcity*
- *Unpredictable agricultural conditions*
- ...

The Economic Commitment Of Climate Change

Maximilian Kotz, Anders Levermann, Leonie Wenz, Nature, Potsdam Institute, 17. April 2024

*Permanent average **loss of income worldwide will be 19% by 2049**. In the United States and Europe, the reduction will be about 11%, while in Africa and south Asia it will be 22%, with some individual countries much higher than this.*

*The economic hit predicted by the paper is more than **twice as high as any previous analysis**. The overall costs related to climate change are estimated to be app. **6-times higher than all the funding needed for energy transition**.*

The Macroeconomic Impact of Climate Change:

Global vs. Local Temperature

Adrien Bilal, Diego R. Känzig, NBER Working Paper Series, Cambridge, May 2024

*This paper estimates that the **macroeconomic damages from climate change are six times larger than previously thought**. They exploit natural variability in global temperature and rely on timeseries variation. **A 1°C increase in global temperature leads to a 12% decline in world GDP**. Global temperature shocks correlate much more strongly with extreme climatic events than the country-level temperature shocks commonly used in the panel literature, explaining why their estimate is substantially larger. Their results imply a Social Cost of Carbon of \$1,056 per ton of carbon dioxide. **A business-as-usual warming scenario leads to a present value welfare loss of 31%**. Both are multiple orders of magnitude above previous estimates and imply that **unilateral decarbonization policy is cost-effective for large countries** such as the United States.*

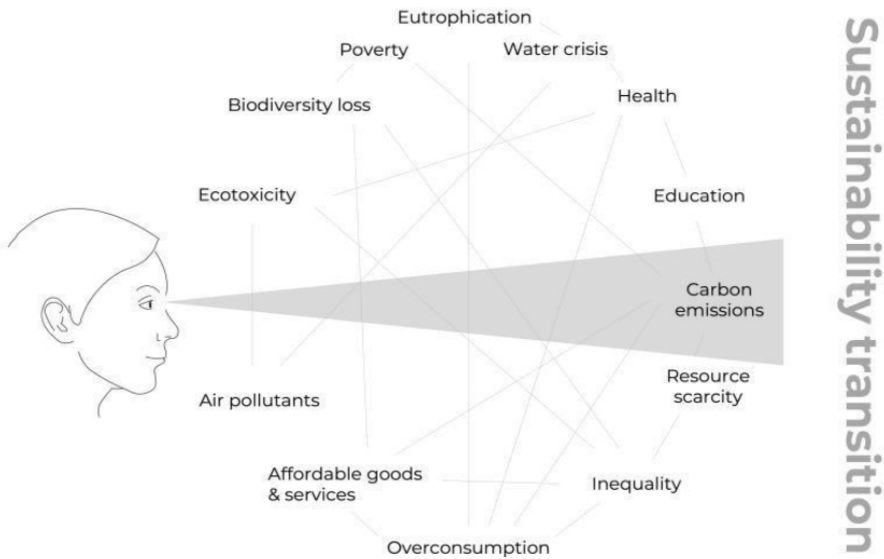
Education

What are we teaching at our universities?

Norwegian Institute of International Affairs (NUPI) reviewed 18,400 universities in 196 countries and found that 68% of the world's energy educational degrees are focused on fossil fuels, and only 32% on renewable energy.

Because of carbon lock-in, many universities continue to prioritise education in fossil fuels and are failing to meet the growing demand for a clean energy workforce. Renewable energy education remains greatly underfinanced at the global level compared to education in fossil fuels.

Energy Transition is Important But not Enough



Climate breakdown is a symptom of ecological overshoot, which is caused by the deliberate exploitation of human behaviour.

*The **material footprint is dangerously underdiscussed**. Most climate “solutions” lack focus on the root cause of the crisis. Where discussion of climate often centres on carbon emissions, which is of course important, while a focus on **overshoot highlights the materials usage, waste output and growth of human society**, all of which affect the Earth’s biosphere.*

*We should not focus only on production related energy challenges, but **also ask for what that energy will be used.***

Climate Change can only be effectively addressed by combining

SUPPLY SIDE SOLUTIONS

CARBON MANAGEMENT

LAND

WATER

ENERGY

MATERIALS

DECOUPLING - CIRCULAR ECONOMY

DEMAND SIDE SOLUTIONS

ECO-SYSTEM SERVICES, ENVIRONMENTAL SINKS

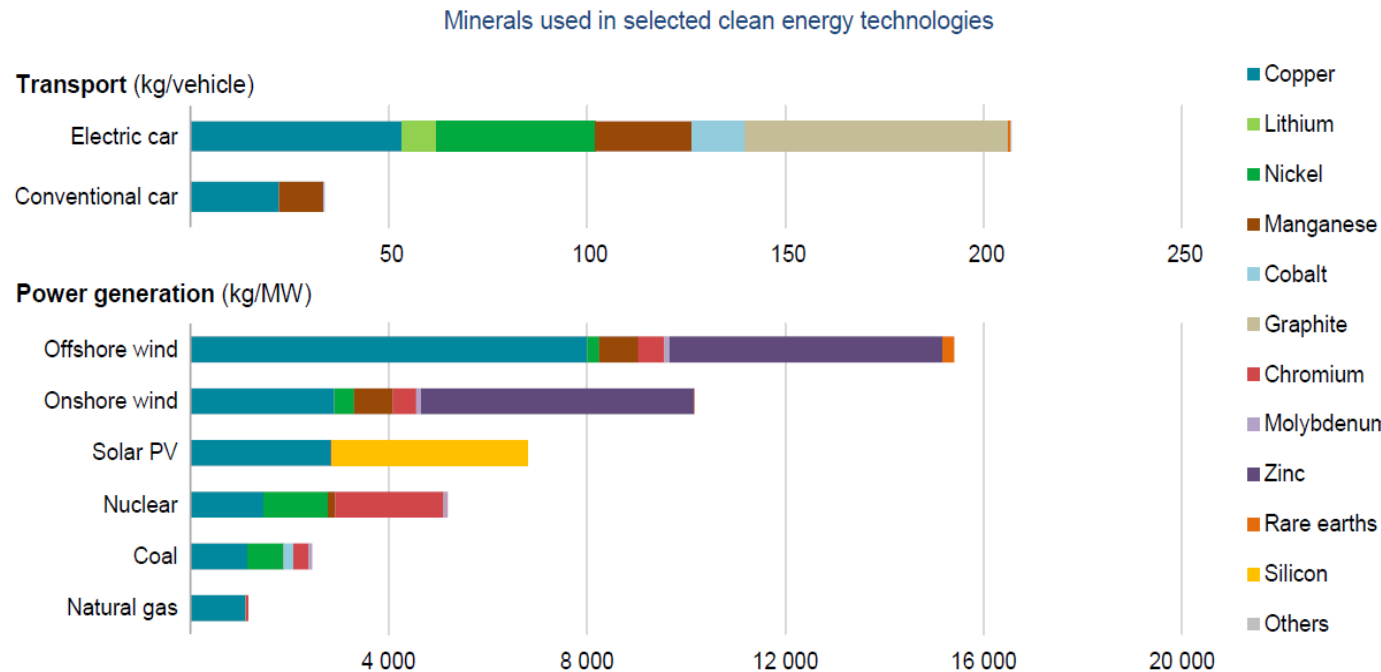
NATURE BASED SOLUTIONS

Energy Transition

*Critical Raw Materials Needed for Energy Transition and the
role of Circular Economy*

Key Critical Raw Materials (Transition Materials)

Transition to net zero GHG target is materials demanding on the supply (energy production), and on demand (energy use) side



Electric vehicles use close to ten times the material of conventional cars – using at least eight different critical material types, compared to just three for conventional cars.

Reaching net zero by 2050 will require about six times today's critical mineral use in 2040. And even meeting today's under-ambitious national climate plans would require more than doubling of critical minerals we are using today.

Notes: kg = kilogramme; MW = megawatt. Steel and aluminium not included. See Chapter 1 and Annex for details on the assumptions and methodologies.

Source: International Energy Agency

Indispensable Pillars for Material Resilience



①

Supply Transition Materials with highest environmental and social standards

Securing enough supply: ensuring supply is sufficient to power the energy transition

Aligning expanded supply with sustainable development

Improving supply resilience by improving TM geographic diversification



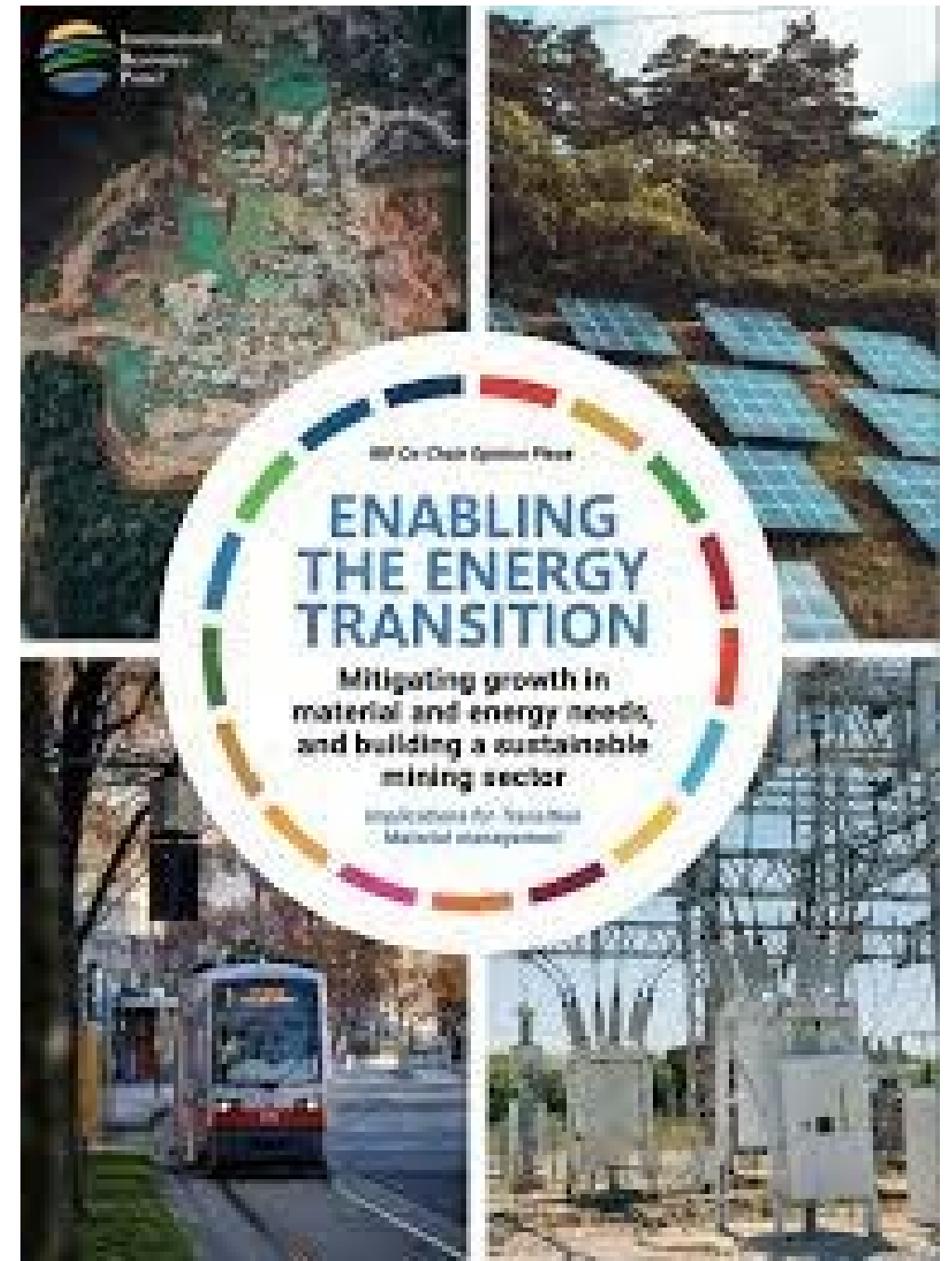
②

Activate policies which encourage all circularity levers

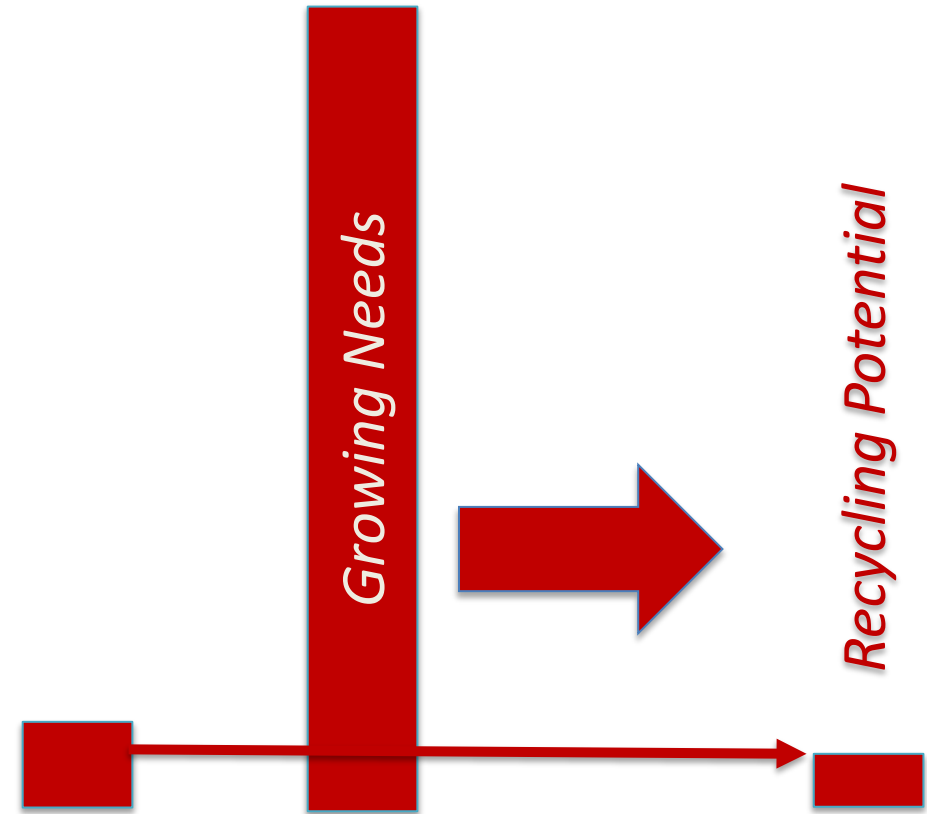
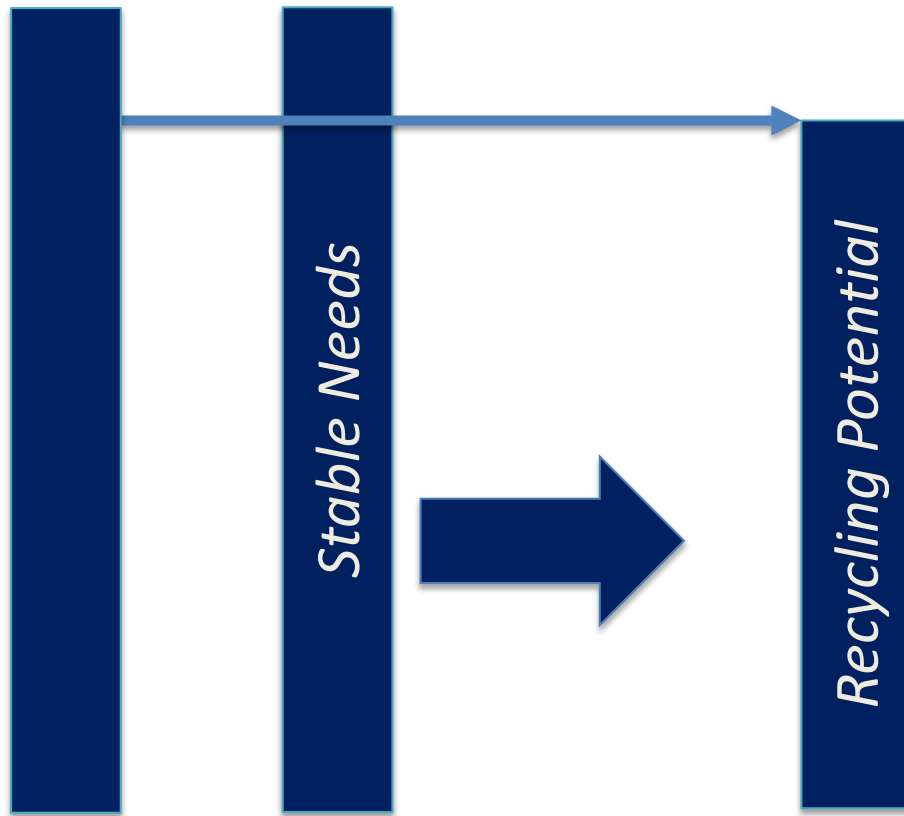
Recycling: Capturing future secondary Transition Materials

Transition materials (CRMs) are meeting two criteria:

- They are materials which are **essential to key energy transition technologies** (eg., the electrification of mobility needs powerful lithium batteries, while the expansion of electricity grids requires extensive copper cabling); and
- They are either **projected to see significant growth in demand or likely to experience supply-demand gaps** in the next decade or so. In particular, we focus on materials for which supply at scale is a new challenge. These include lithium and copper, for which demand is expected to exceed supply by 2030.



Pillar 2: Recycling Potential: Stable and Growing Needs



Indispensable Pillars for Material Resilience



1

Supply Transition Materials with highest environmental and social standards

Securing enough supply: ensuring supply is sufficient to power the energy transition

Aligning expanded supply with sustainable development

Improving supply resilience by improving TM geographic diversification



2

Activate policies which encourage all circularity levers

Recycling: Capturing future secondary Transition Materials

More intensive use: Using products that contain transition materials more intensively

Light weighting: Reducing the weight of products that contain transition materials

Lifetime extension: Increasing the lifetime of products that contain transition materials



3

Optimize delivery of human needs in energy and material intensive systems

Most energy and material intensive systems (GRO24)

Mobility: reduced need for travel through work from home, balanced urban design; communal and active transport

Buildings: better utilisation of buildings; space-efficient, balanced neighbourhoods

Indispensable Pillars for Material Resilience



1

*Optimize delivery of human needs
in energy and material intensive
systems*

**Most
energy
and
material
intensive
systems
(GRO24)**

Mobility: reduced
need for travel through
work from home,
balanced urban
design; communal and
active transport

Buildings: better
utilisation of
buildings; space-
efficient, balanced
neighbourhoods



2

*Activate policies which encourage
all circularity levers*

Recycling: Capturing future
secondary Transition Materials

More intensive use: Using
products that contain transition
materials more intensively

Light weighting: Reducing the
weight of products that contain
transition materials

Lifetime extension: Increasing the
lifetime of products that contain
transition materials



3

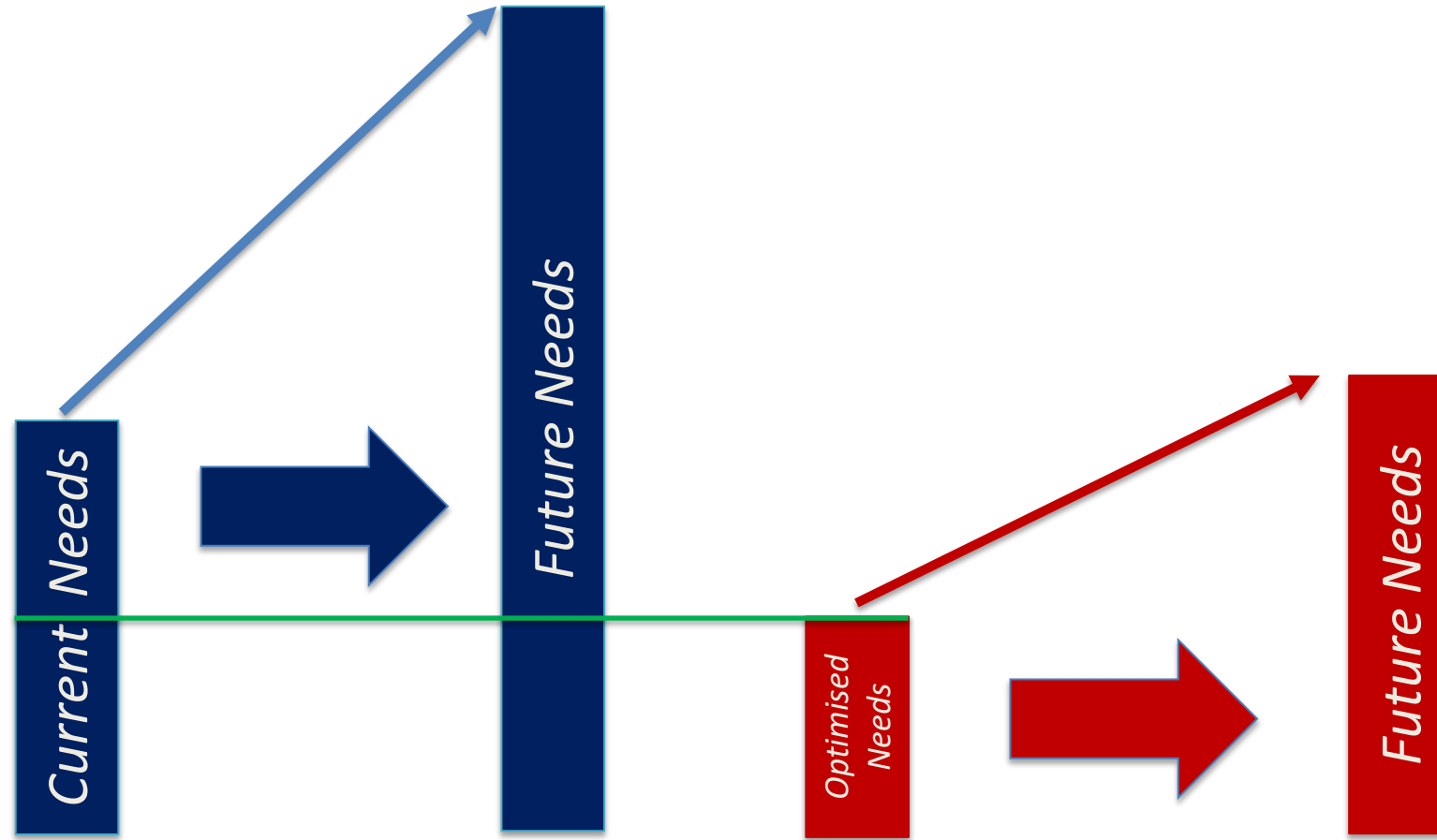
*Supply Transition Materials with
highest environmental and social
standards*

Securing enough supply: ensuring
supply is sufficient to power the
energy transition

*Aligning expanded supply with
sustainable development*

*Improving supply resilience by
improving TM geographic
diversification*

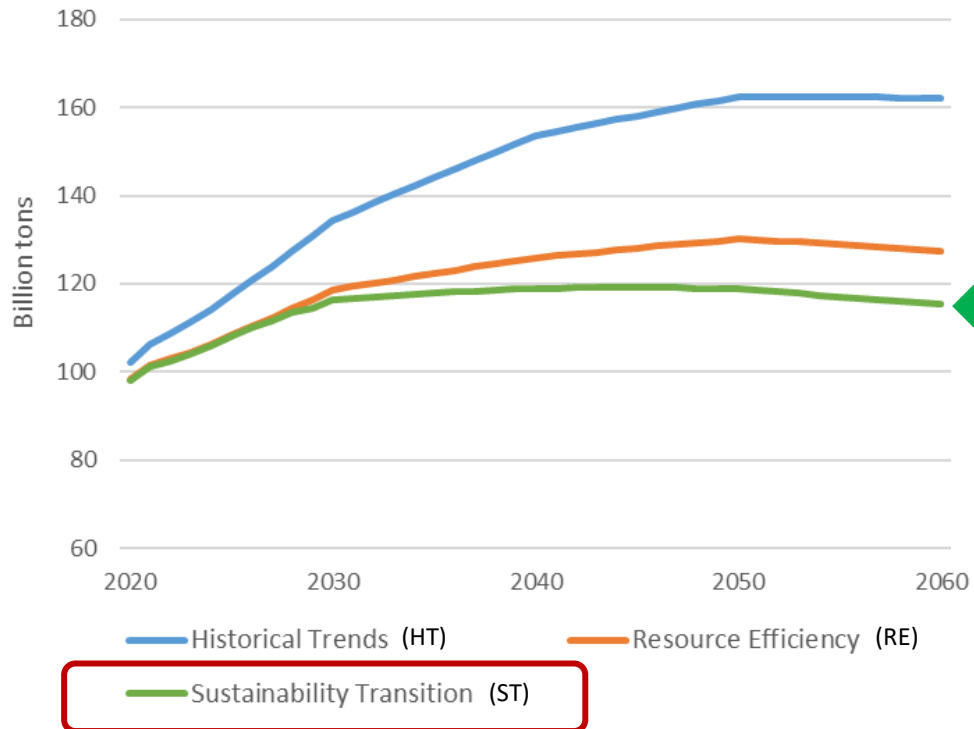
The Importance of Optimising the Baseline



GRO24 IRP modelling:

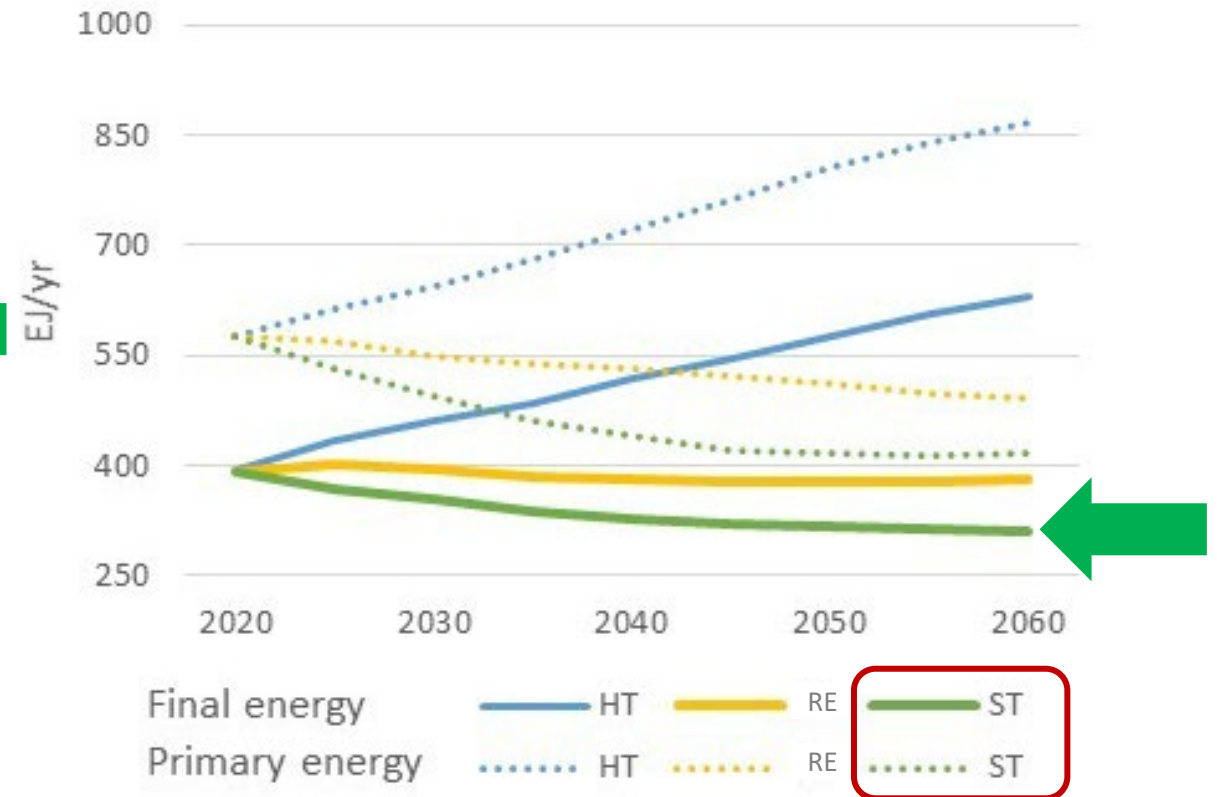
Decoupling is possible and benefits are important

Global material extraction



*We can **mitigate material use by 30%** by 2060, compared to continued historic trends...*

Global energy demand



*... and **reduce energy demand by 25%** by 2060, compared to 2020 levels.*

To Conclude



It is not easy being green

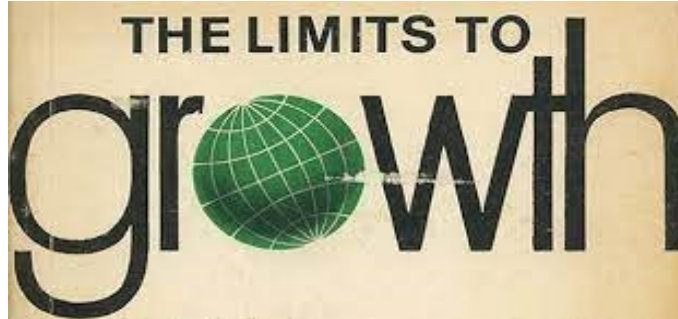
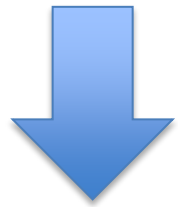
Source: [Disney.com](https://www.disney.com)



*The world has enough for
everyone's need, but not for
everyone's greed"*
Mahatma Gandhi

The World has Changed

1972



*Population on the Planet
3.8 billion*

2022

The Growth of Limits
*Climate Change,
Pandemics, Biodiversity
Loss, Security Threats ...*

*Population on the Planet
8 billion*

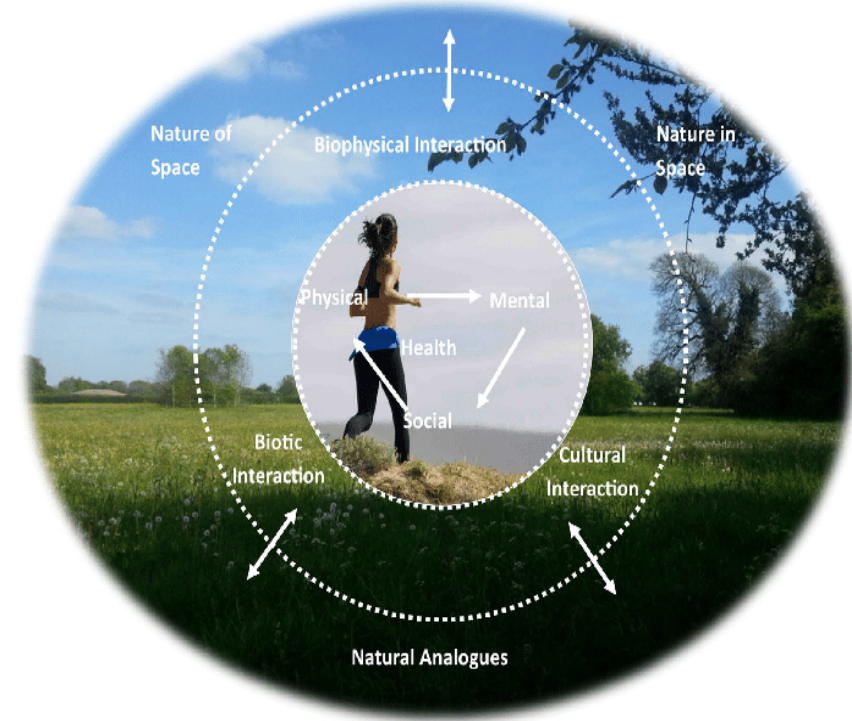
*To make our future sustainable
some basic shifts would be needed:*



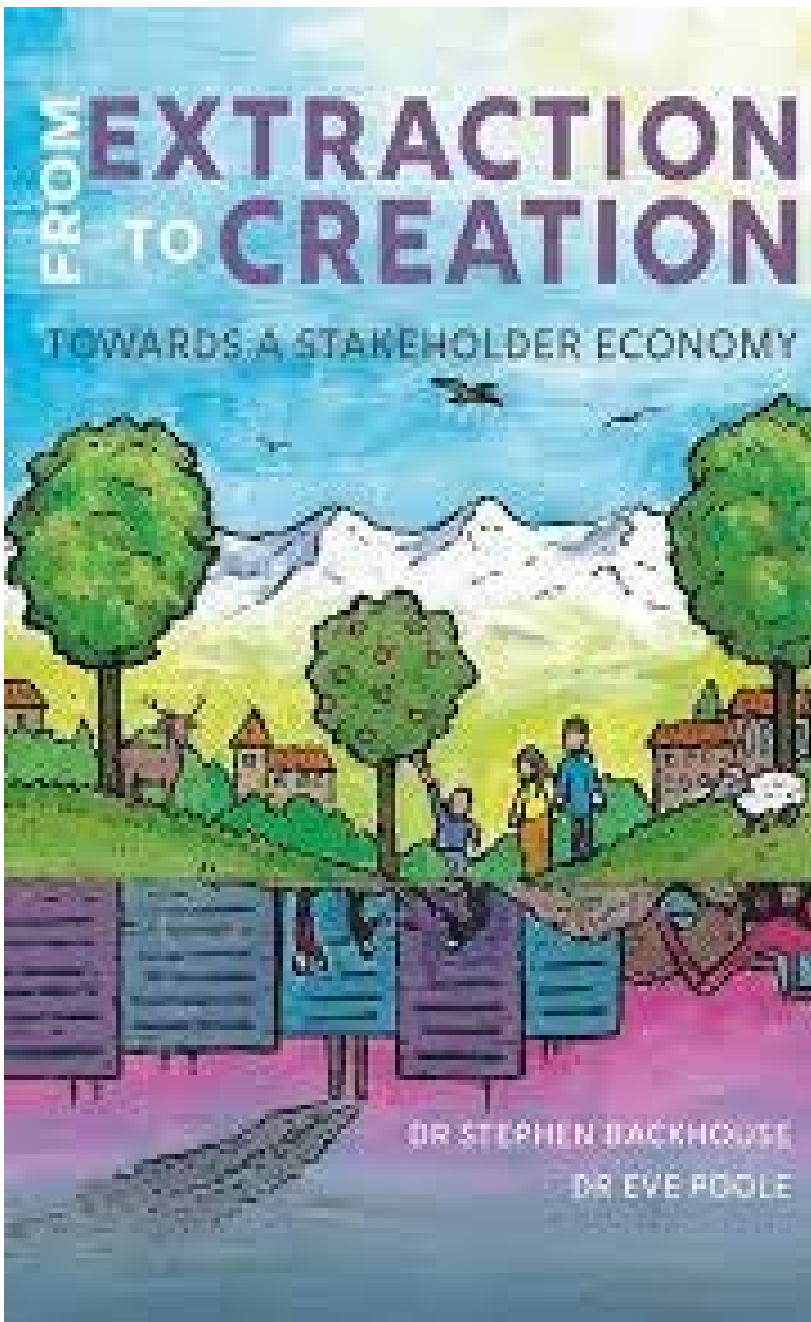
1

*From Humans in function of economic
success and development to an economy
in function of delivering human needs
We must set the order right!*

2



*From economy considering Humans as external/superior to Nature
to an economy acknowledging that we are embedded with Nature
Destroying Nature is destroying ourselves!*



3

*From extraction-based production
to a creation-based production*

*We should stop stimulating extraction
based economic success and reward
responsible, innovative, creative ways
of meeting human needs!*

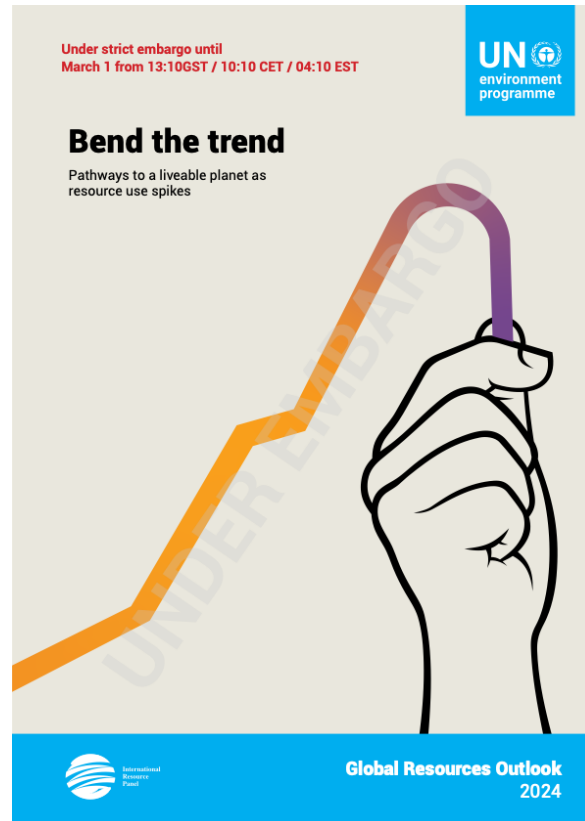


4

From an egoistic, short-term based interests' governance structures and logic to cooperation and sharing sovereignty.

We must improve our collective resilience. We need a convincing intergenerational pact, and all governments should nominate Minister for Future Generations.





*We are **indebting** future generations, financially and by depleting the Nature. This is simply wrong.*

Apparently, we humans are the most intelligent species on this planet. It is high time to prove it.

More than an economic or a technological choice, this is a moral choice.

This System Change Transformation is also in the Interest of the Business

FIGURE C Global risks ranked by severity over the short and long term

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period."

Risk categories

- Economic
- Environmental
- Geopolitical
- Societal
- Technological

2 years

1 st	Misinformation and disinformation
2 nd	Extreme weather events
3 rd	State-based armed conflict
4 th	Societal polarization
5 th	Cyber espionage and warfare
6 th	Pollution
7 th	Inequality
8 th	Involuntary migration or displacement
9 th	Geoeconomic confrontation
10 th	Erosion of human rights and/or civic freedoms

10 years

1 st	Extreme weather events
2 nd	Biodiversity loss and ecosystem collapse
3 rd	Critical change to Earth systems
4 th	Natural resource shortages
5 th	Misinformation and disinformation
6 th	Adverse outcomes of AI technologies
7 th	Inequality
8 th	Societal polarization
9 th	Cyber espionage and warfare
10 th	Pollution

Source

World Economic Forum Global Risks
Perception Survey 2024-2025.

Sustainability Transition is a Major Business Opportunity

*It is **unavoidable!***

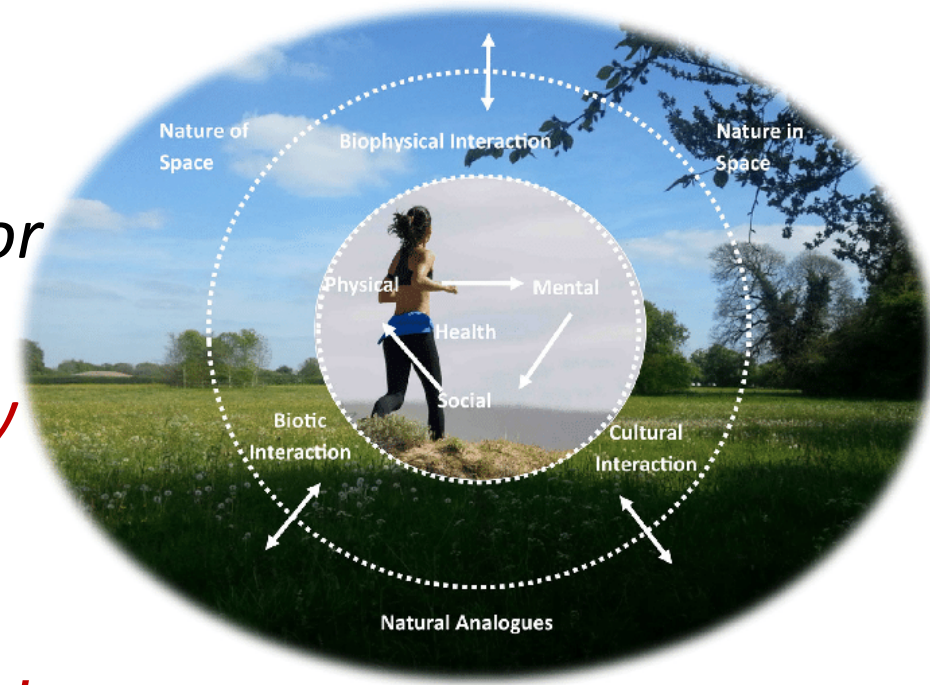
*And any transformation is a major business opportunity **for those who are innovative, those who dare and those who understand the essence of the challenges ahead of us.***

*We should not accept that meeting human needs should be resource intensive and **stop stimulating extraction based economic success** and rather reward responsible, innovative, creative ways of meeting human needs.*

Changing our Relationship with (the rest of) Nature, is ultimately an Economic, Equity and Security Imperative to strengthen collective Resilience

*The lessons learned recently (war, pandemic, the hottest summer) are more than convincing to understand that. This relationship is not stable, nor balanced, and it will be **resolved either with collective wisdom and effort, or in a hard and very painful way** (conflicts, pandemics, migration ...)*

The future will be green and fairer and more equal ... or there will be no future.



And finally, with the most important advice from the famous Belgian, country hosting me last two decades

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.

More about our work:

<https://www.resourcepanel.org>



**International
Resource
Panel**



THANK YOU

for helping us delivering the future we want!