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Opening Plenary

Step Changes for Big Impact: Maximising the Impact of Procurement



Janez Potočnik

Co-Chair, UNEP International
Resource Panel



conference.procuraplus.org

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Step Changes for Big Impact
Importance of Resource Management
Insights from Global Resource Outlook 2024

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

Lisbon, 13th March 2024

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





*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.*

Climate Change Example

Received most of the attention by policy makers last decades

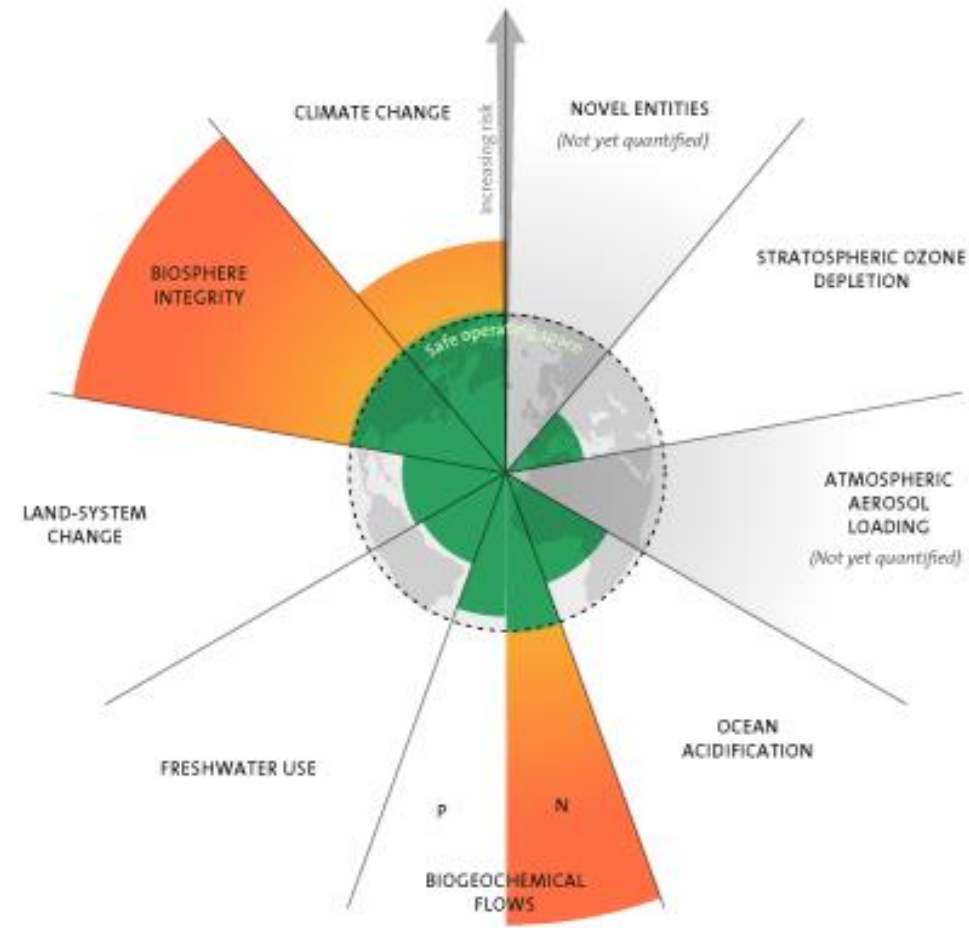
With good reasons, but limited success

Some Climate Change Related Facts

- *Global CO₂ emissions in billion metric tonnes 37.55 (Source: Statista 2023)*
- *Global surface temperature increase above pre-industrial level 1.48 degrees Celsius (Source Copernicus 2023)*
- *Fossil fuel subsidies \$7 trillion or 7.1 percent of GDP (Source: IMF 2022)*
- *Annual economic losses due to climate extreme weather events increasing (Multiple sources)*

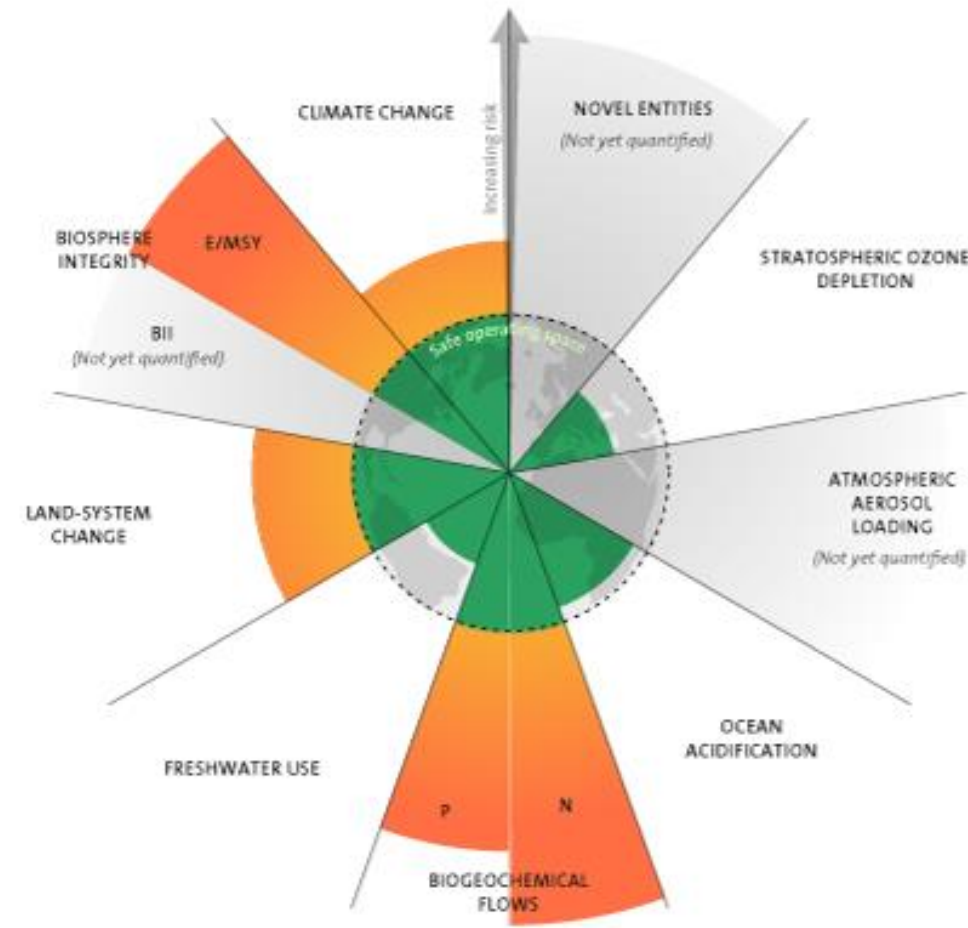
*All above data are the highest in the history for
the last recorded year*

2009



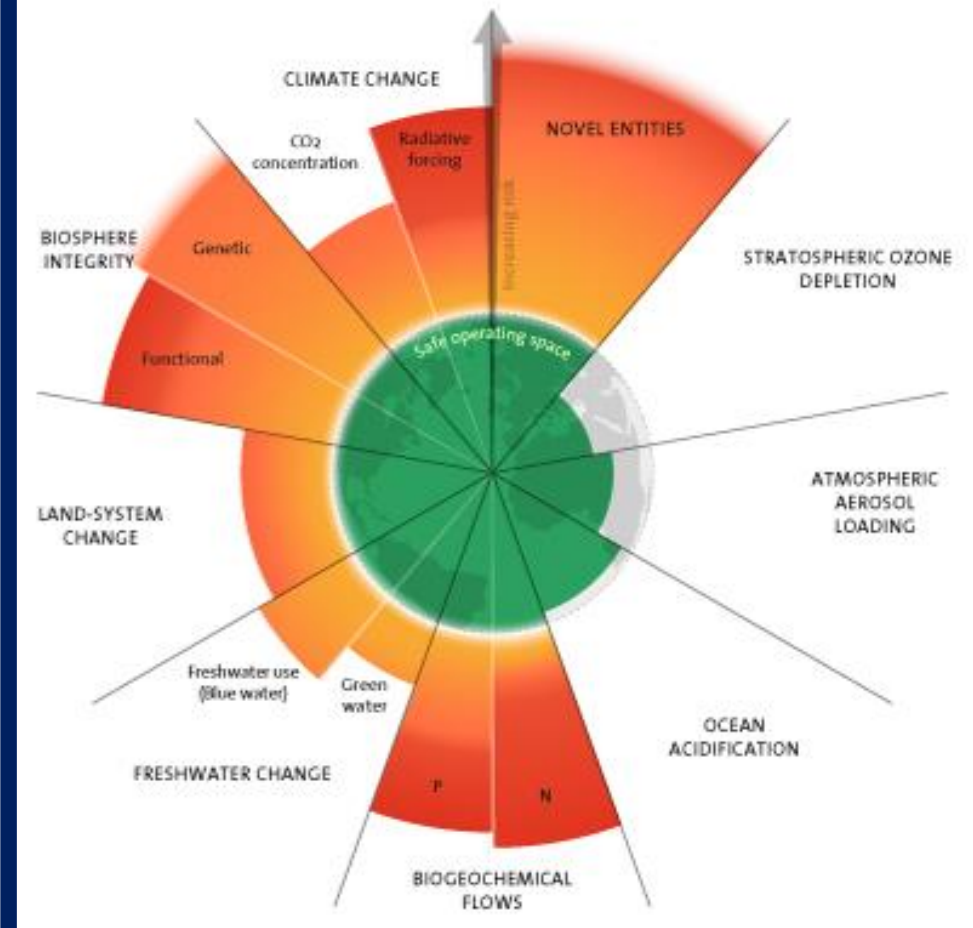
3 boundaries crossed

2015



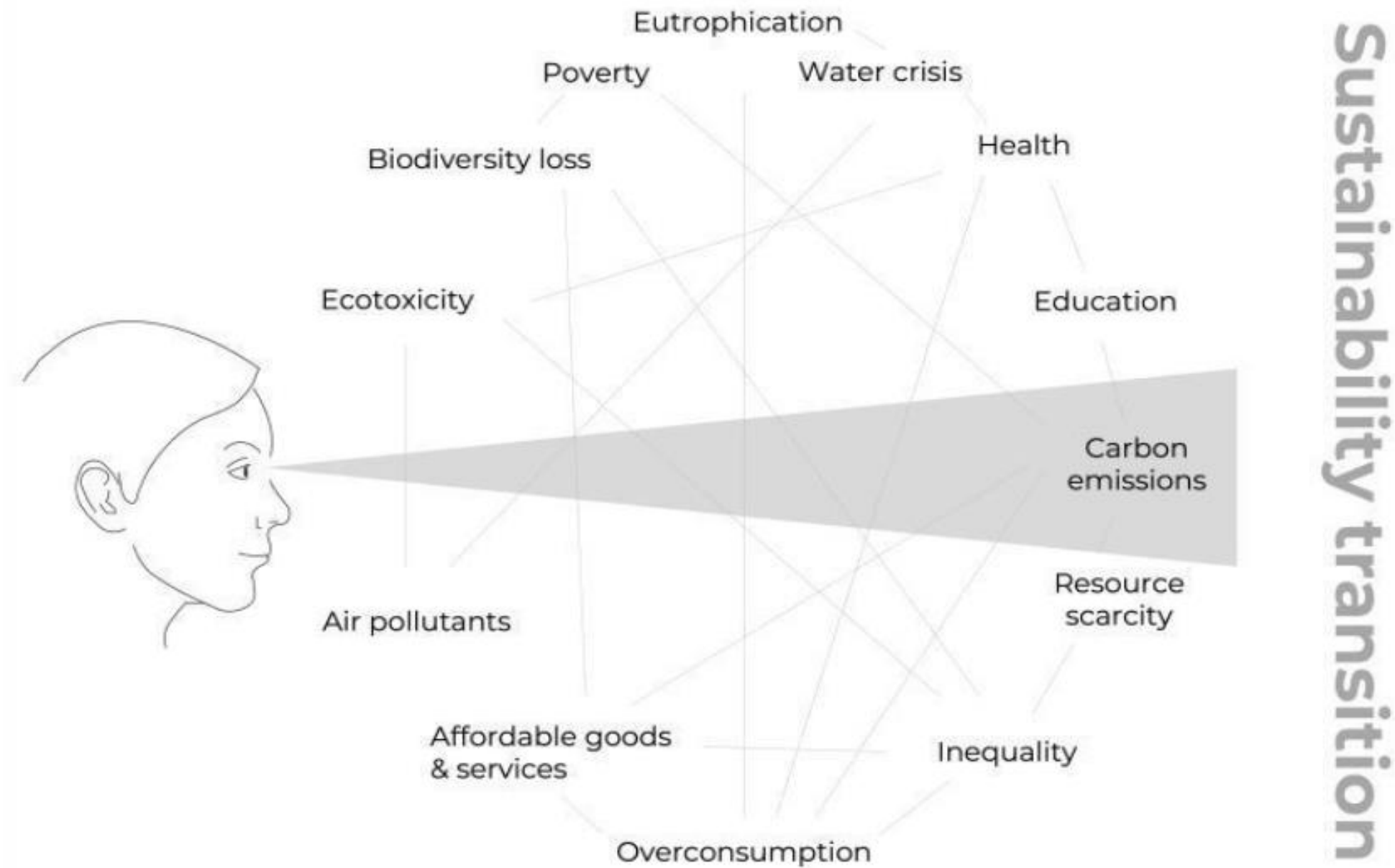
4 boundaries crossed

2023



6 boundaries crossed

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



*Discussion of climate often centres on carbon emissions, while a **focus on overshoot** highlights the materials usage, waste output and growth of human society ... all of which affect the Earth's biosphere.*

Climate Change can only be effectively addressed by combining

SUPPLY SIDE SOLUTIONS

CARBON MANAGEMENT

LAND

WATER

ENERGY

MATERIALS

DECOUPLING - CIRCULAR ECONOMY

DEMAND SIDE SOLUTIONS

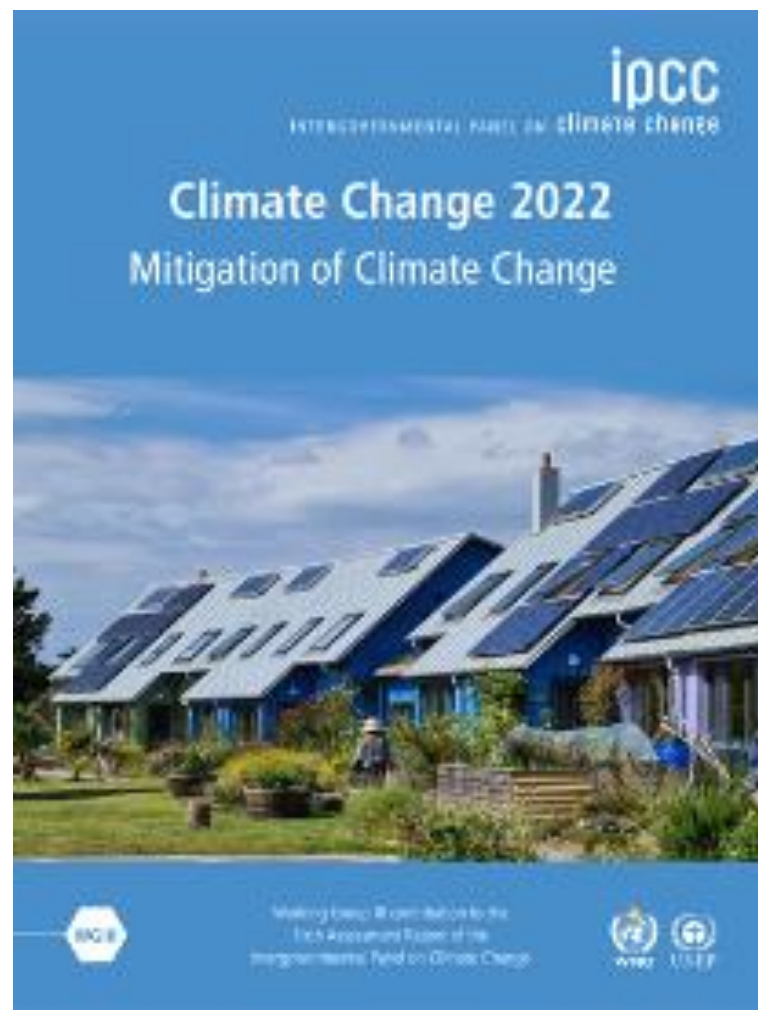
ECO-SYSTEM SERVICES, ENVIRONMENTAL SINKS

NATURE BASED SOLUTIONS

Resources - The Missing Link

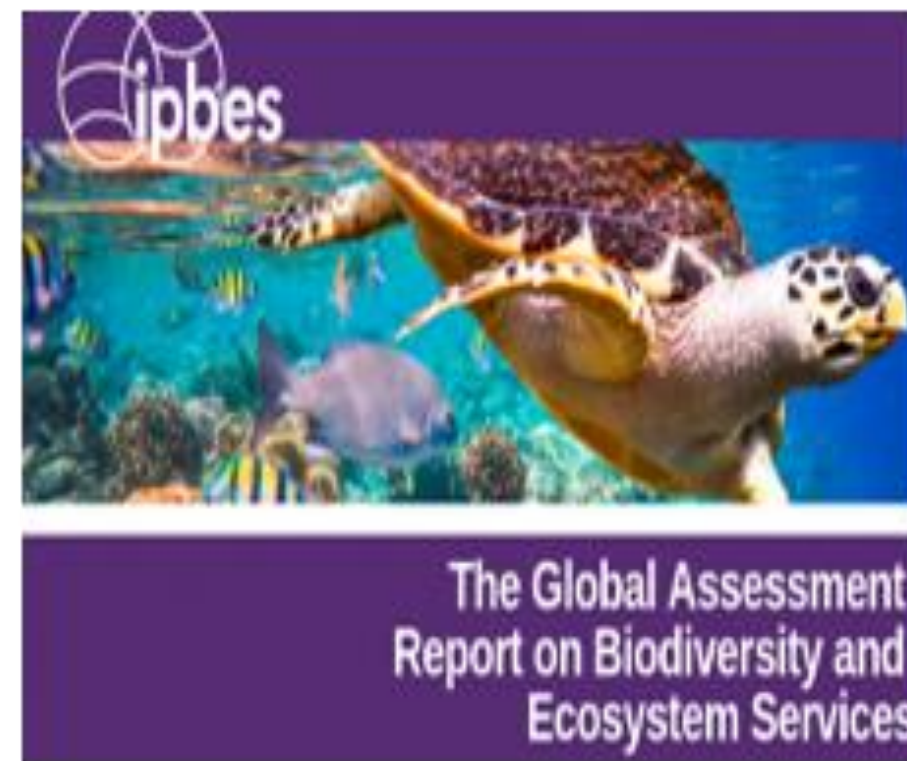
IPCC

Climate Change



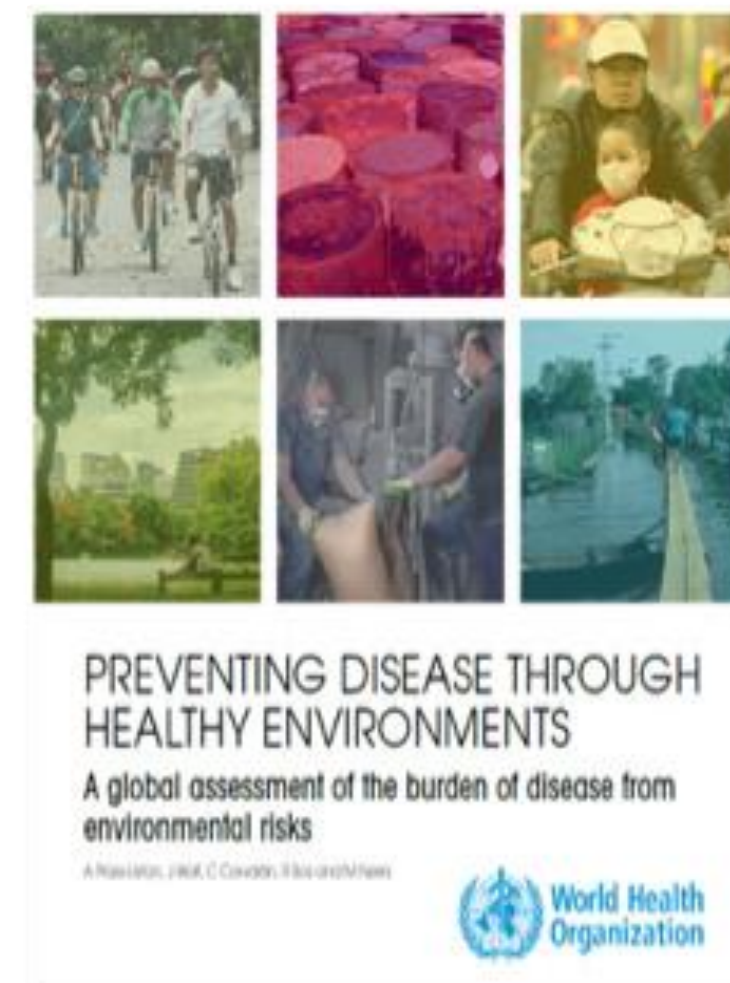
IPBES

Biodiversity loss and Ecosystem Services



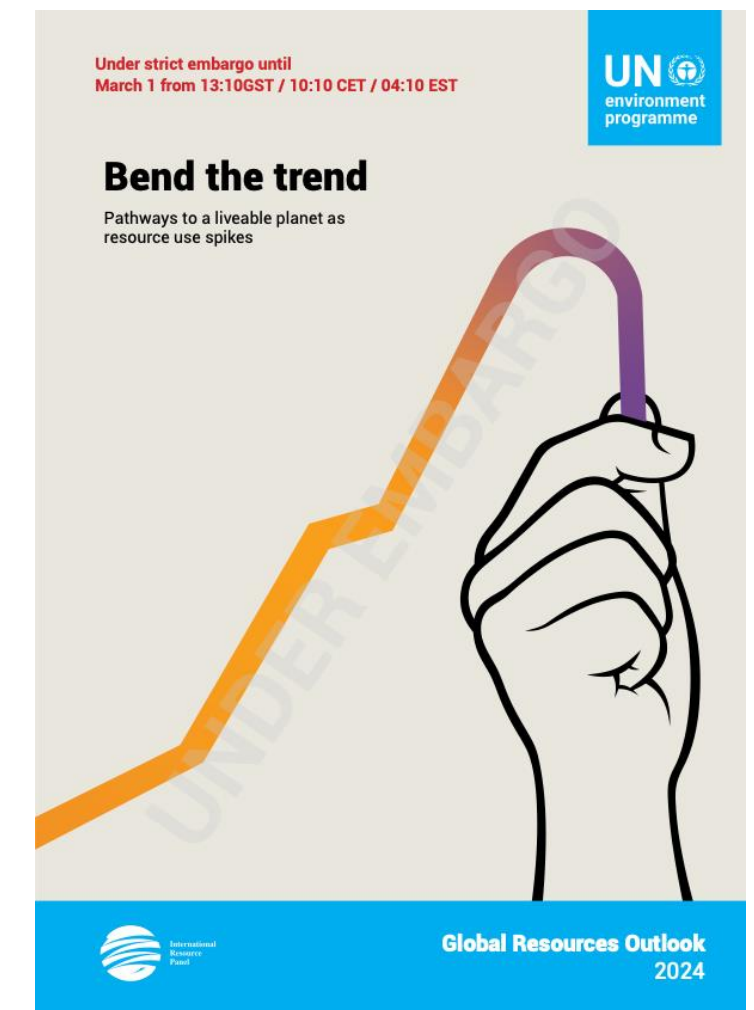
WHO

Environment and Health



IRP

Unsustainable Resource Use



Global Resources Outlook 2024

Under strict embargo until
March 1 from 13:10GST / 10:10 CET / 04:10 EST



Bend the trend

Pathways to a liveable planet as
resource use spikes



*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.*

Major novelty of GRO24

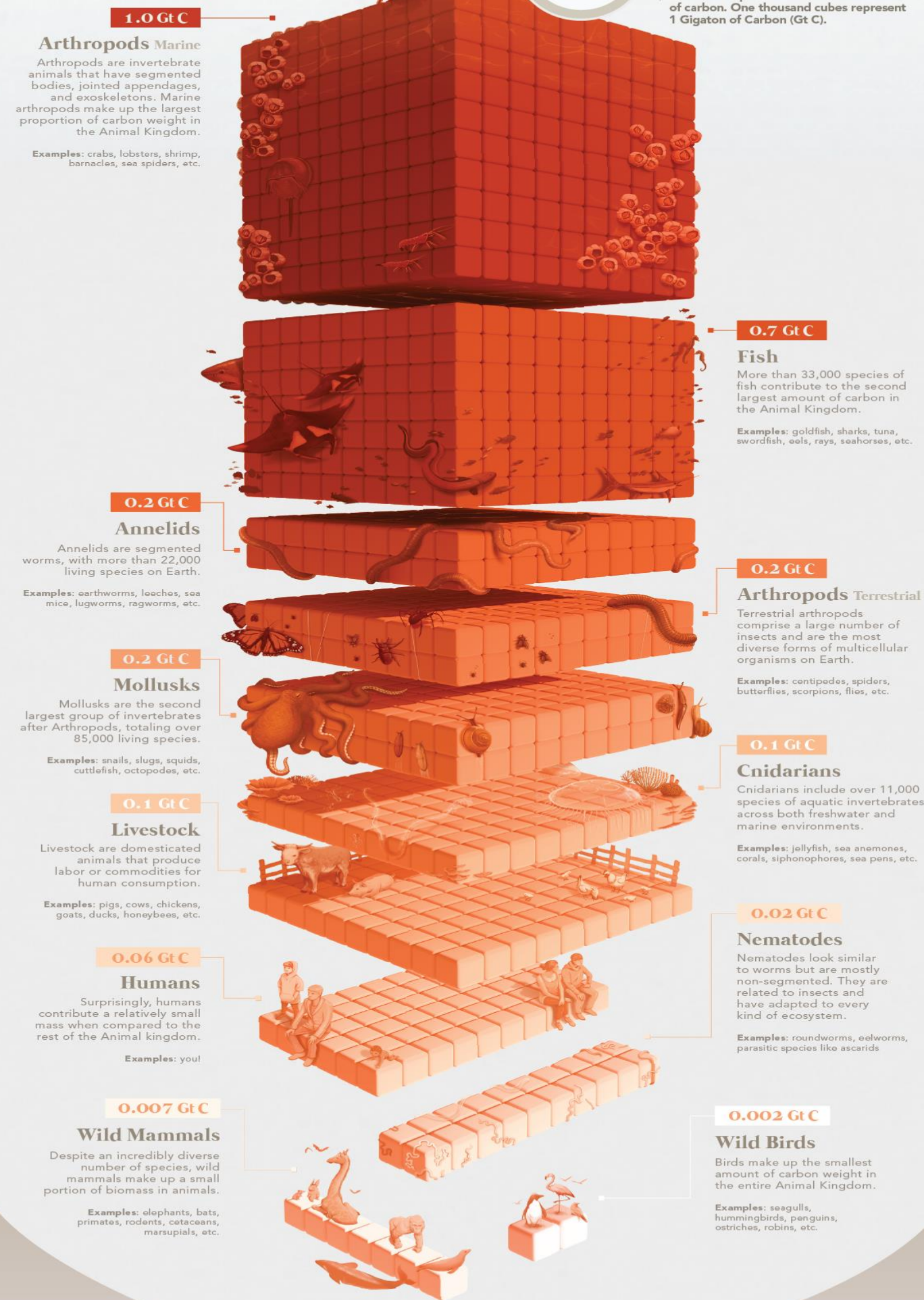
*We were simply **setting the order right**. Economy was invented to serve humans and not the opposite. We were looking at how to **optimise provisioning systems, human needs**, rather than maximising the output of individual sectors. We acknowledge the usefulness of GDP, but we should be **guided by wellbeing**.*

Drivers, pressures, and natural resource use trends

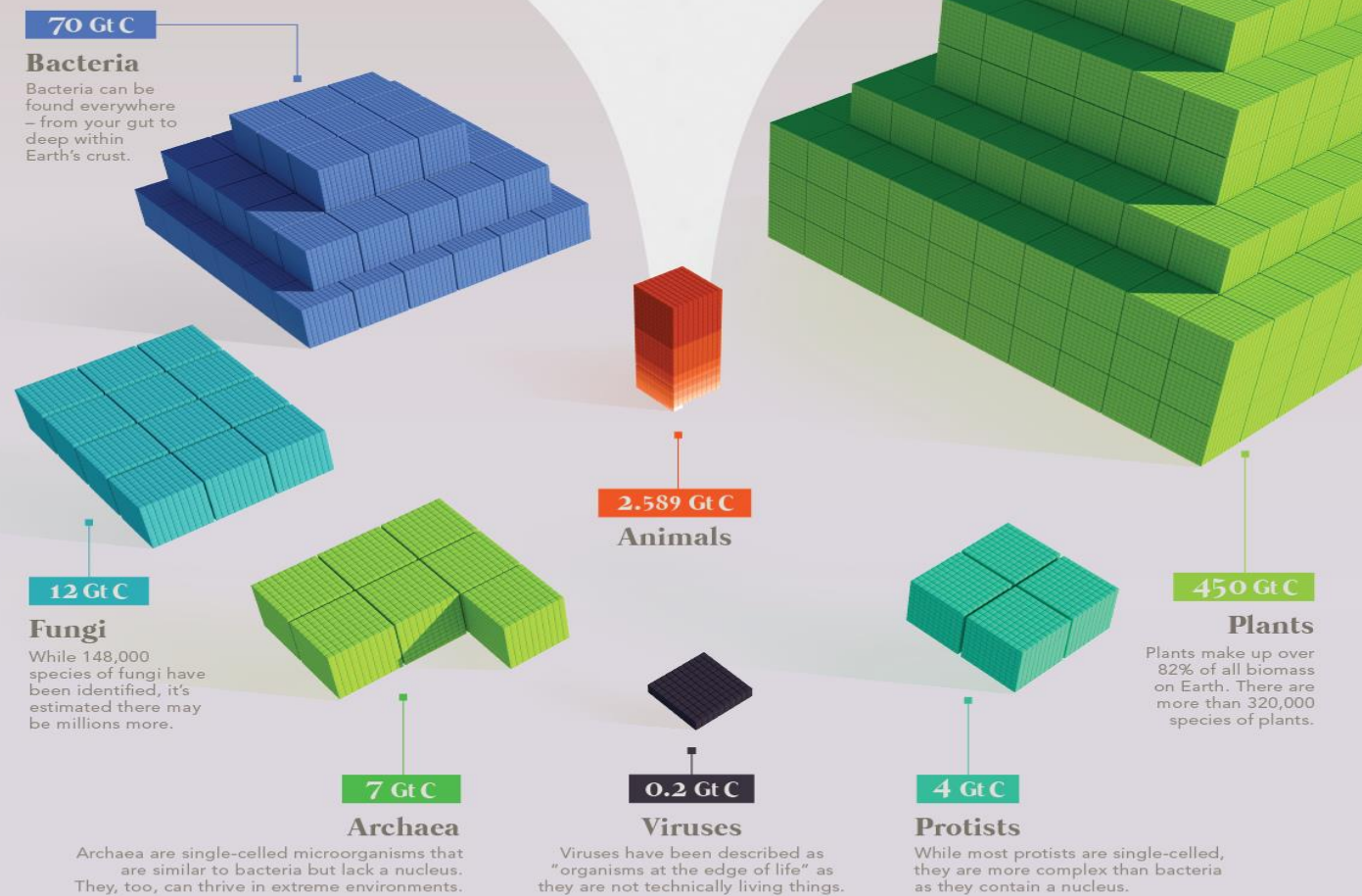
The Biomass of Animals

Biomass is measured by the amount of carbon an organism contains. Carbon is a primary component of all known life on Earth, used in complex biological molecules and compounds.

One cube represents 1 million metric tons of carbon. One thousand cubes represent 1 Gigaton of Carbon (GtC).



Comparing All Biomass of Life on Earth



Humans make up approximately 0.01% of all biomass on Earth.

SOURCE Bar-On, Y.M., Phillips, R., Milo, R., 2018. The biomass distribution on Earth. Proceedings of the National Academy of Sciences 115, 6506–6511. doi:10.1073/pnas.1711842115



COLLABORATORS RESEARCH + WRITING Anupa Iman Ghosh | DESIGN Mark Belan | ART DIRECTION Mark Belan

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Biomass of Life Humans in Perspective

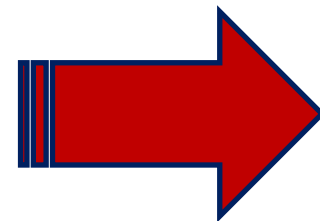
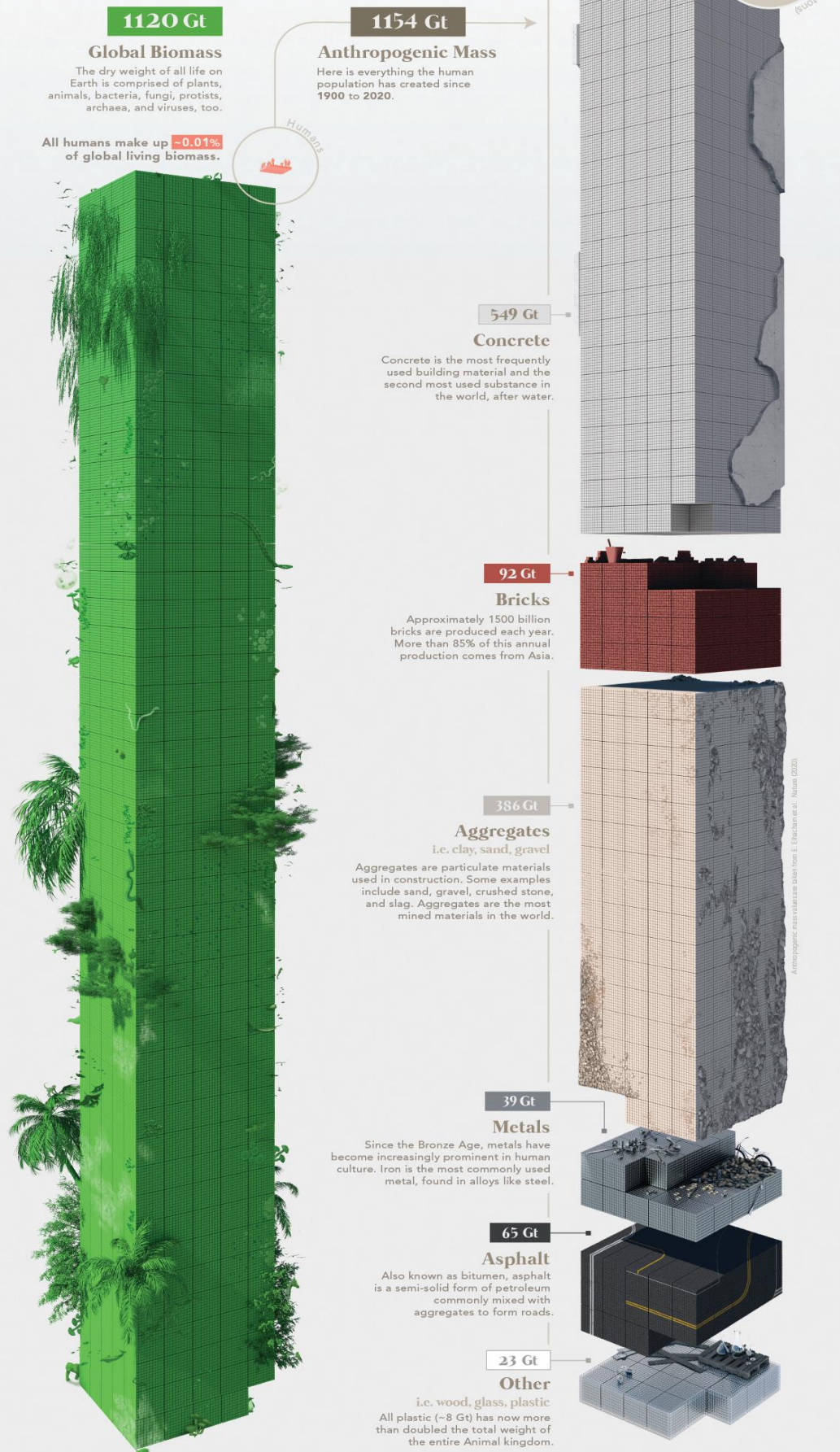
Source: Visualcapitalist.com

Visualizing the Scale of Anthropogenic Mass

Anthropogenic mass, or human-made mass, refers to the materials embedded within inanimate solid objects that are made by humans.

In 2020, the amount of anthropogenic mass exceeded the weight of all global living biomass.

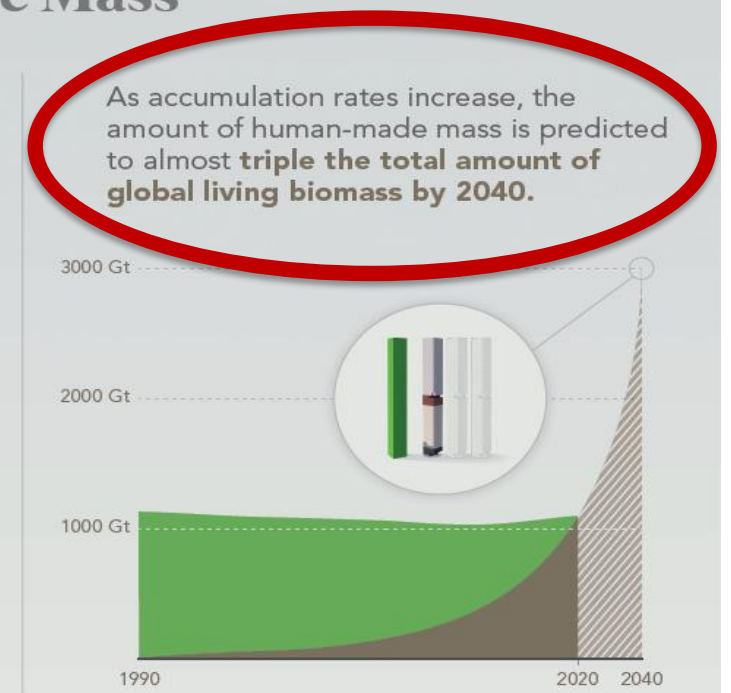
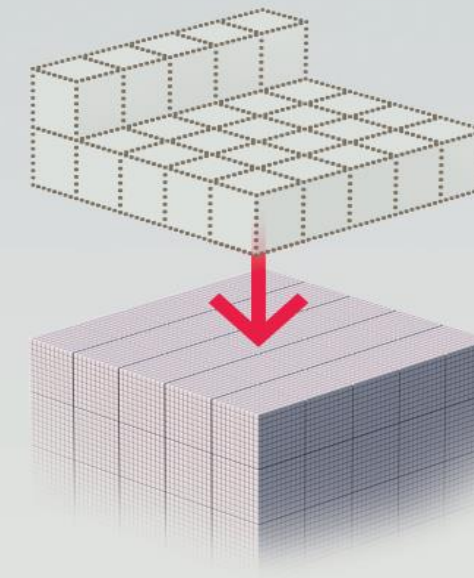
As humans continue to dominate Earth, questions surrounding our material output are increasing. We break down the composition of all human-made materials and the rate of their production.



The Accumulation of Anthropogenic Mass

The current rate of accumulation for human-made mass is approximately **30 Gt of mass per year**.

This is equal to each person on Earth producing their own weight in human-made mass every week.



These trends highlight the alarming speed and volume in which human contributions are impacting the world.

SOURCE Elhacham, E., Ben-Uri, L., Grczovski, J., Bar-On, Y.M., Milo, R., 2020. Global human-made mass exceeds all living biomass. Nature 588, 442-444. doi:10.1038/s41586-020-3010-5



COLLABORATORS RESEARCH + WRITING Bruno Venditti | ART DIRECTION & DESIGN Mark Belan

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Source: Visualcapitalist.com

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 copper, among other



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



Land



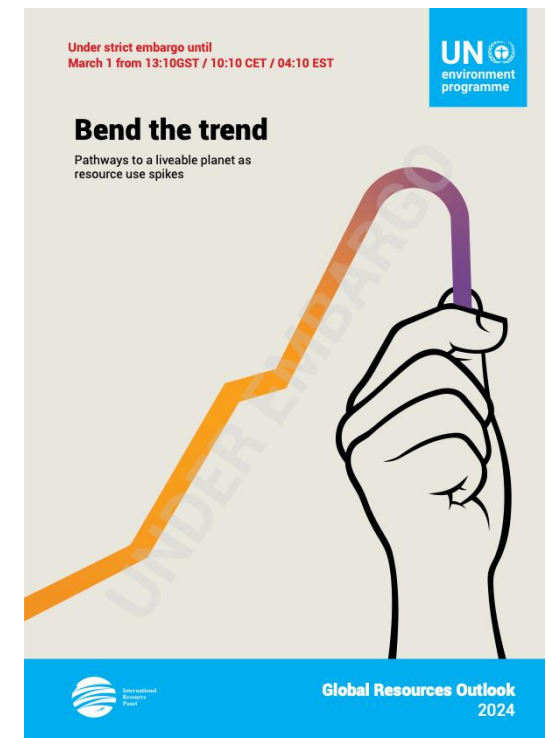
Water

Materials:

Everything extracted from the Earth

Resources:

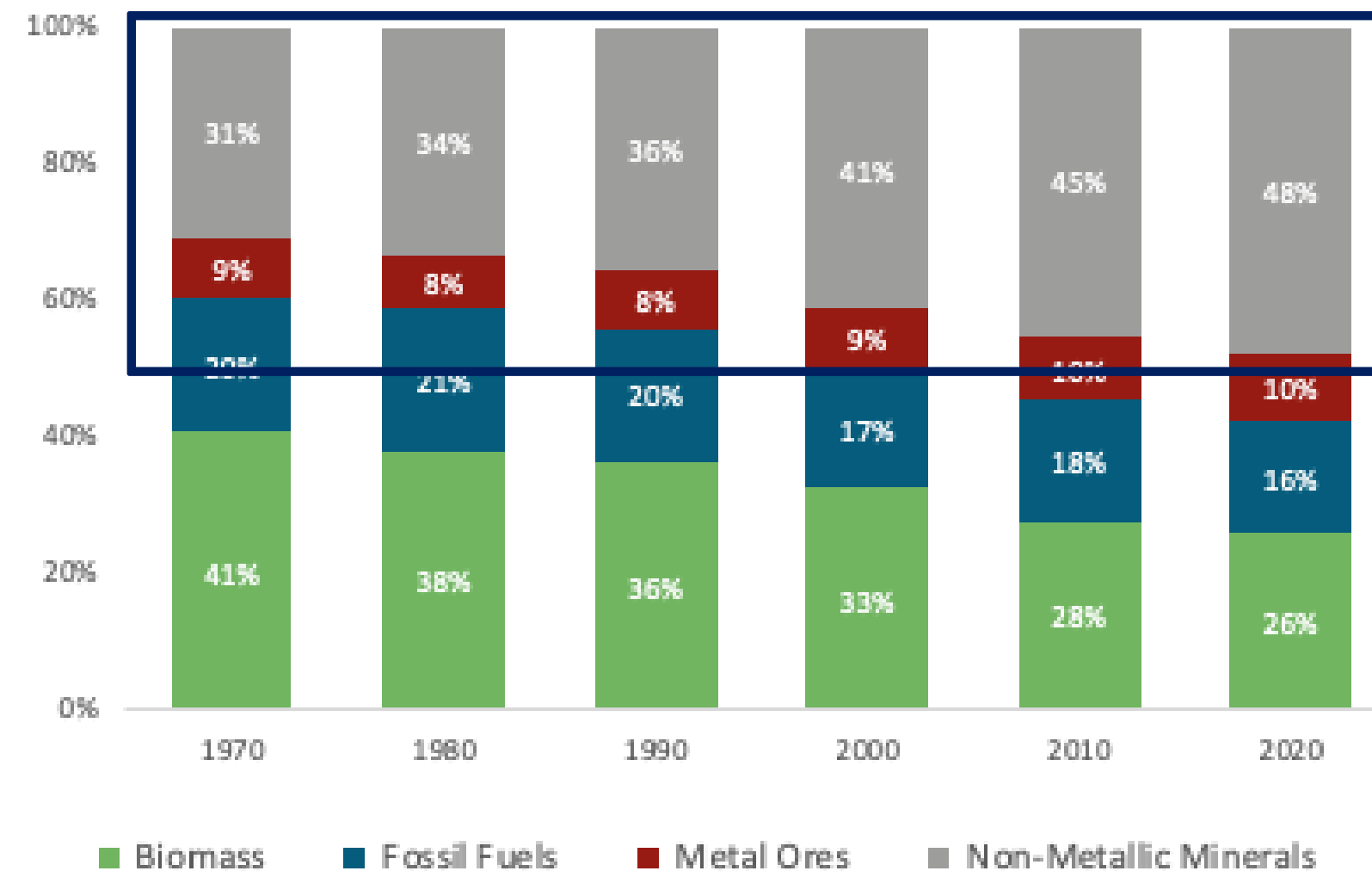
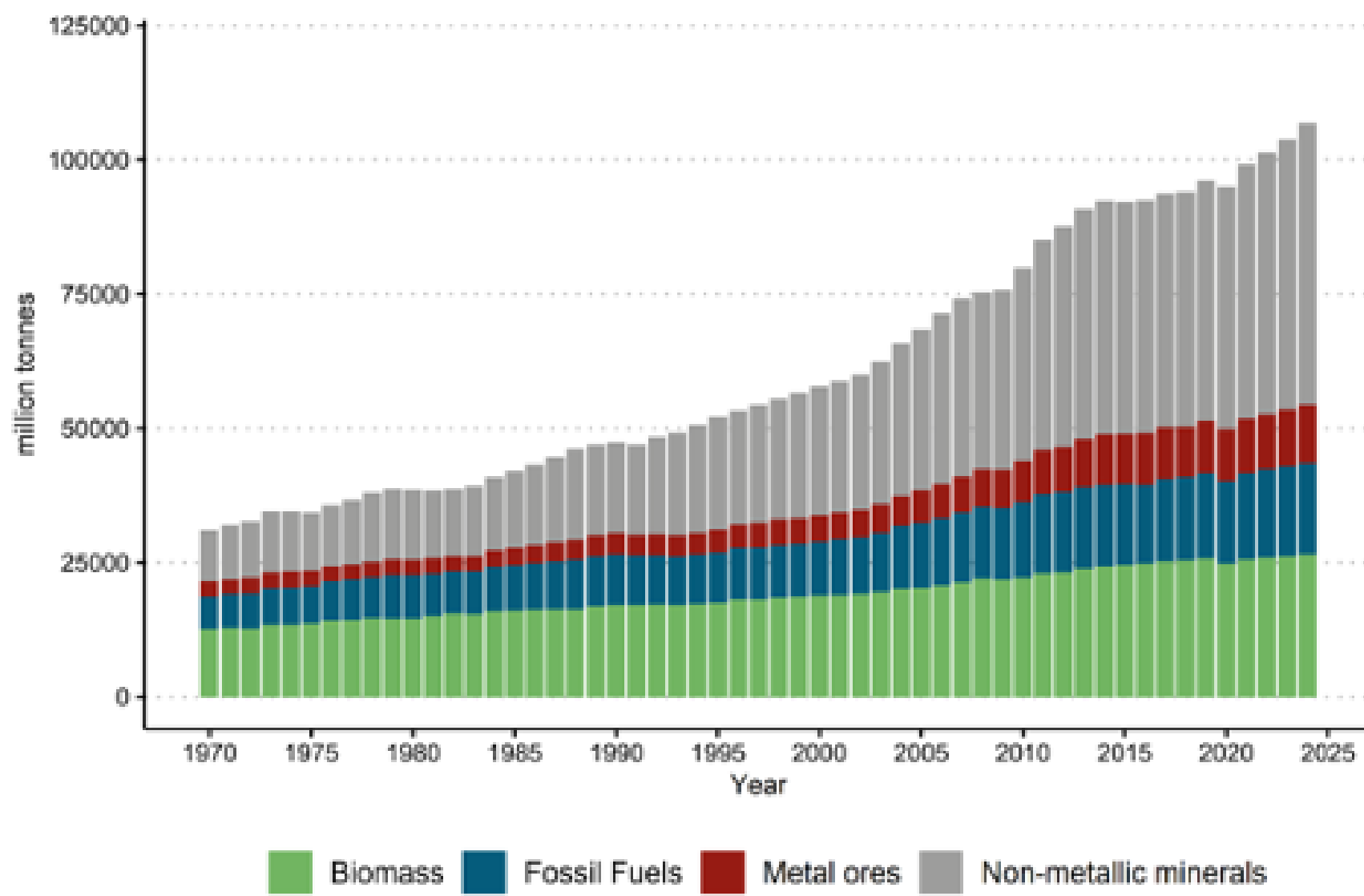
Materials + Land and Water



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

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

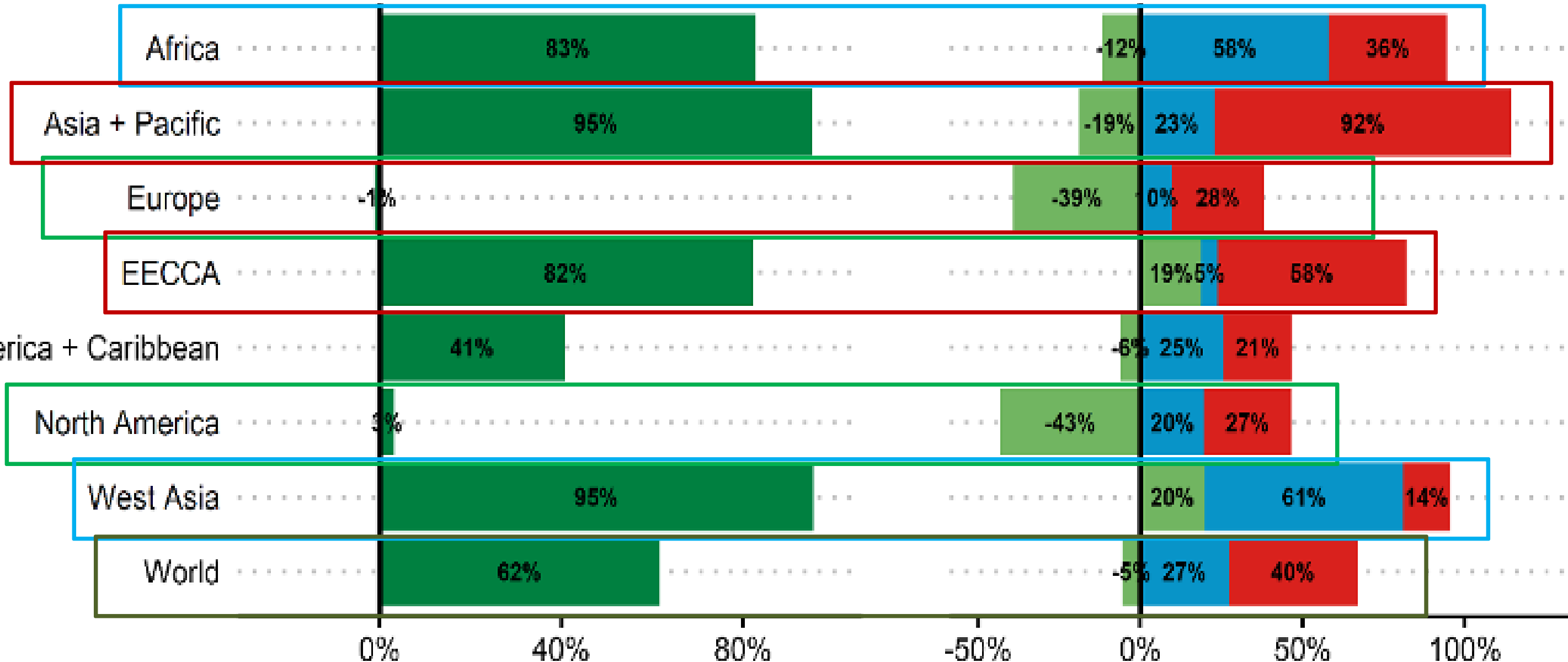


Global material extraction, four main material categories, 1970 – 2024, million tones.

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

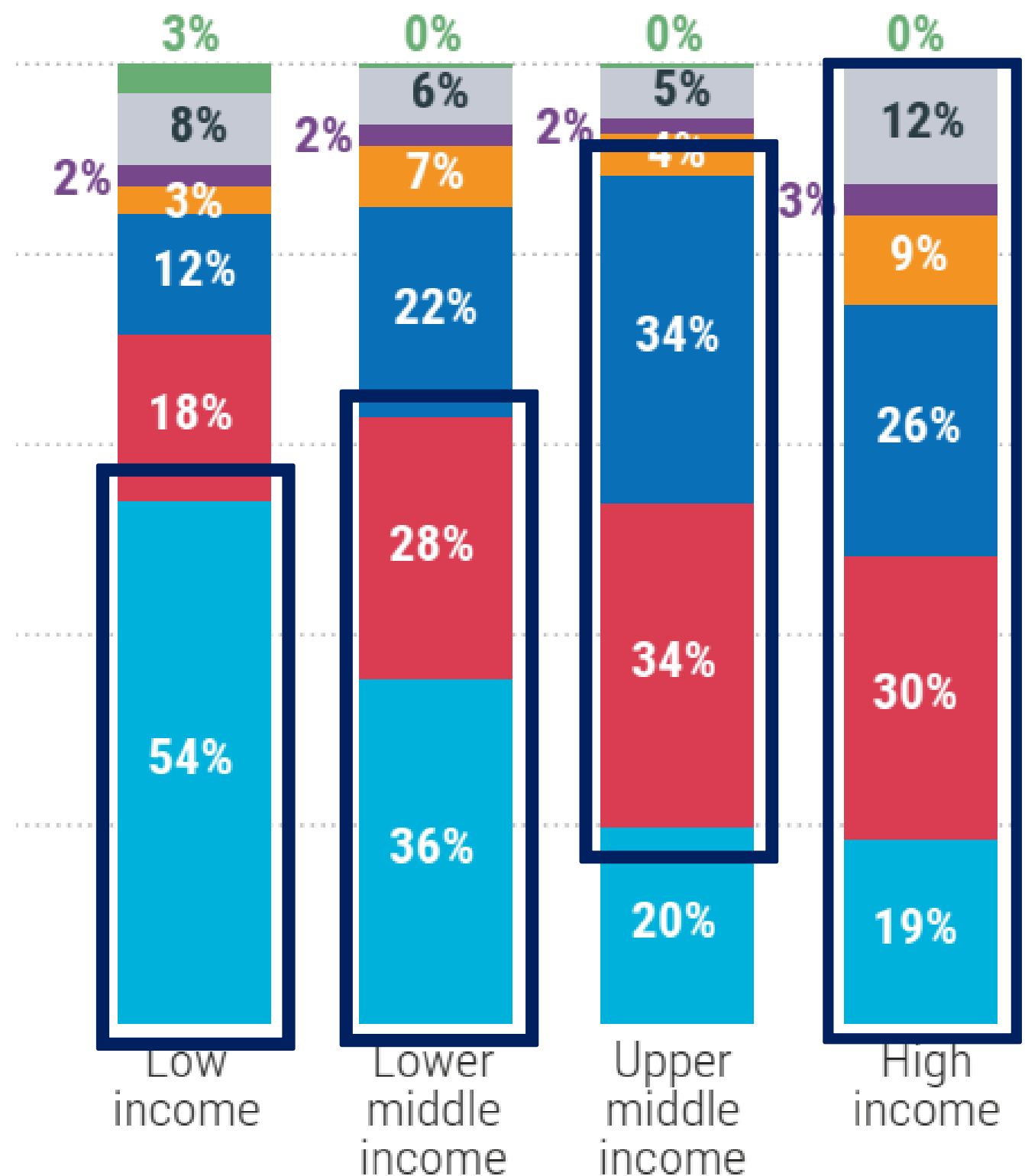
Trends: Drivers of Material Footprint 2000-2022, % by world regions

Tons per capita - 2020
5
13
17
18
12
30
13
13



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

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

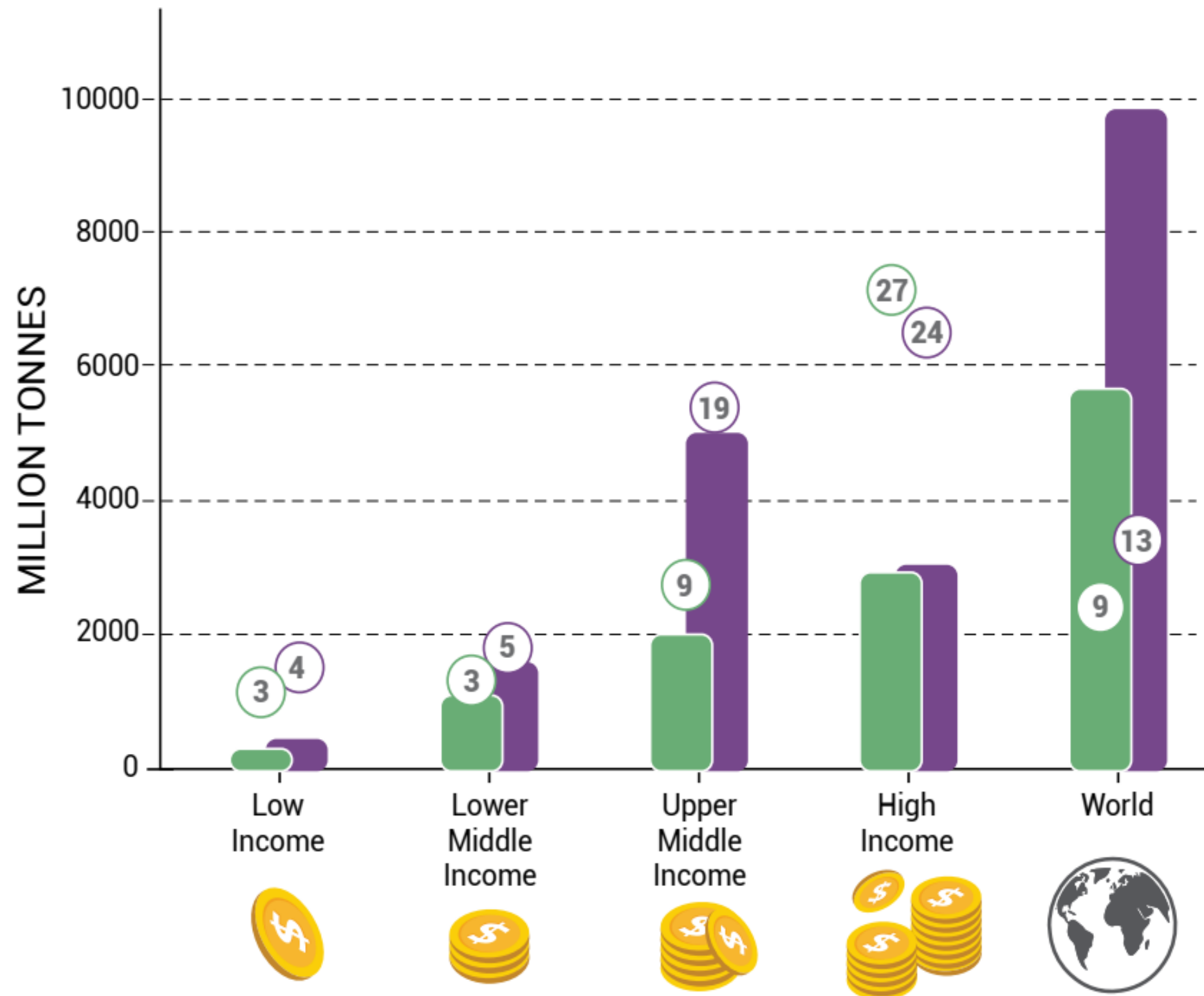
Built environment and mobility: (construction, transport sector & infrastructure): 59 billion tonnes

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

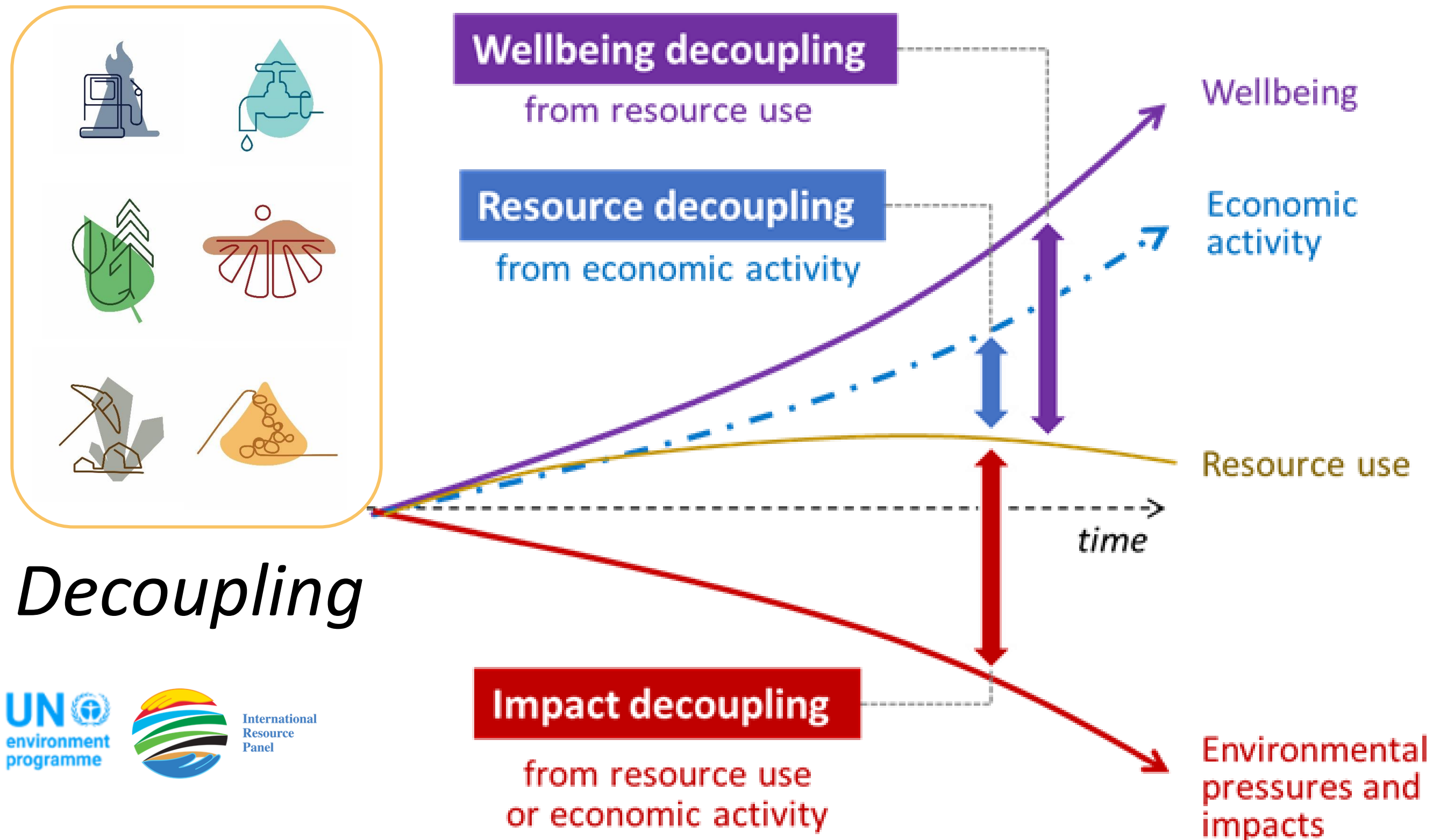
Trends: High-income countries use six times more materials per capita and are responsible for ten times more climate impacts per capita than low-income countries.



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.

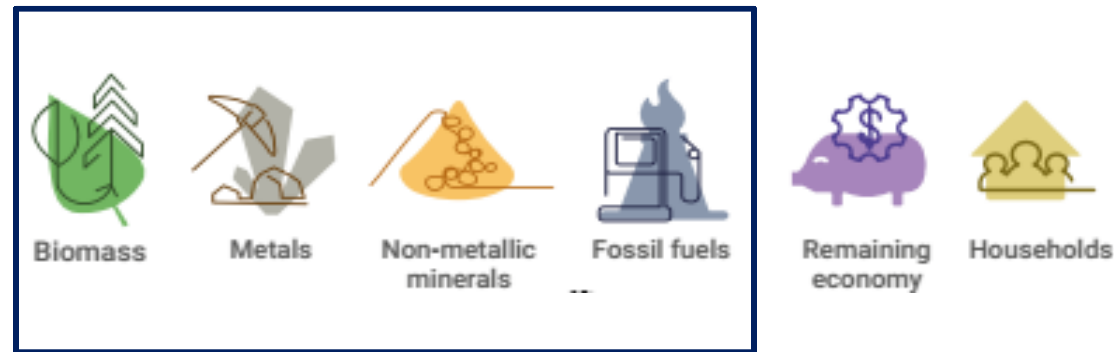
*If current trends would continue, global material consumption is predicted to **increase for 60% by 2060 comparing to 2020 levels***



Resource use is driving the triple planetary crisis

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

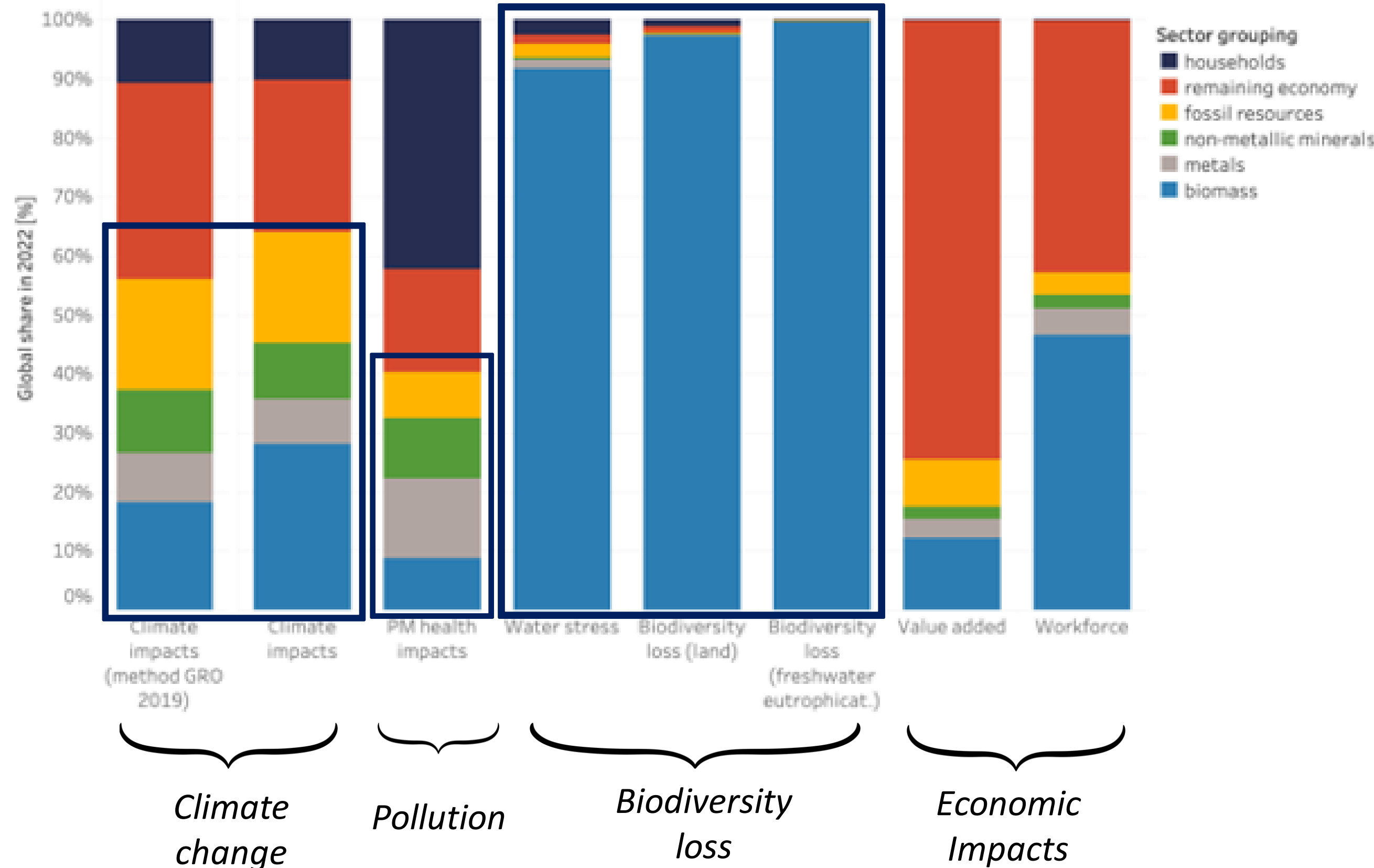
Environmental impacts of materials in the value chain in extraction and processing phase

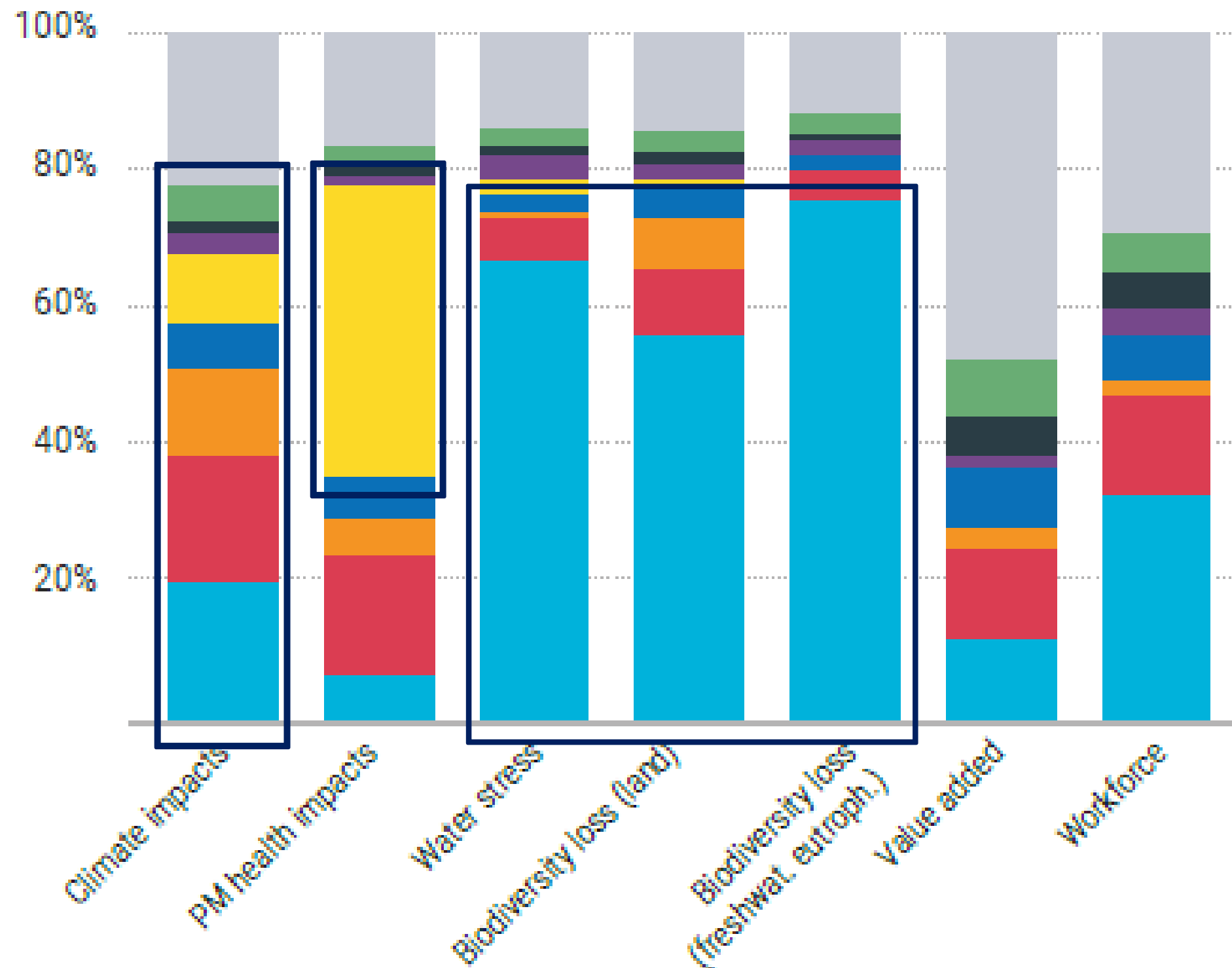


60% of global climate change impacts including land use change

40% of air pollution health impacts

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





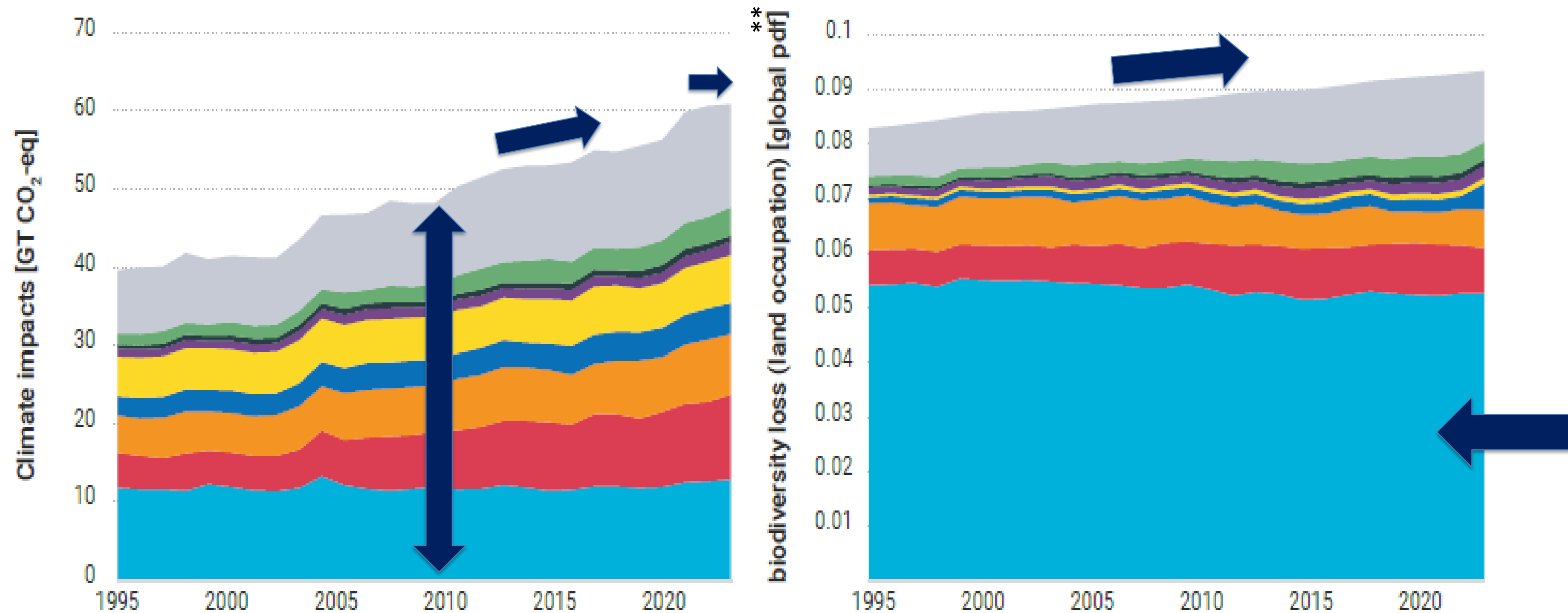
Impacts: "Provisioning Systems Human Needs in the Year 2022"

Provisioning system*

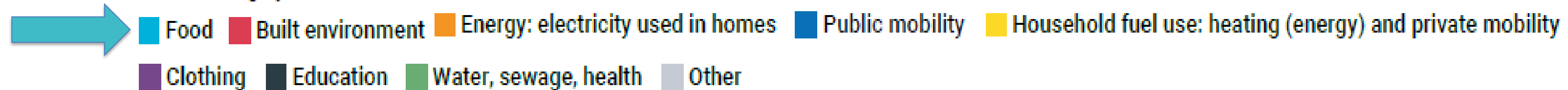
- Food
- Built environment
- Energy: electricity used in homes
- Public mobility
- Household fuel use: heating (energy) and private mobility
- Clothing
- Education
- Water, sewage, health
- Other

*Including embodied energy

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



Provisioning system*



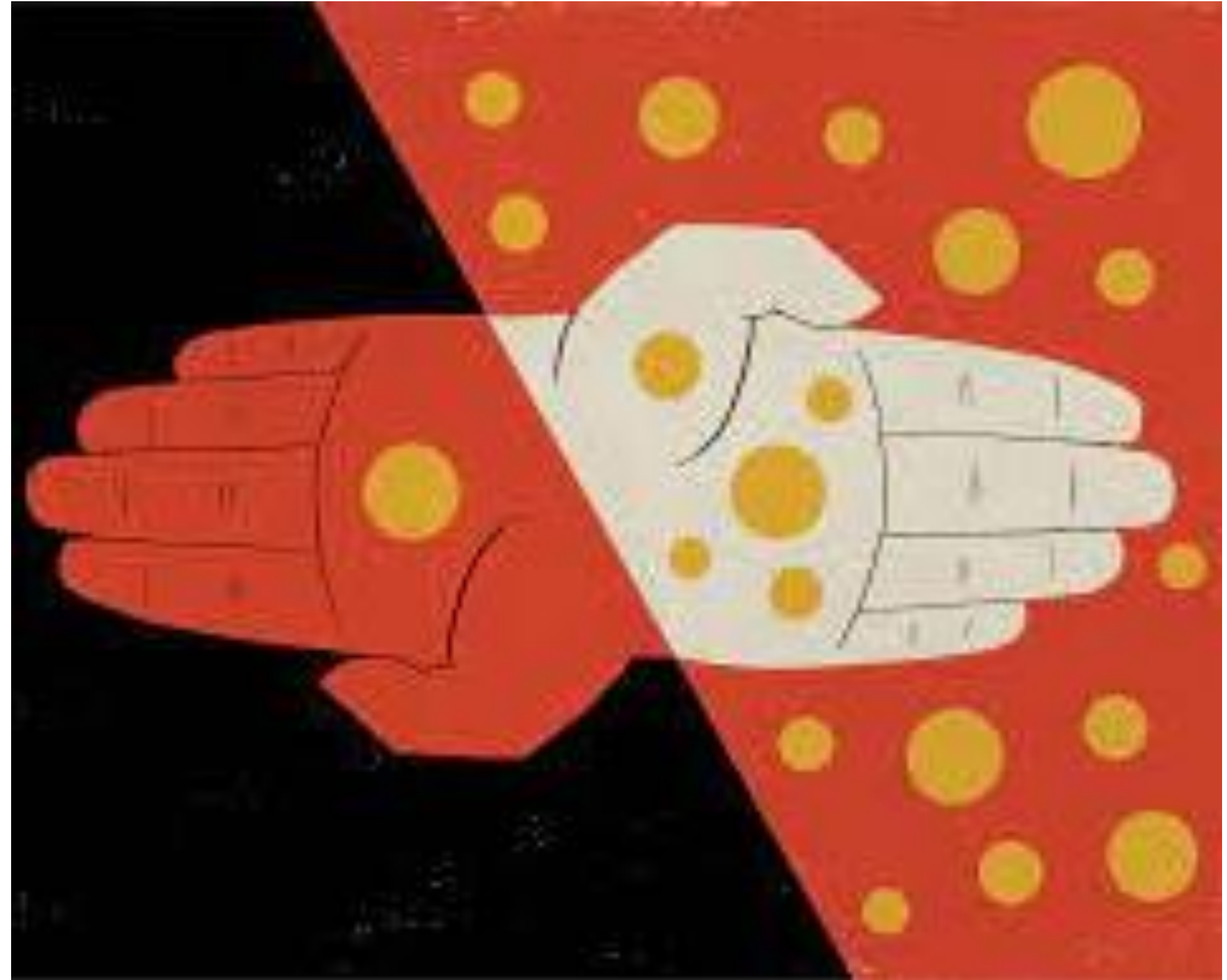
*Including embodied energy

** Global pdf: Global potentially disappeared fraction of species

Resource use and equity & justice implications
Complementing supply with demand side

*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.**”*



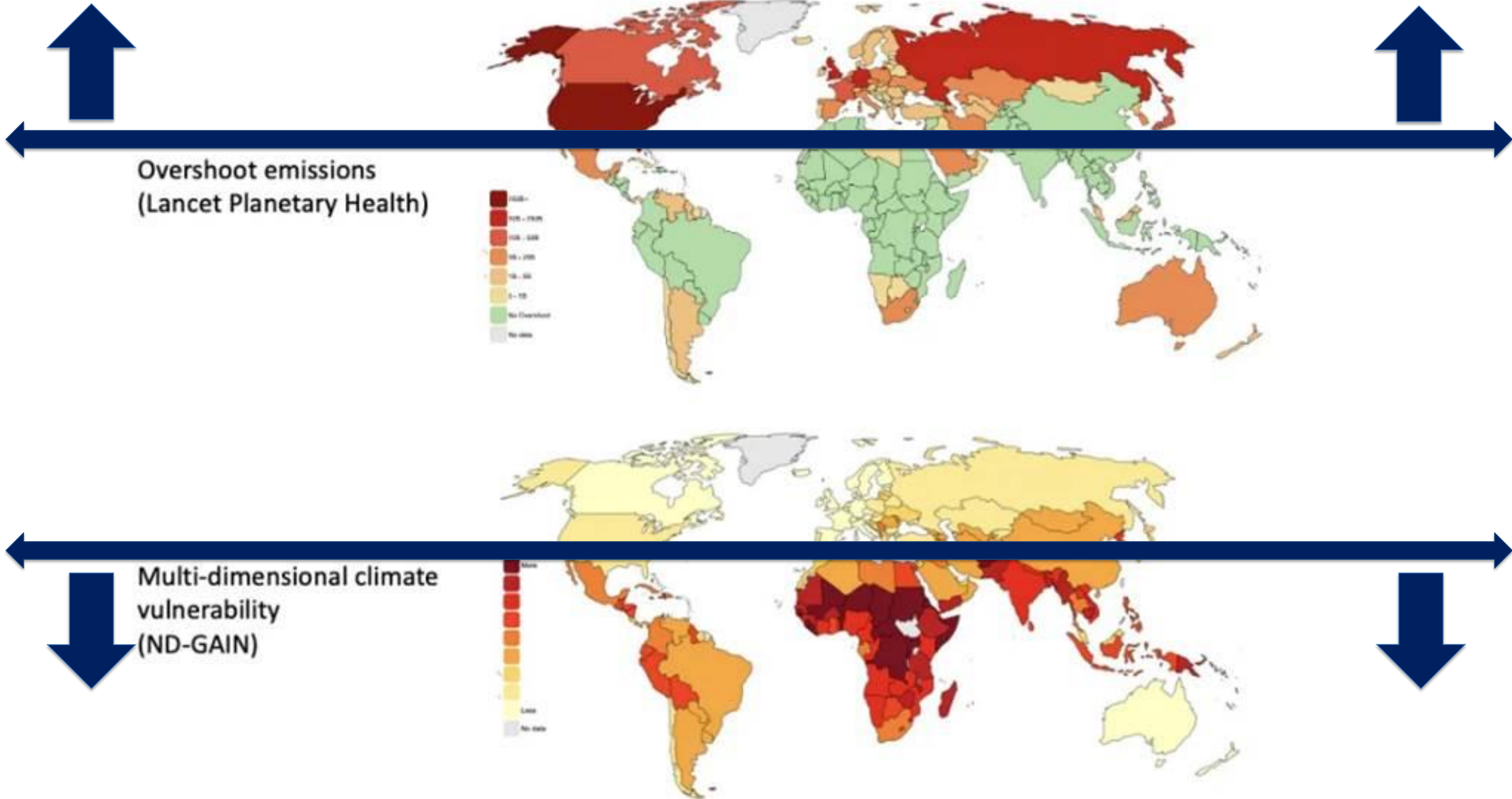
Two scenarios:

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

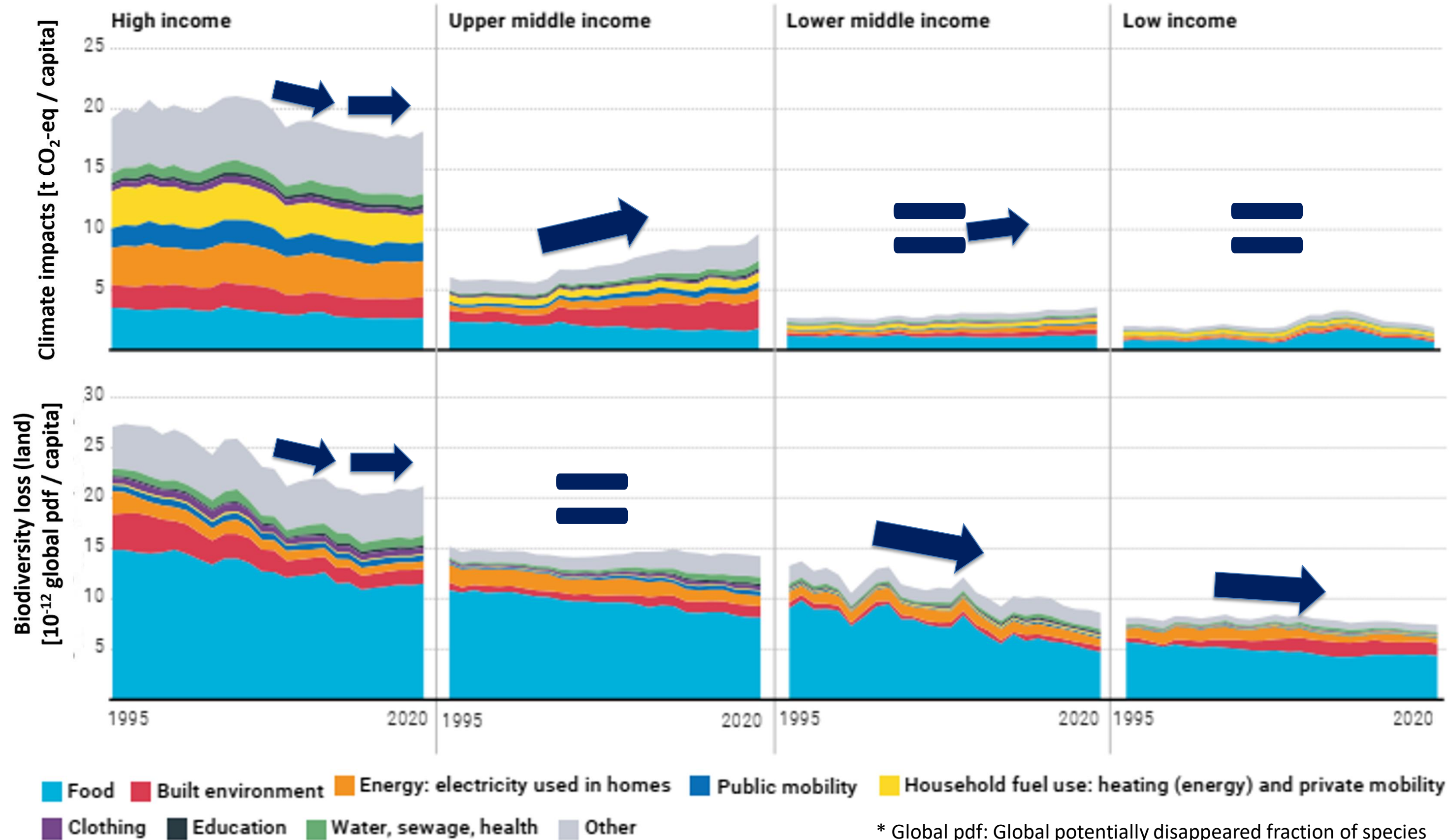
The key outcome is that we will see *negative social tipping before severe environmental tipping points* and that equality and poverty alleviation is key if we want people to be concerned about regenerative economics and decarbonisation.



Those Benefiting Most, and Those Facing Worst Climate Consequences



Impacts: "Provisioning systems" - human needs by income groups 1995-2020



Scenario Outlook

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



International Resource Panel

Multi-model framework with provisioning system lens



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



Growing Economy:

+ 3%

Reduced inequality:

Lower income group Material Footprint gap

Improved wellbeing:

Higher HDI all income groups

Reduced growth in resource use:

By 30%

Reduced environmental impacts:

GHG emissions - 83%

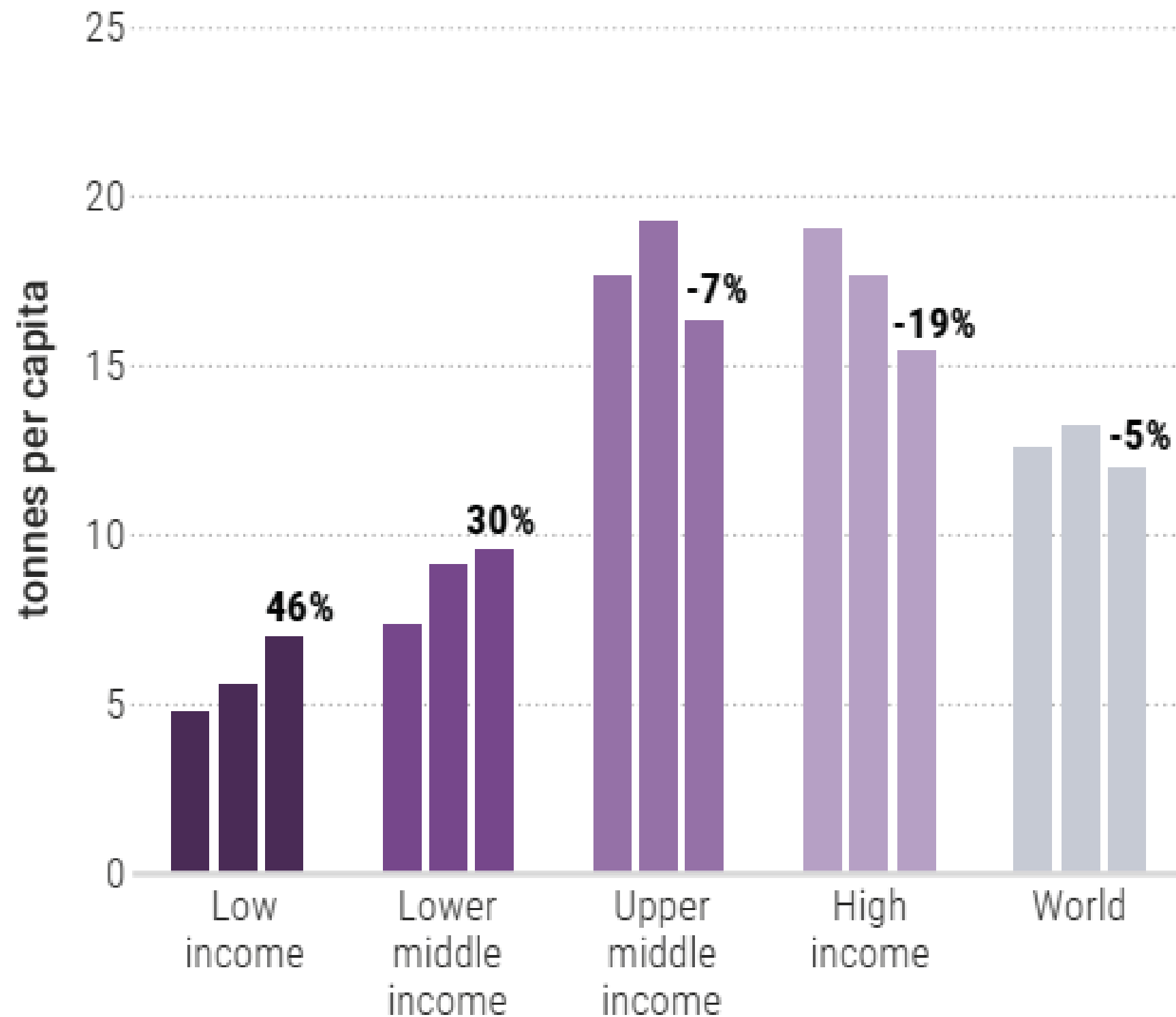
Energy demand - 27%

Agricultural land area - 5%

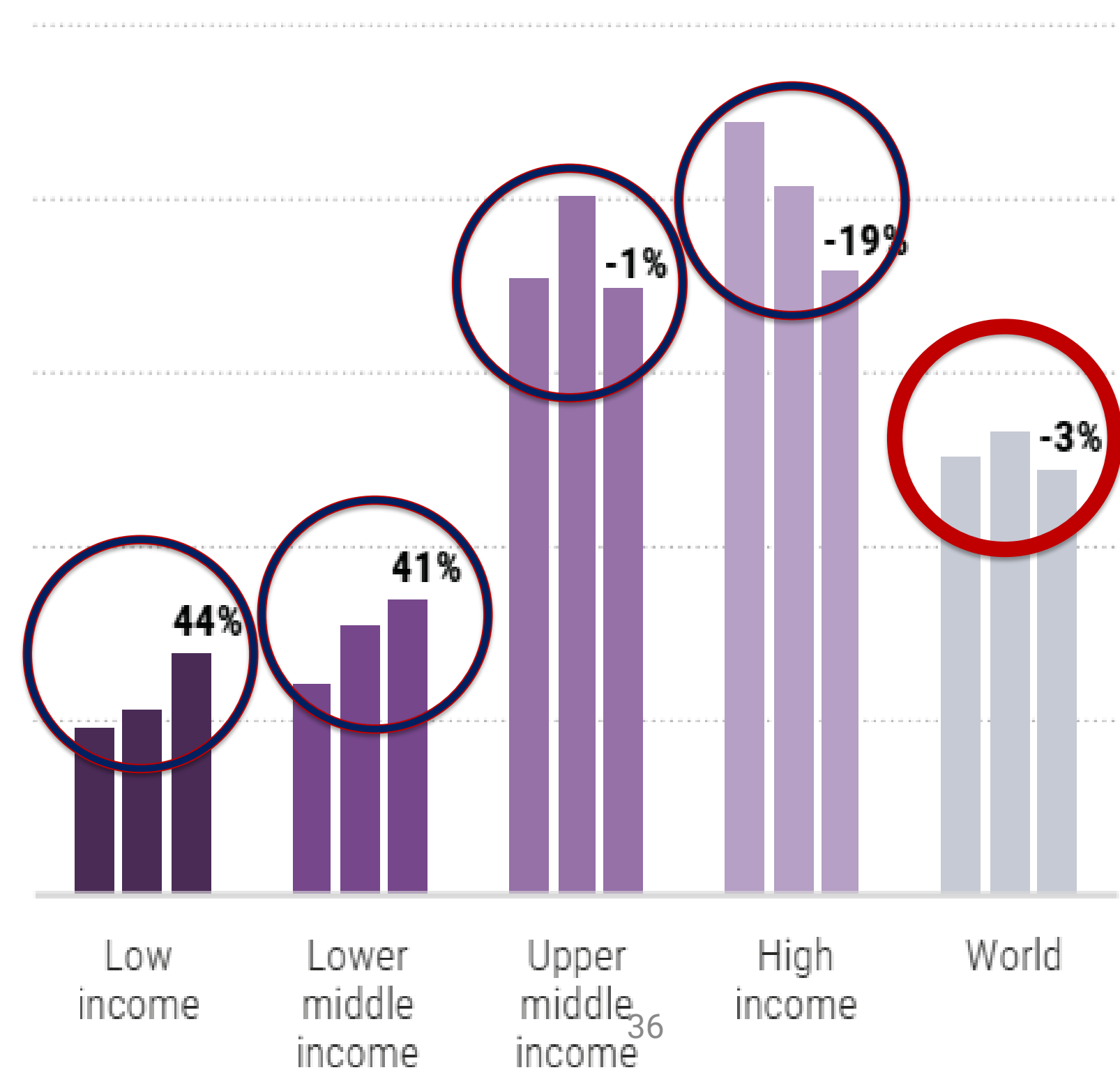


Impacts: Reductions in high consumption contexts means that resource use grows where it is most needed

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



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





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.*

A call to action for sustainable resource use: Achieving sustainable prosperity is possible, but transformative action needs to start today

Main question often-overlooked to be addressed

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



<https://edistaffing.com>

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



Demand side, Sufficiency, Consumption

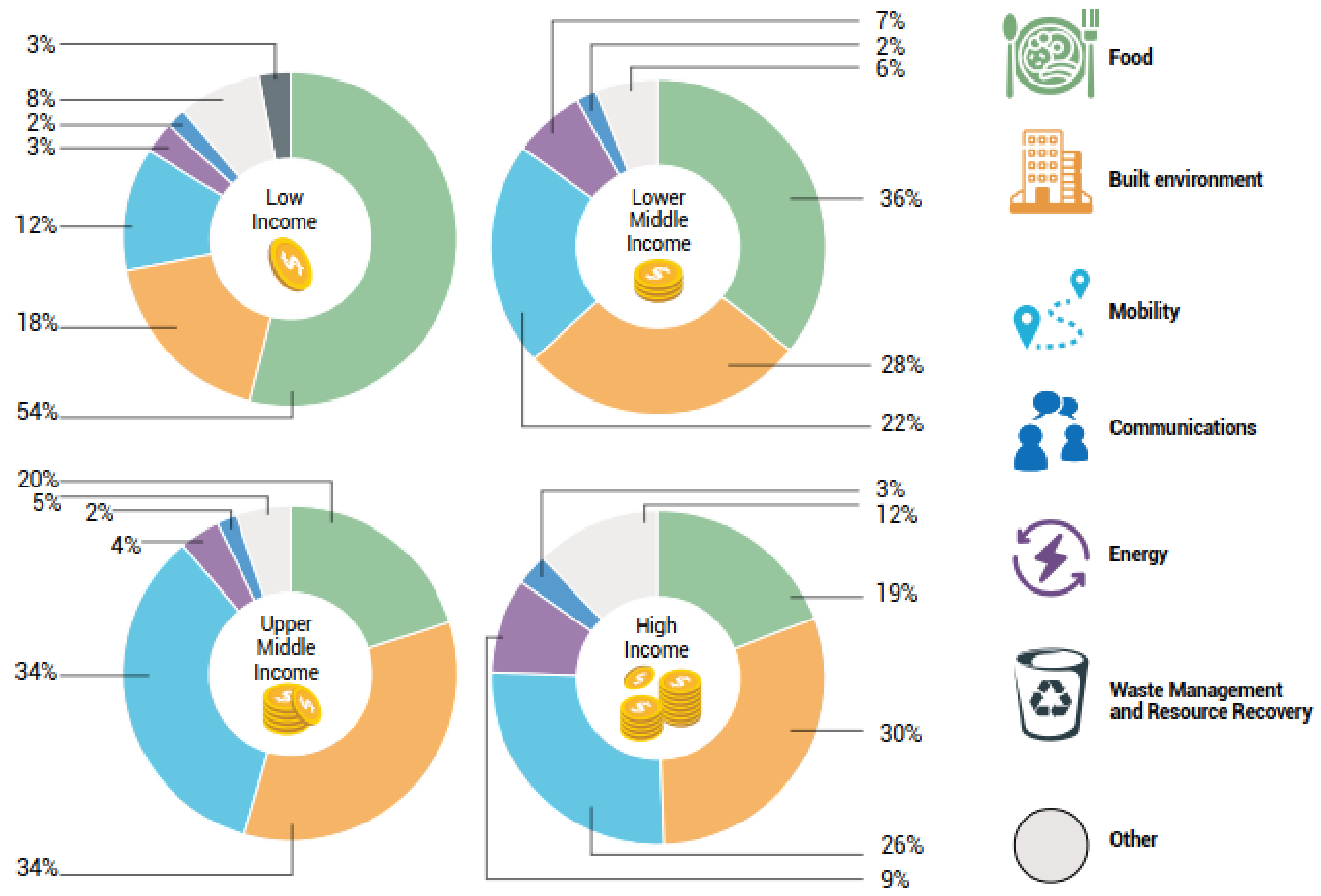
We can reduce demand (of energy and materials) from consumption as well as from production side

*From the **consumption side** we can reduce consumption through optimising what is sufficient to meet human needs.*

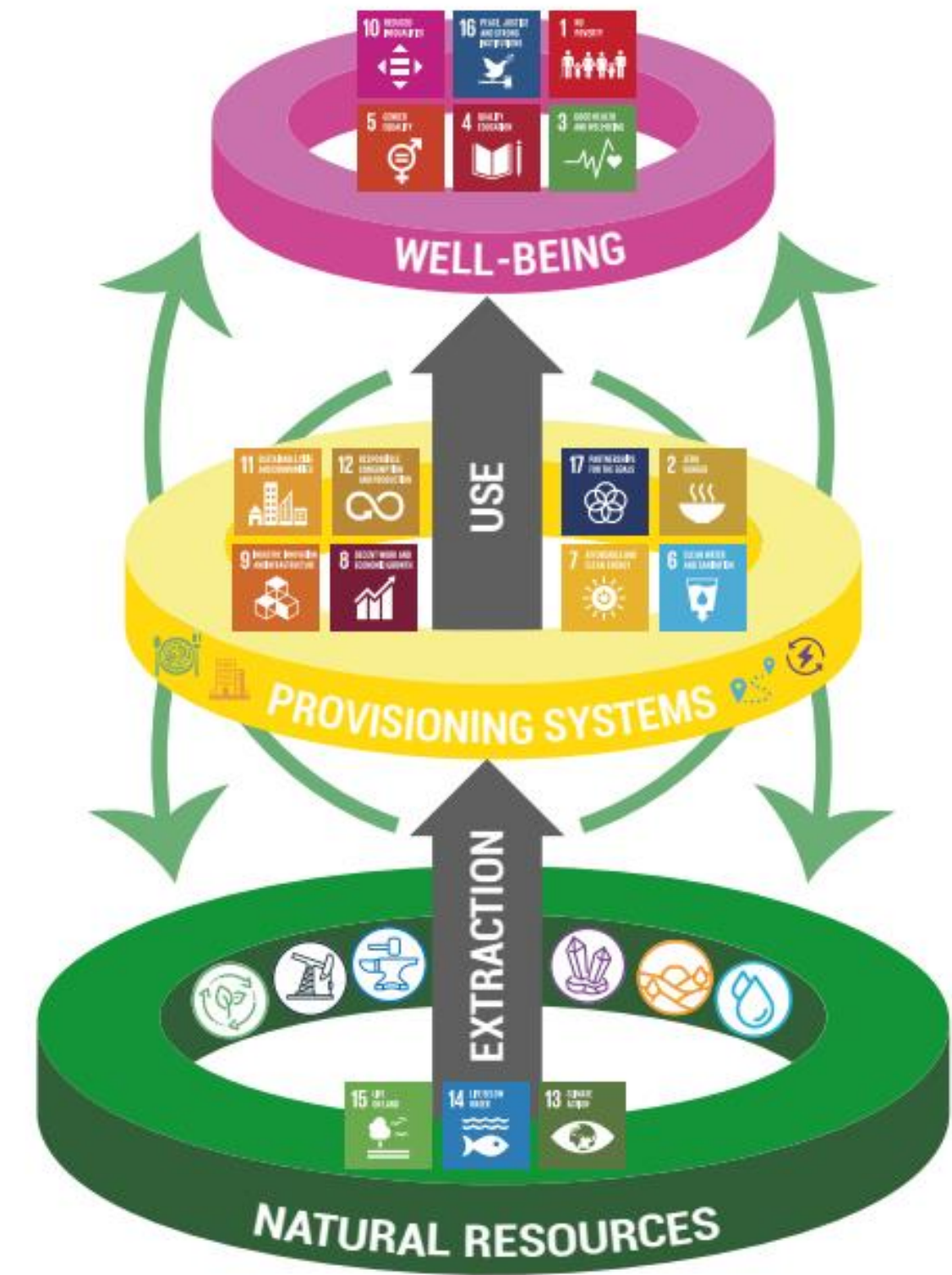
*From the **production side** we can provide human needs by using less energy & materials – optimising sufficiency of energy and materials needed to meet human needs.*

***To clarify:** Consumption behaviour concept is more addressing consumer.
Consumption system concept is more addressing producers.*

Solutions: Focusing on supply-side (production) measures must be supplemented with a strong focus on demand-side (consumption)



Shares of material footprint by provisioning systems and by country income group, 2020, percentage



*Actions should focus on the most
resource-intensive provisioning systems
reorganizing them by using system-based
logic and solutions*

This would allow and incentivise the cross-sector innovation and shifts to a more future-fit business models leading to the reduction of resource use and deliver multiple co-benefits for people and planet.

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



Institutionalizing resource governance and defining resource use paths

- *Global and national institutionalization of natural resource use within global sustainability agendas and action on environmental agreements*
- *Definition of global and national resource use paths*



Directing finance towards sustainable resource use

- *Internalizing the environmental and social costs of resource extraction*
- *Redirecting, repurposing and reforming public subsidies for sustainable resource*
- *Channeling private finance towards sustainable resource use*
- *Incorporating resource-related risk into Public and Central Bank mandates*



Making trade an engine of sustainable resource use

- *Trade governance for fairness and sustainable resource use*
- *Enabling local resource value retention in producer countries*



Mainstreaming sustainable consumption options

- *Developing action plans to improve access to sustainable goods and services*
- *Regulating marketing practices leading to over-consumption, and raising awareness*



Creating circular, resource-efficient and low-impact solutions and business models

- *Setting up monitoring systems to identify priorities and develop ambitious circular economy action plans*
- *Developing and reinforcing regulation to boost circular economy business models*
- *Building circular economy capacity and coalitions*

Importance of Market Instruments

- *The role of Ministry of Finance is not only to keep their budgets in balance! Tax Systems, Subsidies, Tax Heavens ...*
- ***And Public Procurement?***
Public procurement is too important instrument not to be used for meeting public needs related to managing the triple planetary crises and driving consumers and producers' behavior and decisions in the desired direction!



Source: OECD

To Conclude

Science is Clear and Change is Unavoidable

Towards the World of GRO 2024



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

Main Blind-Spots preventing us to move faster and deeper

Lack of Holistic System approach

*Public leaders and others lack capacity or knowledge of how to translate **system change visions** into their **concrete policies/investment structures** which ends in conflicting policy logics that hinder real transformation*

Lack of Drivers and Pressures Perspective

*Policy attention does not focus on the roots of the problem and address the drivers and pressures. It **lack focus on natural resource use and management, as well as on market signals** leading consumers and producers' behaviour.*

Lack of Demand Side Focus

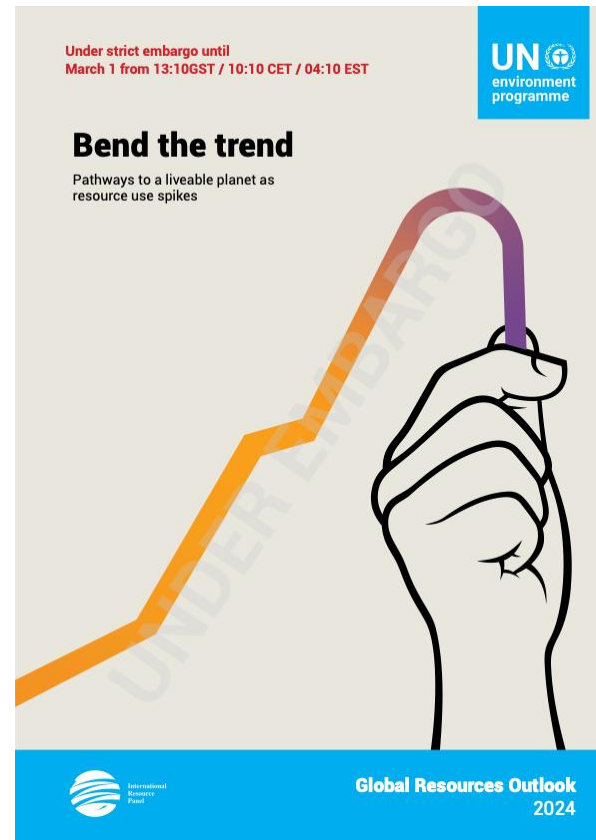
*Policy **attention is mainly given to the supply side** of the economy, to the cleaning of the existing economic system - lacking the attention to the demand side which is **leaving out an important solutions potential and questions of responsibility and equity.***

*If we want to avoid
extinction of elephants
in nature ...*

*we must extinct
elephants in our rooms*



[Source: Hop distance - The elephant in the room ...blogs.bmj.com](http://blogs.bmj.com)



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."

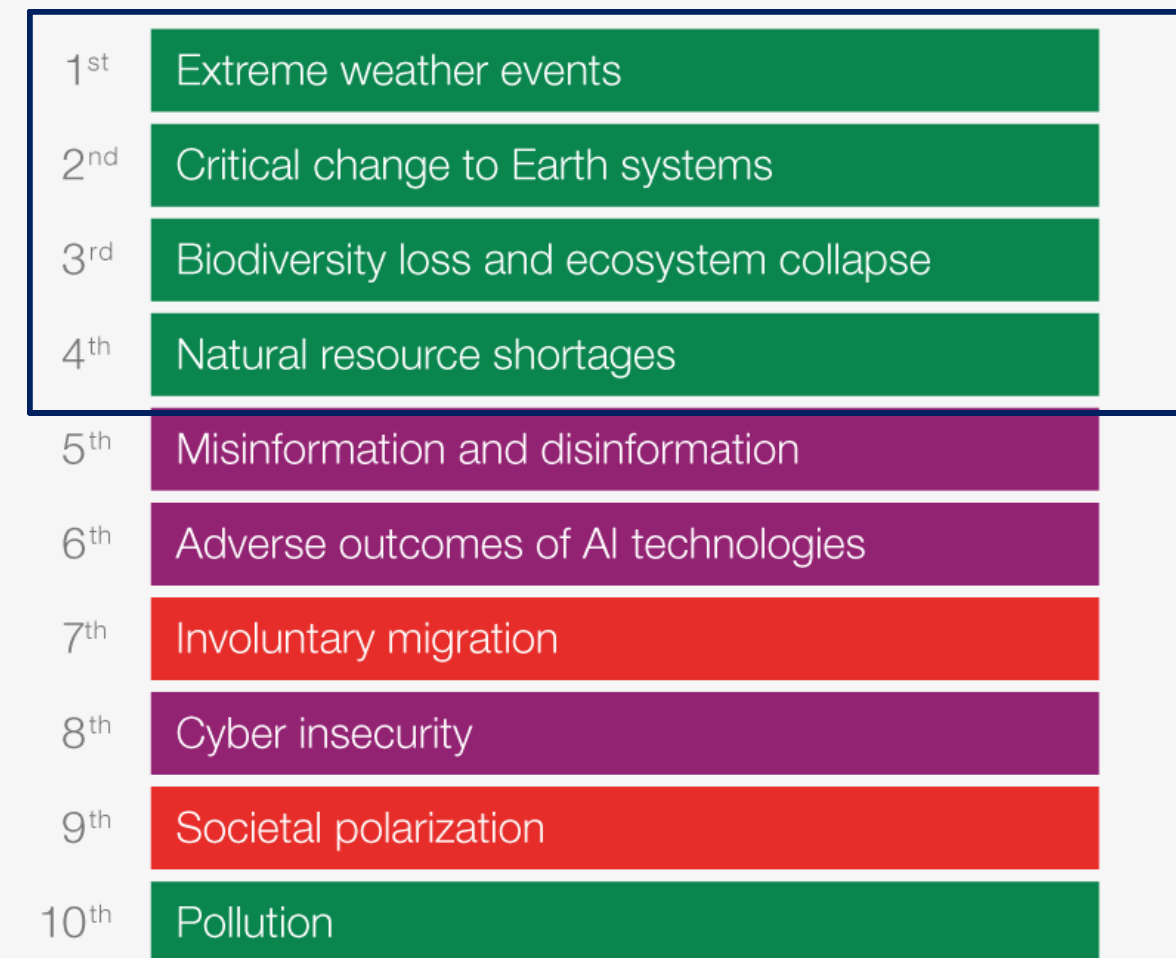
Risk categories

- Economic
- Environmental
- Geopolitical
- Societal
- Technological

2 years



10 years



Source

World Economic Forum Global Risks
Perception Survey 2023-2024.

*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.*

This Transformation is not only about Environmental Sustainability

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

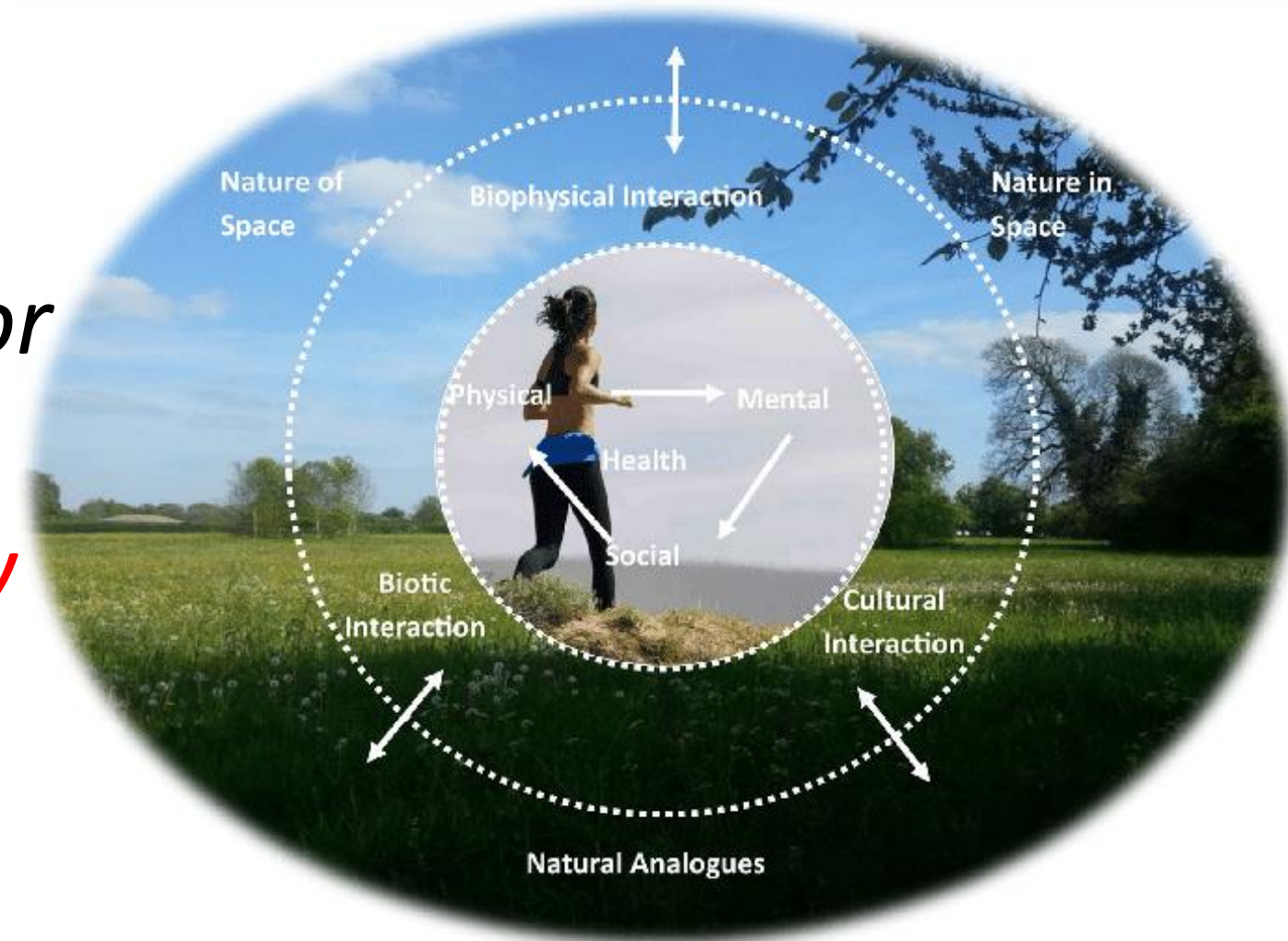
*And the whole history of the colonialisaton of nature, is also central to **fairness and equity**.*



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 ... or there will be no future.





Quote from *Alan Ford*, most famous comics from Ex-Yugoslavia, explaining well where the current rules and the established practice of the economic system are leading us ...

*It is not the problem to drive without the breaks ...
The problem is to stop.*



THANK YOU

for helping us delivering the future we want!

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