

” From an Extractive to a Regenerative Economy” – (Resources then, now and in the future)

Comments by Anders Wijkman, member of the International
Resource Panel, honorary president Club of Rome, chair
Viable Cities at Stiftungslunch in Schaan, 13 November 2025

TODAY: THE POLYCRISIS

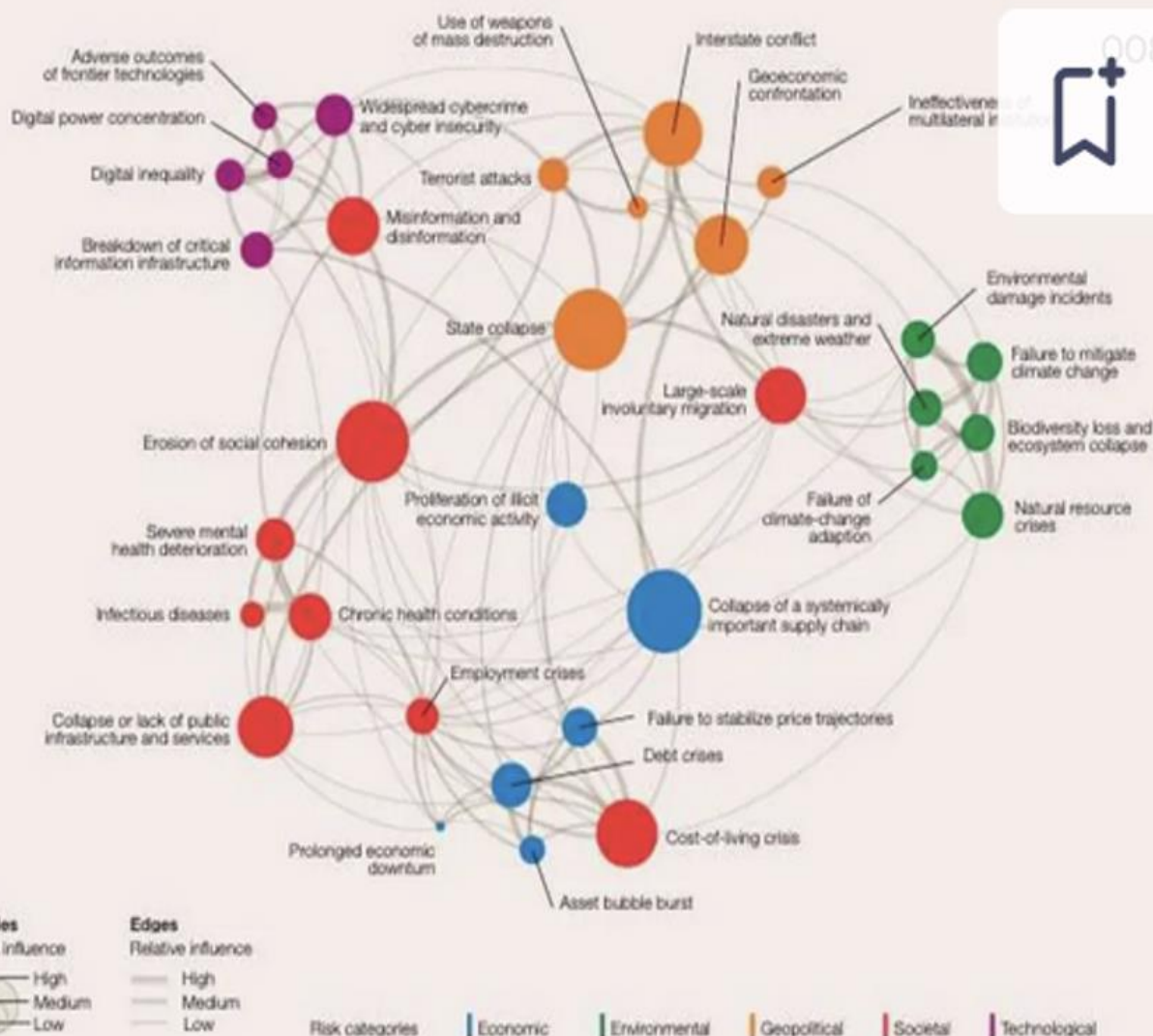
FUTURE PERFECT

Why so much is going wrong at the same time

Lots of things are going wrong. Does that make it a polycrisis?

By Thomas Homer-Dixon | Oct 18, 2023, 7:30am EDT

"All the goodness and the heroisms will rise up again, then be cut down again and rise up. It isn't that the evil thing wins — it never will — but that it doesn't die."

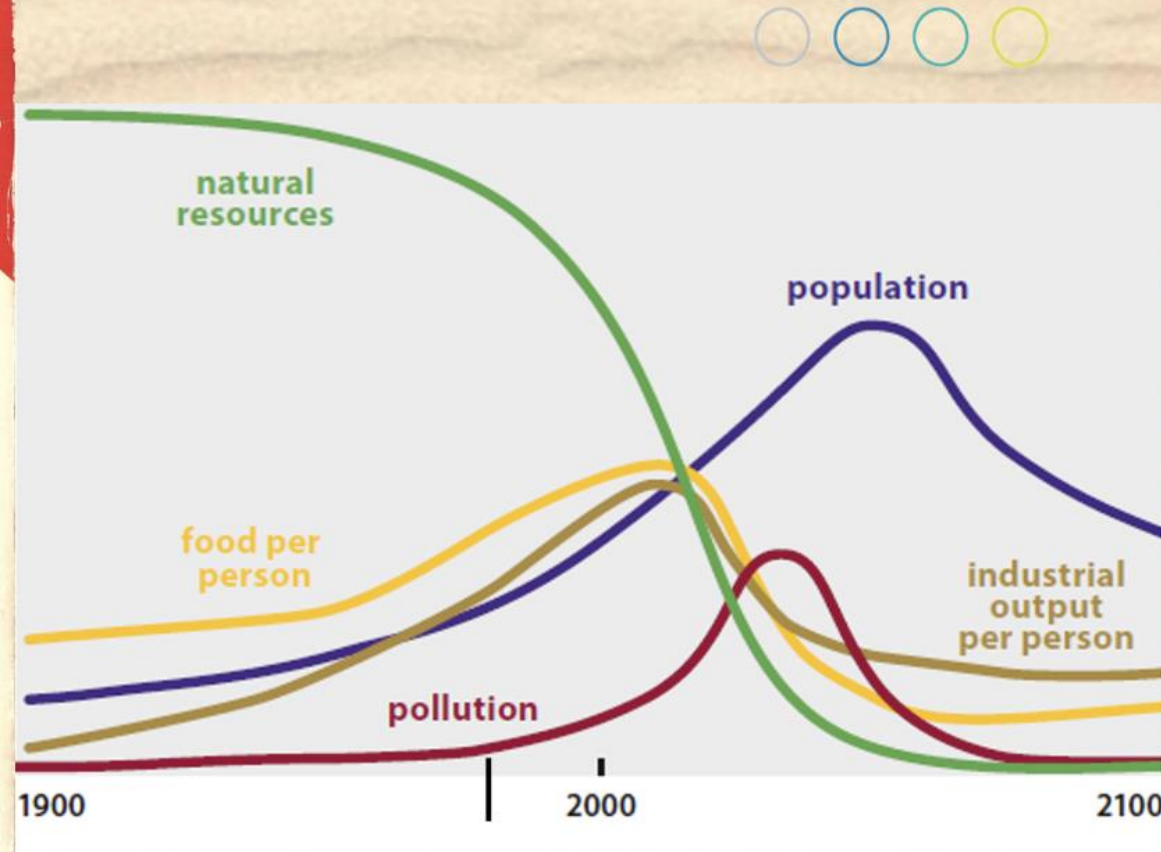
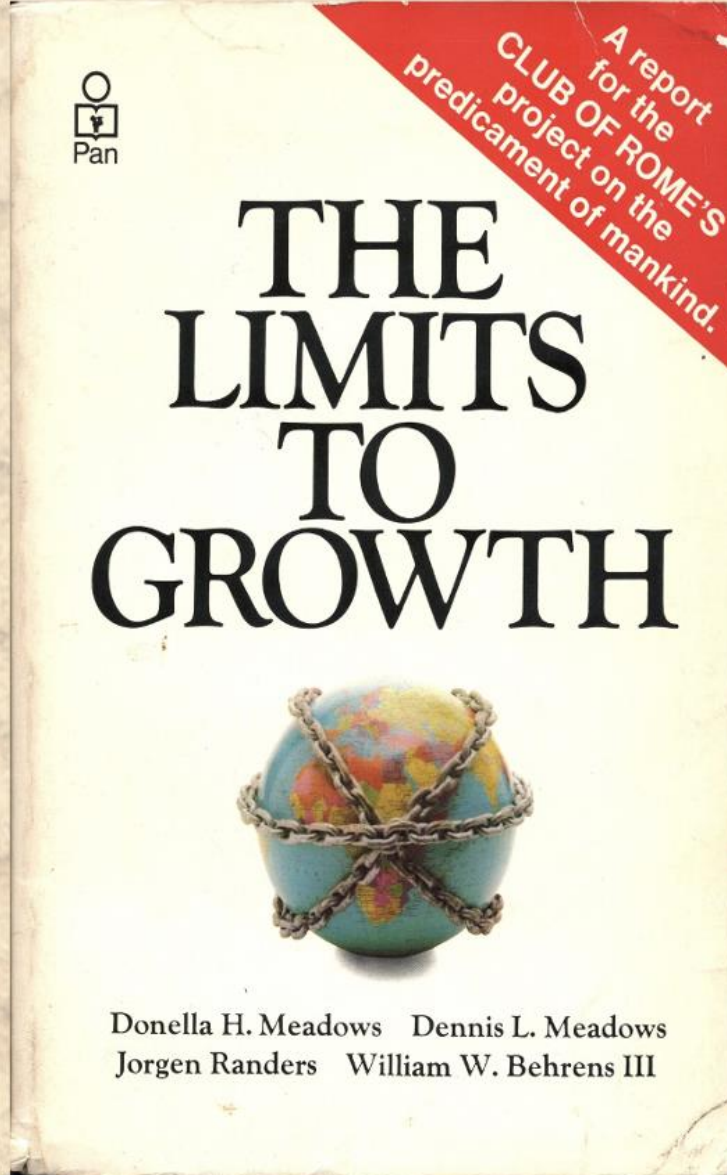


Source

World Economic Forum, Global Risks Perception Survey 2022-2023.

"...a situation where crises in multiple global systems become intertwined."

Recalling The Limits to Growth

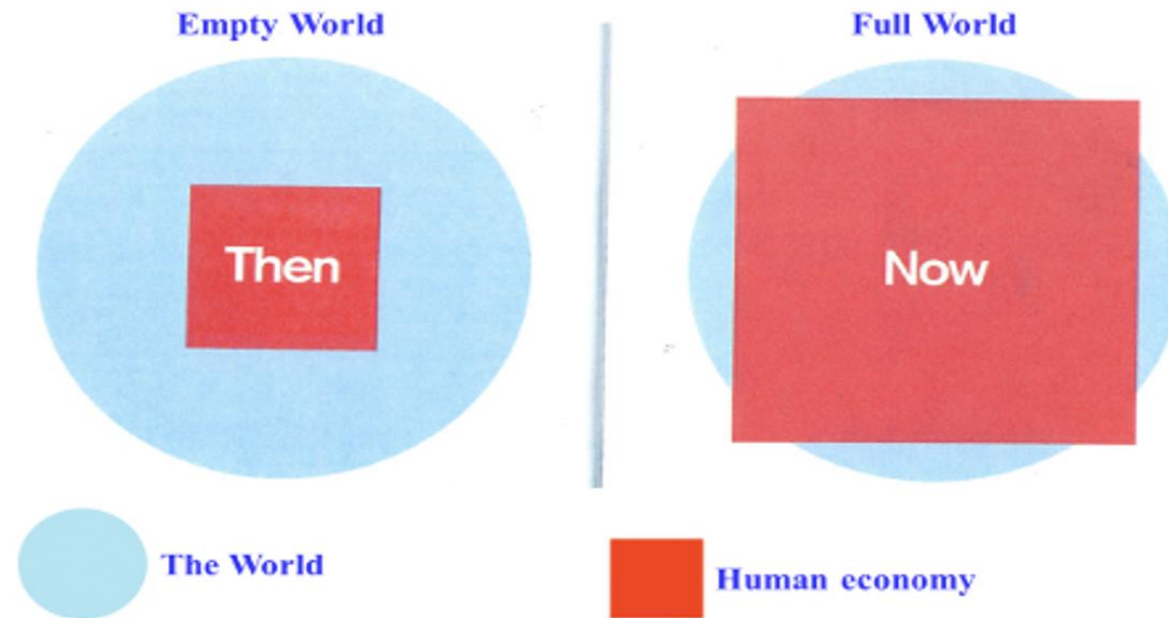


1972

The book predicted collapse.
The value issue was avoiding collapse.

WATERSHED

From “Empty” World to “Full” World



Source: Club of Rome: Simplified after Herman Daly

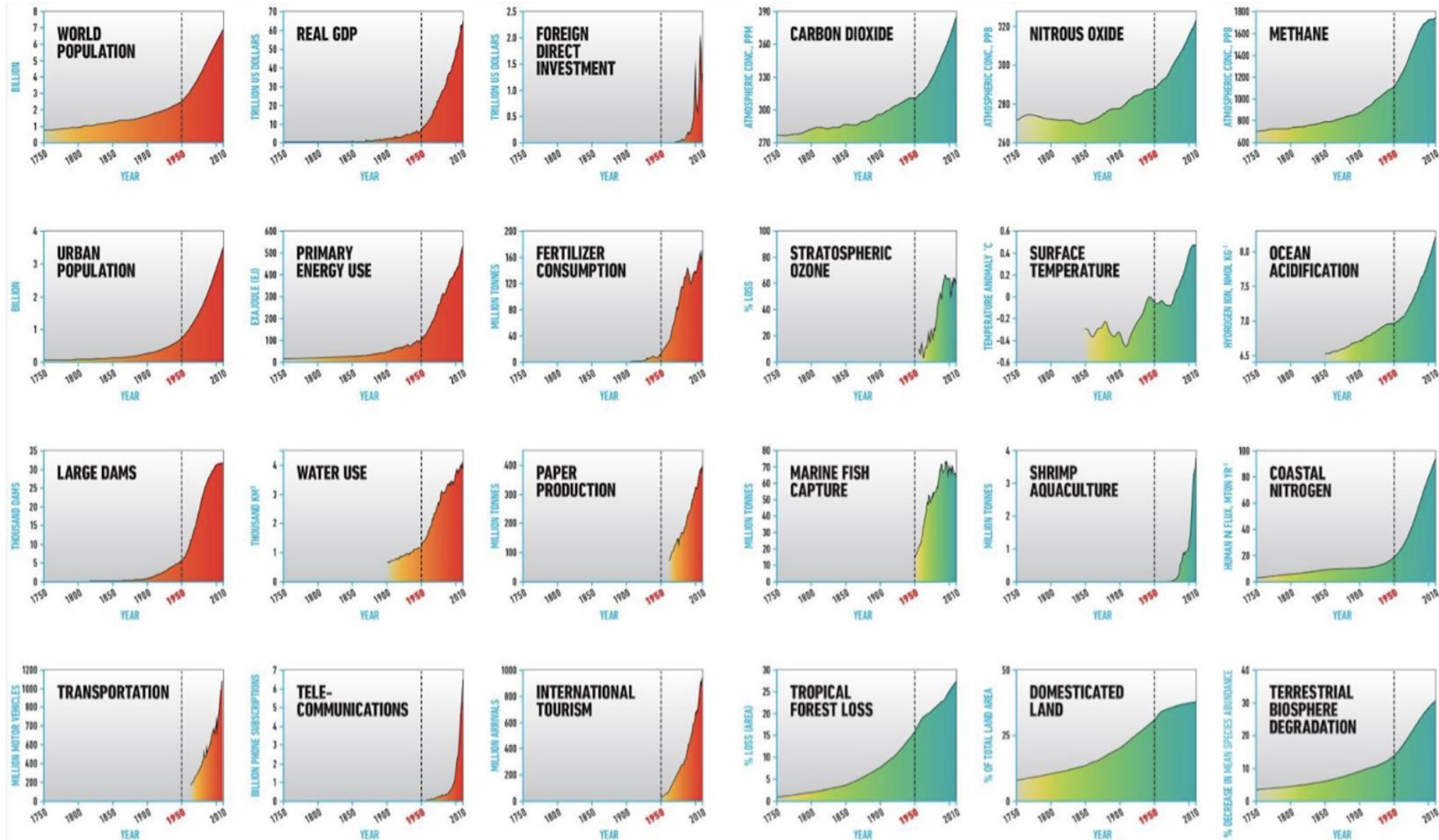
*Labour and Infrastructure limiting
factors of human wellbeing*



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



The Great Acceleration



Global Resources Outlook 2024

Under strict embargo until
March 1 from 12:10 GST / 10:10 CET / 04:10 EST

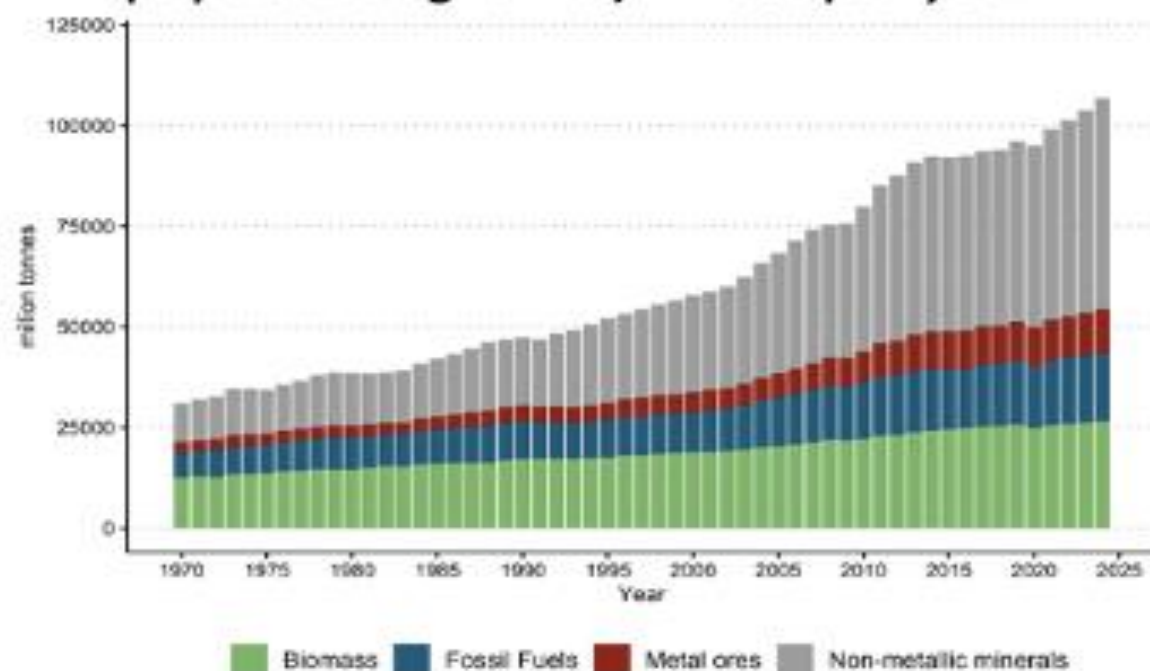
Bend the trend

Pathways to a liveable planet as
resource use spikes



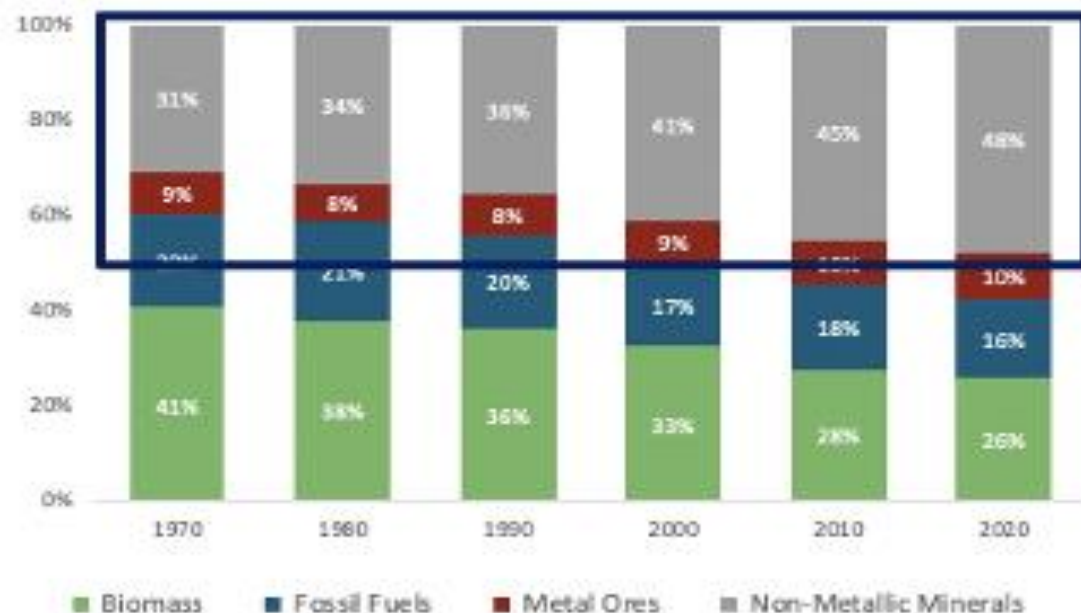
Trends: Global Material Use and Share in 1970-2023

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

Increasing resource use is the main driver for climate change, pollution and loss of biodiversity

Extraction and processing of material resources accounts for:

>90% of impacts on land-use related **biodiversity loss** and **water stress**

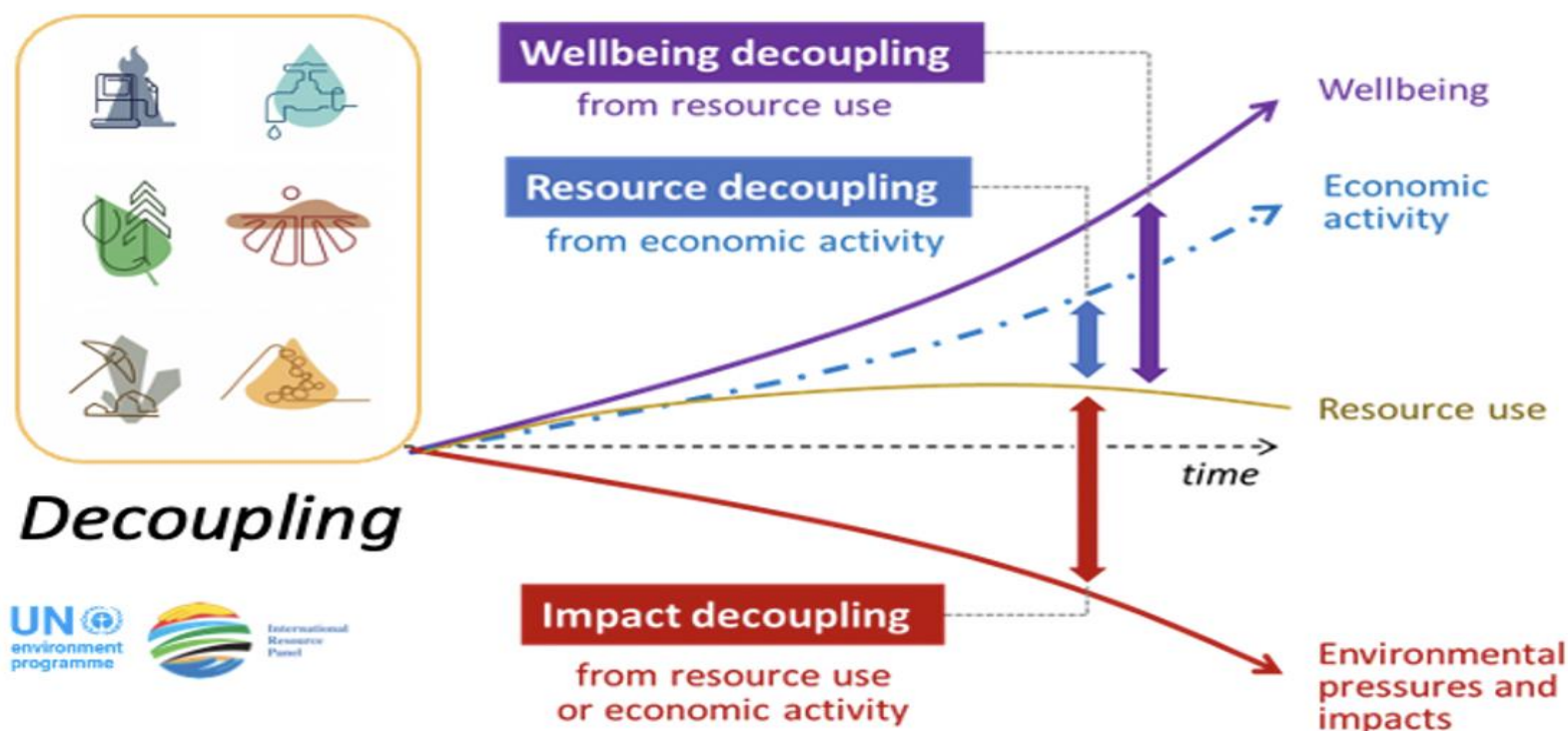
>55% of **greenhouse gas emissions**

up to 40% of **air pollution** that might cause health problems



Photo: Marianne Gjerv

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



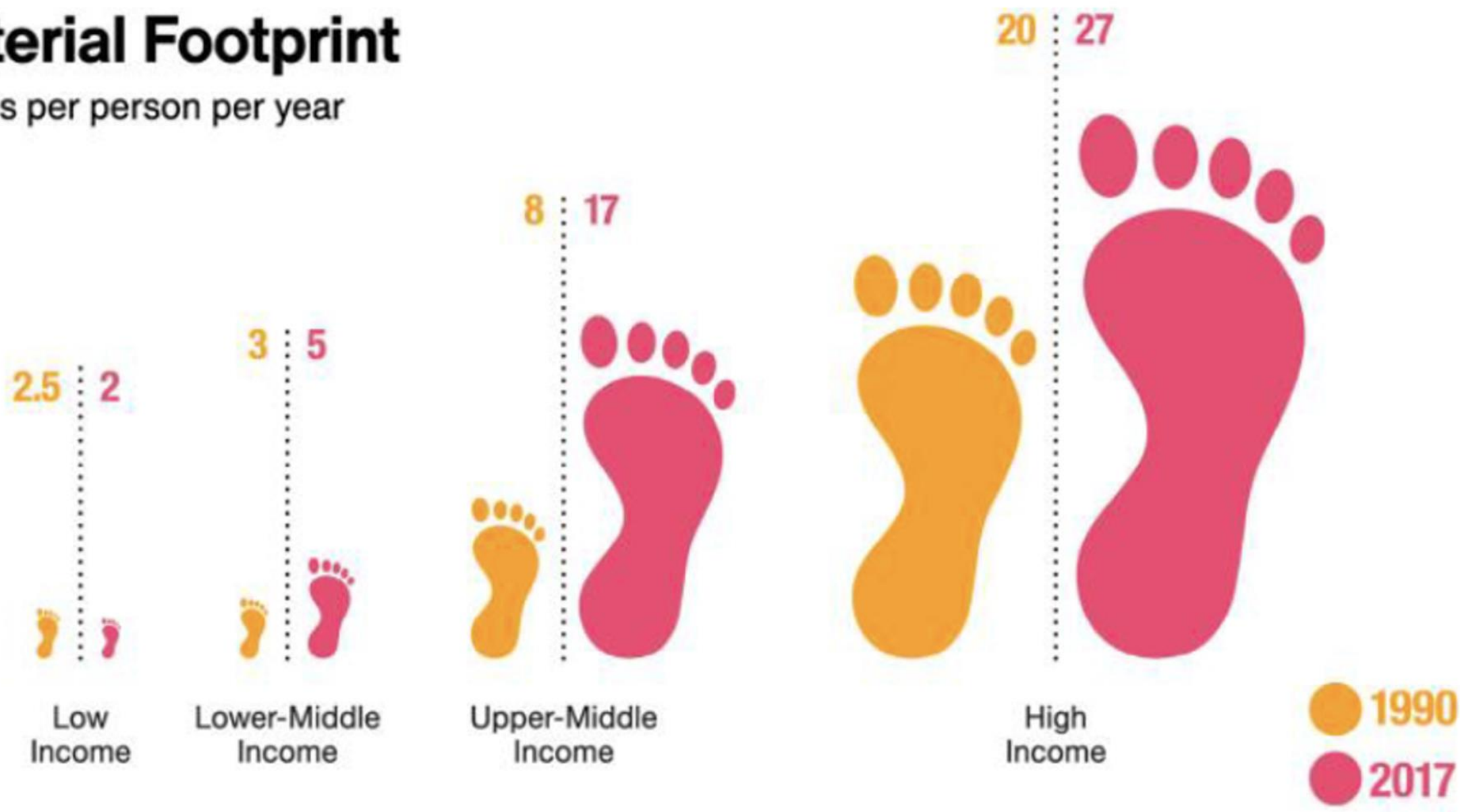
The Challenges ...



On average, Europe uses materials **only once.**

Material Footprint

Tonnes per person per year



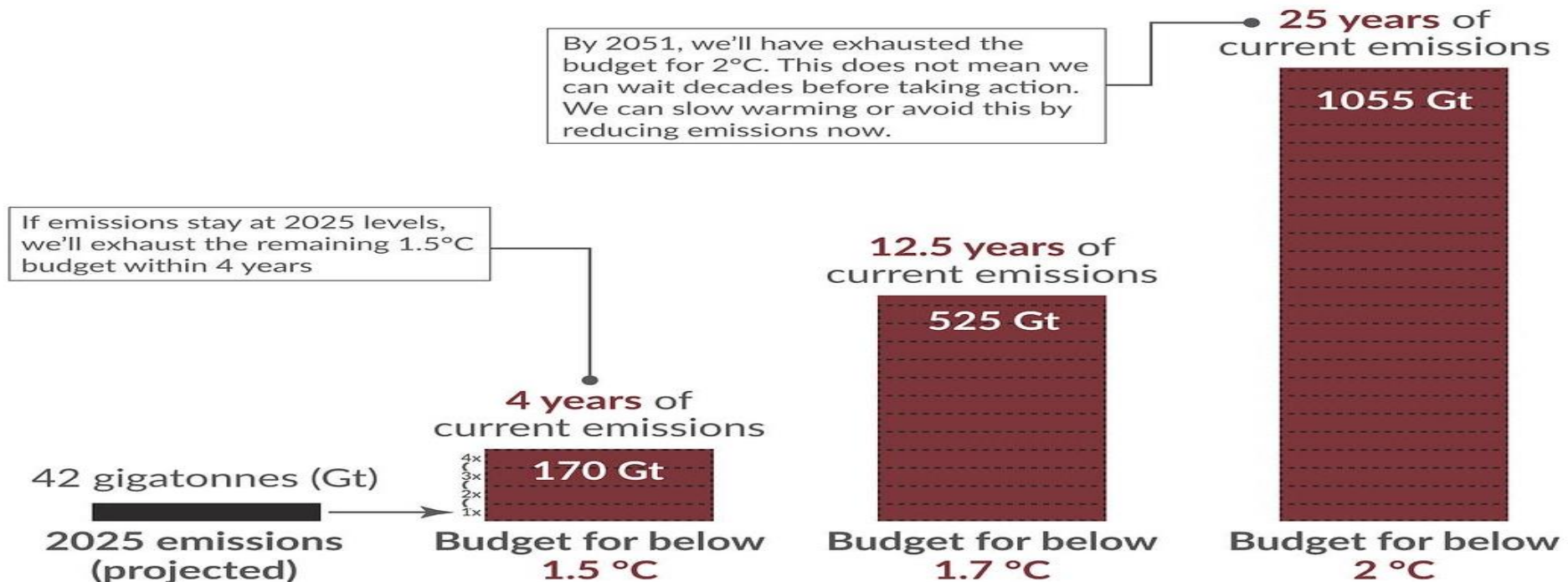
*Economy championed by industrialised nations is
wasteful and unjust.*

*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
within the Planetary Boundaries.*

The current logic is both ethically and ecologically unsustainable.

How much more CO₂ can we emit while staying below 1.5 °C, 1.7 °C and 2 °C?

Estimates of the amount of carbon dioxide (CO₂) the world can emit (from the start of 2026) to have a **50% likelihood** of staying below each temperature level. This increase is relative to pre-industrial temperatures.

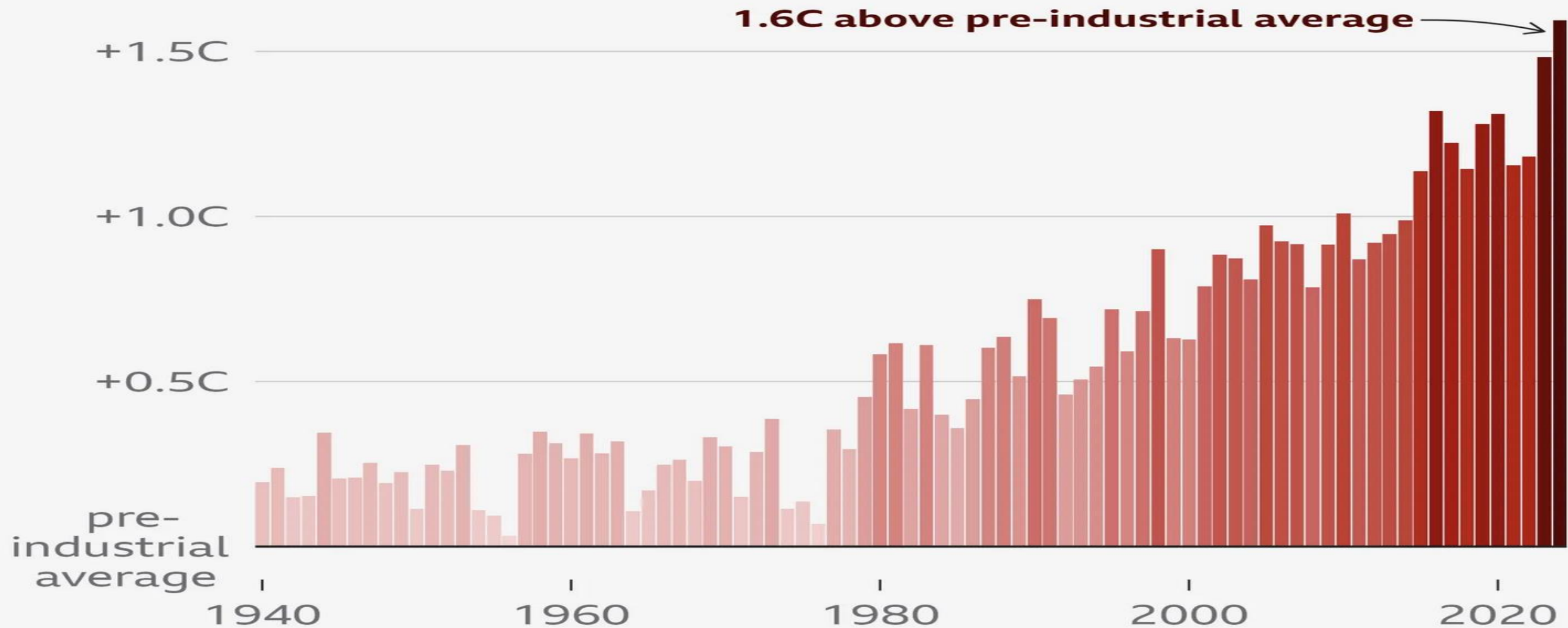


Note: These estimates come with some uncertainty, and depend on factors such as changes in emissions of non-CO₂ greenhouse gases, like methane and nitrous oxide.

Data source: IPCC AR6 WG1; Forster et al. (2025); Global Carbon Project (2025) CC BY

2024 was the first year above 1.5C

Global average temperature by year, compared with the pre-industrial average (1850-1900)



Source: ERA5, C3S/ECMWF. Darker reds reflect greater warming



Reuters

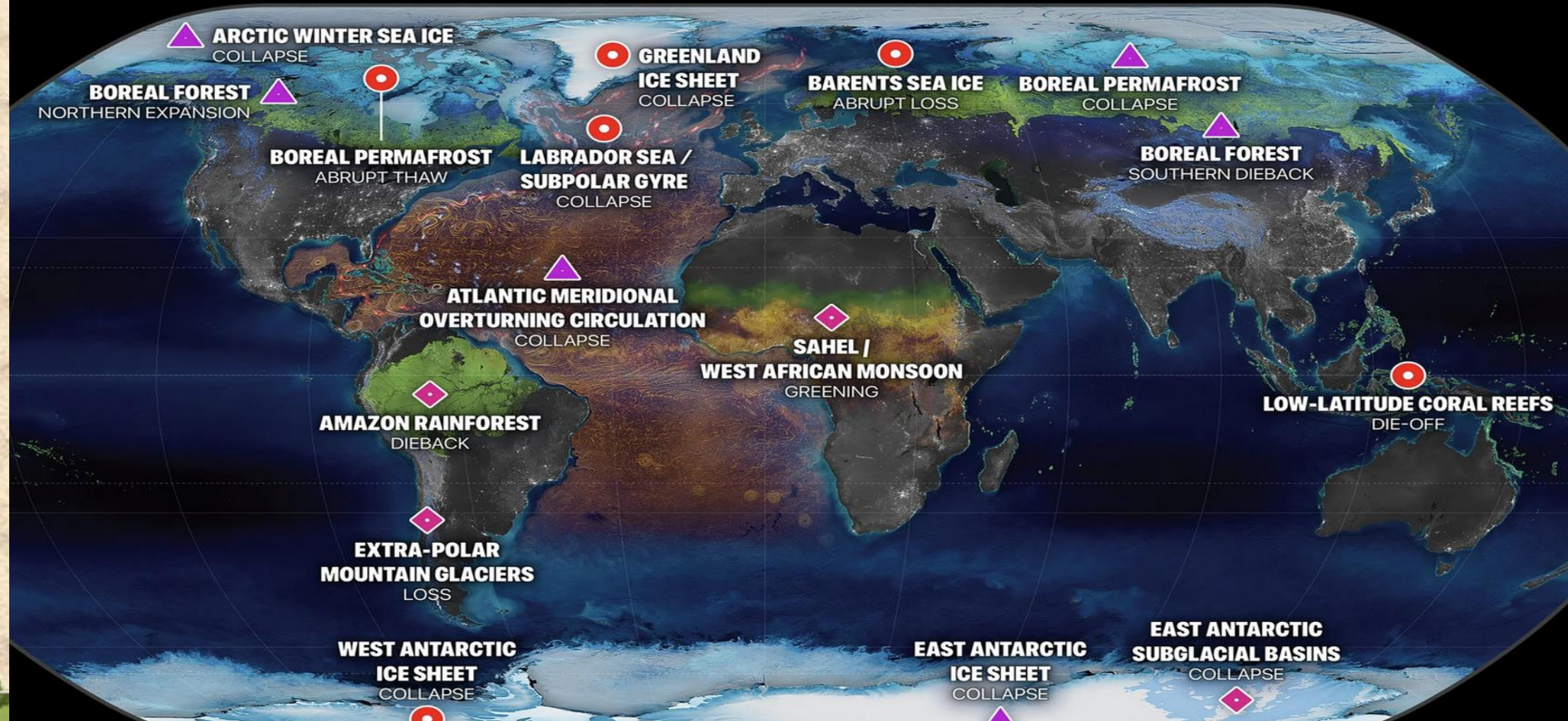
The LA fires killed 30 people and caused about 200,000 people to be evacuated

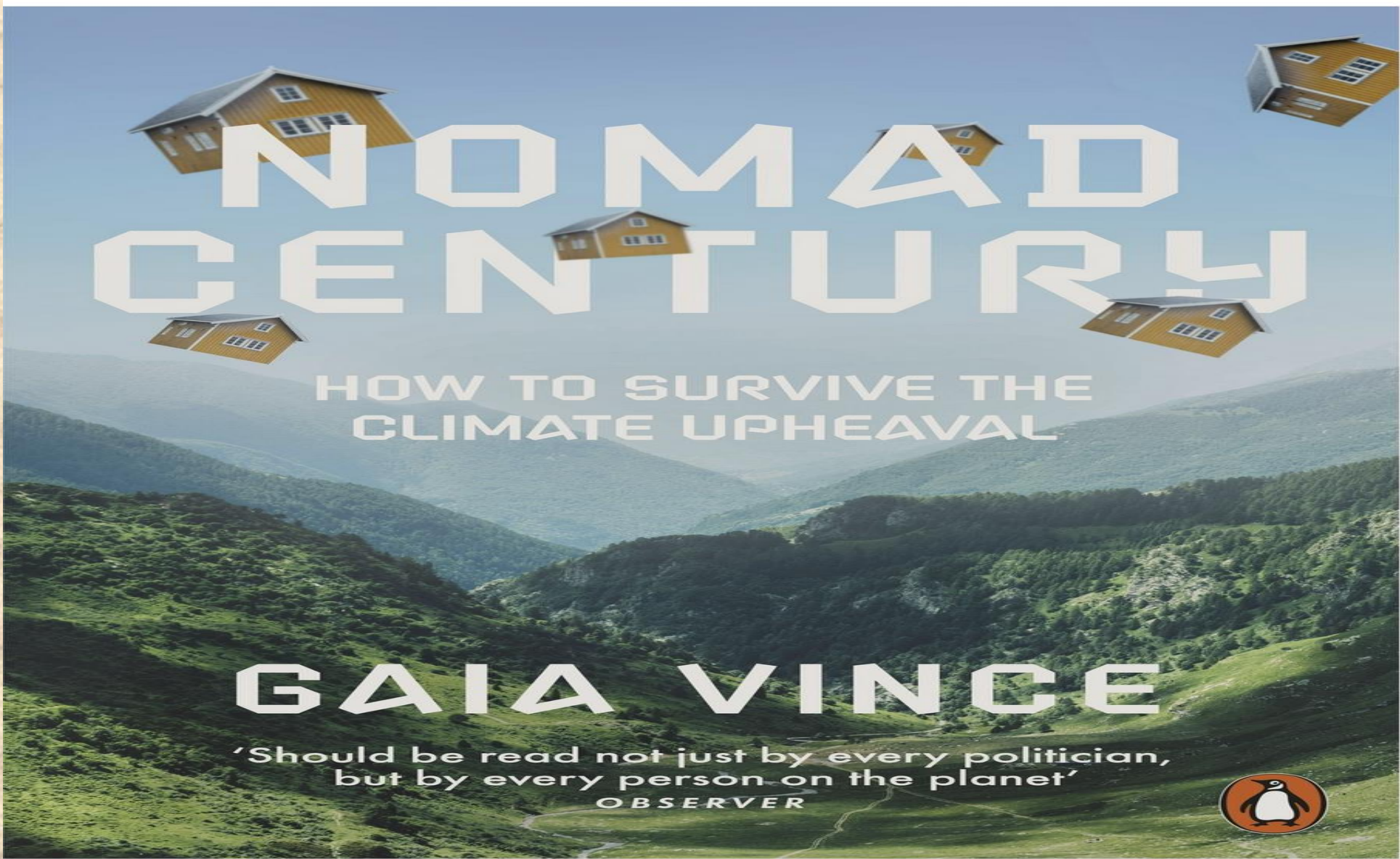
Trees and land absorbed almost no CO₂ last year. Is nature's carbon sink failing?

The sudden collapse of carbon sinks was not factored into climate models – and could rapidly accelerate global heating



CLIMATE TIPPING ELEMENTS





NOMAD CENTURY

HOW TO SURVIVE THE
CLIMATE UPHEAVAL

GAIA VINCE

'Should be read not just by every politician,
but by every person on the planet'

OBSERVER



Human economy highly dependent on Nature

- The breakdown of natural systems is – according to the World Economic Forum Risk Monitor – one of the greatest threats to our economy
- An estimated 50% of global GDP is dependent on nature, amounting to 58 trillion US
- To the early economists – the physiocrats – the value of land was inherent, i.e. not the result of labour or capital
- But modern economists have all lost it; nature – or land – is not even part of the prevailing economic model

IPBES confirms serious Ecosystem decline and Biodiversity loss (2024 Assessment Report)

- All major biodiversity indicators are in decline
- Agriculture and livestock, fisheries, forestry, infrastructure and urban development, mining and fossil fuel sectors contribute heavily
- Public subsidies – globally - to sectors driving nature decline range from 4-6 trillion US per year (OECD) - increasing significantly in recent years



ARTICLE

Nature's decline could bankrupt the global economy

The natural world underpins half of the global economy—its demise presents a potentially devastating risk to the global economy.

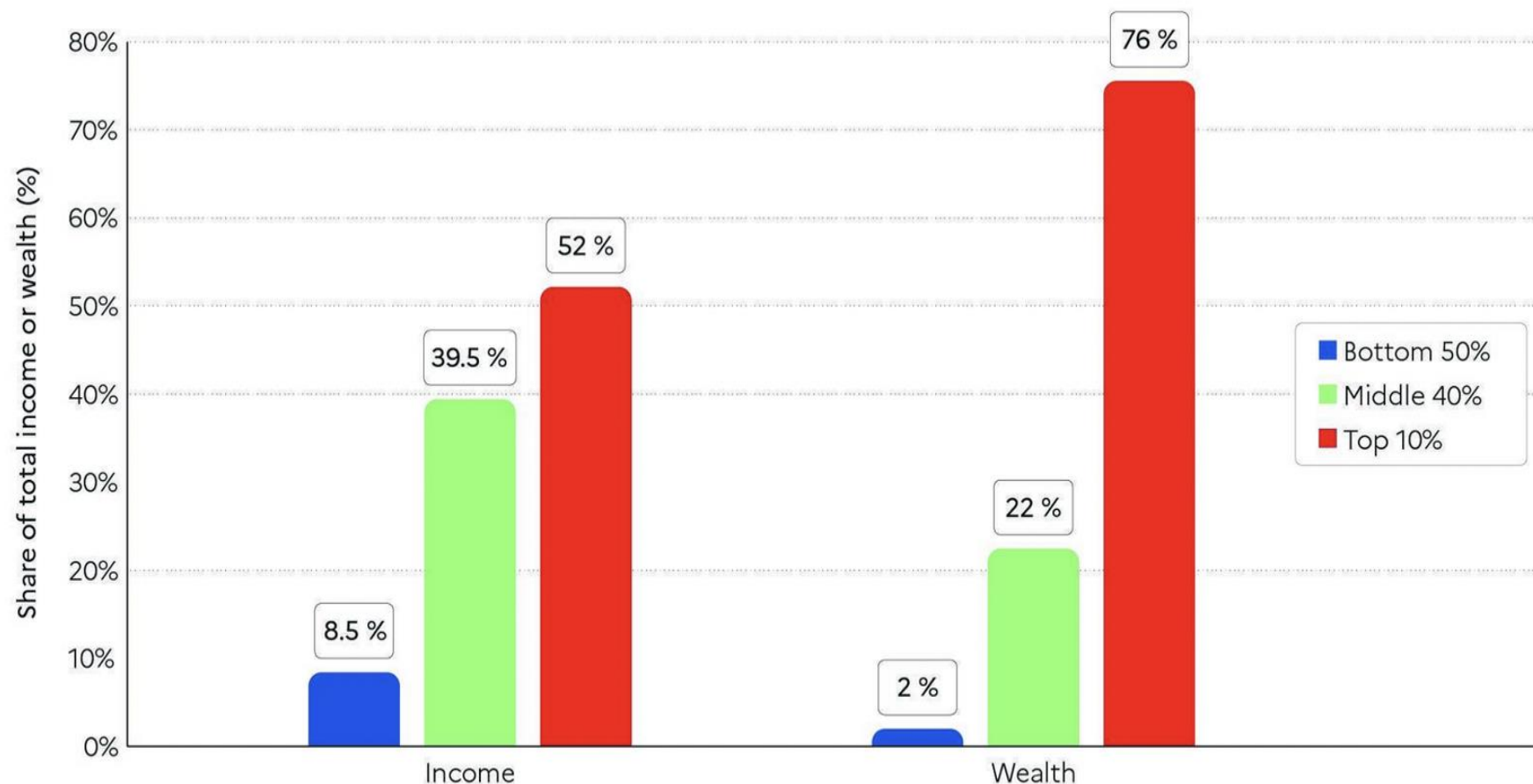
Current realities

Almost half of the world lives in poverty

Up to 600 million could be living in extreme poverty by 2030 if economic development goes back to pre-pandemic "business as usual".

Rich countries exert strong control over the finances of low-income countries.



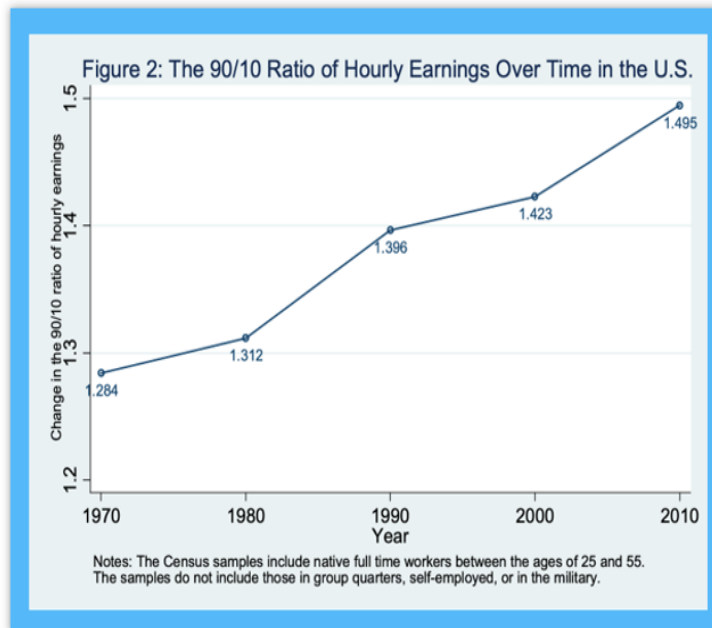
Figure 1 Global income and wealth inequality, 2021

Interpretation: The global bottom 50% captures 8.5% of total income measured at Purchasing Power Parity (PPP). The global bottom 50% owns 2% of wealth (at Purchasing Power Parity). The global top 10% owns 76% of total Household wealth and captures 52% of total income in 2021. Note that top wealth holders are not necessarily top income holders. Incomes are measured after the operation of pension and unemployment systems and before taxes and transfers. **Sources and series:** wir2022.wid.world/methodology.

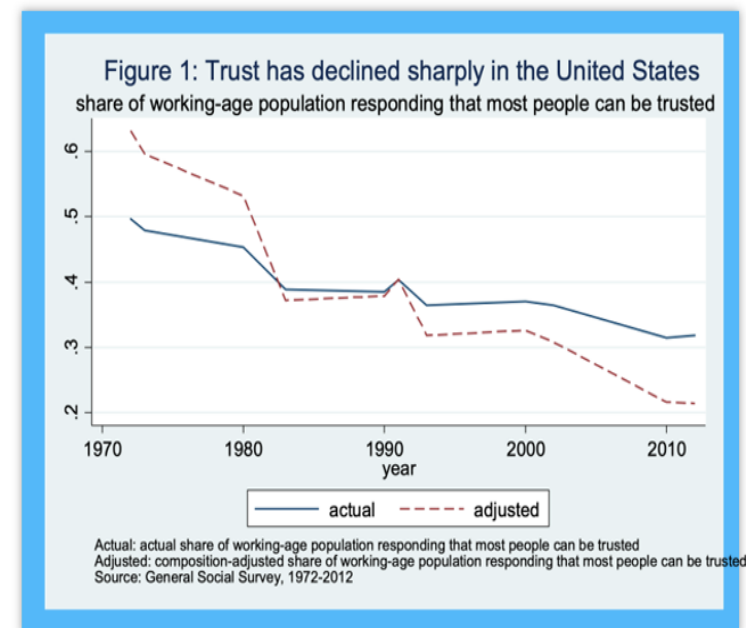


INEQUALITY REDUCES TRUST

Wage inequality (based on 90/10 ratio)
in the US has **increased 14%**
between 1970 - 2010



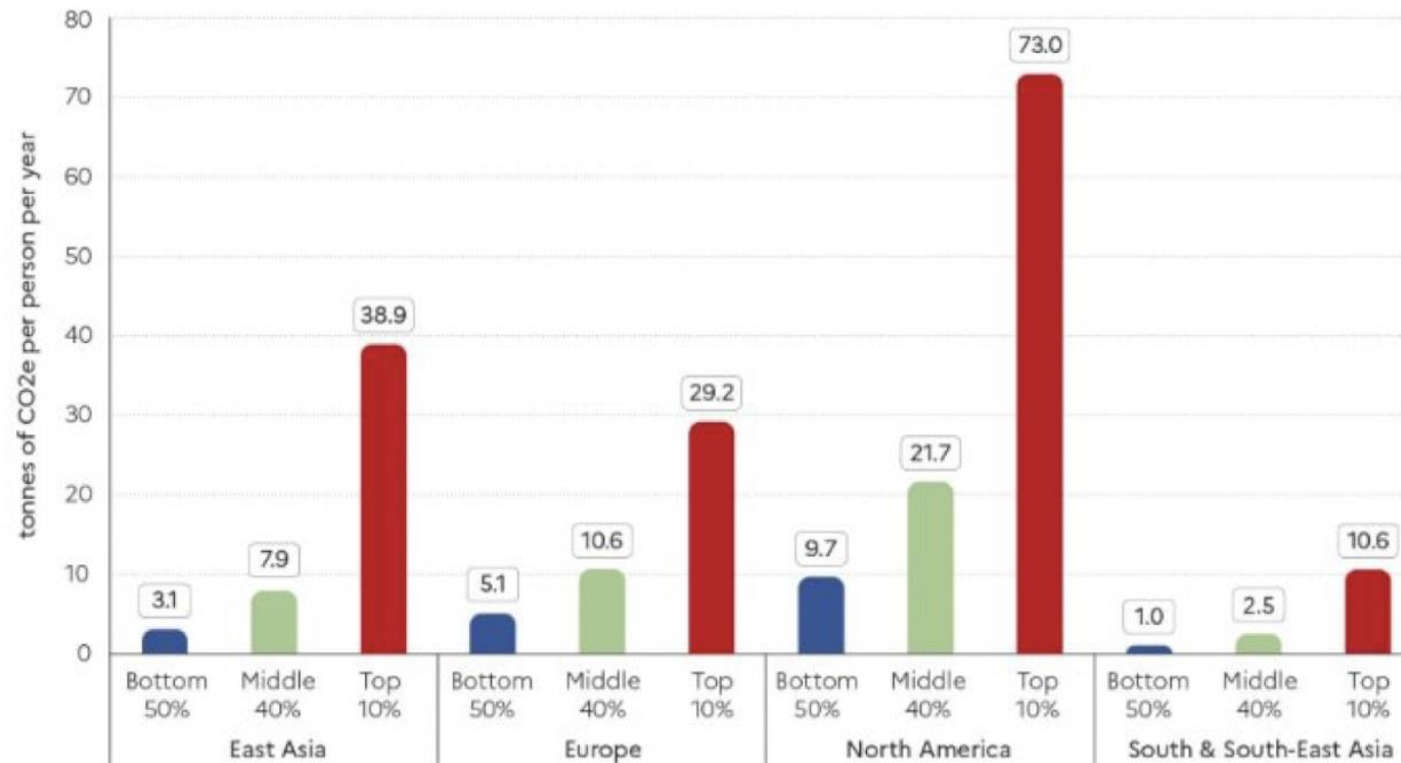
At the same time, surveys of US
citizens show **decreasing levels of
trust** in people



Sources: IMF - Gould, Eric D, and Alexander Hijzen. Growing Apart, Losing Trust? The Impact of Inequality on Social Capital. International Monetary Fund, 2016.

Carbon Inequality

Figure 15 Per capita emissions across the world, 2019



Interpretation: Personal carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based on the systematic combination of tax data, household surveys and input-output tables. Emissions split equally within households. **Sources and series:** [wir2022.wid.world/methodology](https://www.wir2022.wid.world/methodology) and Chancel (2021).

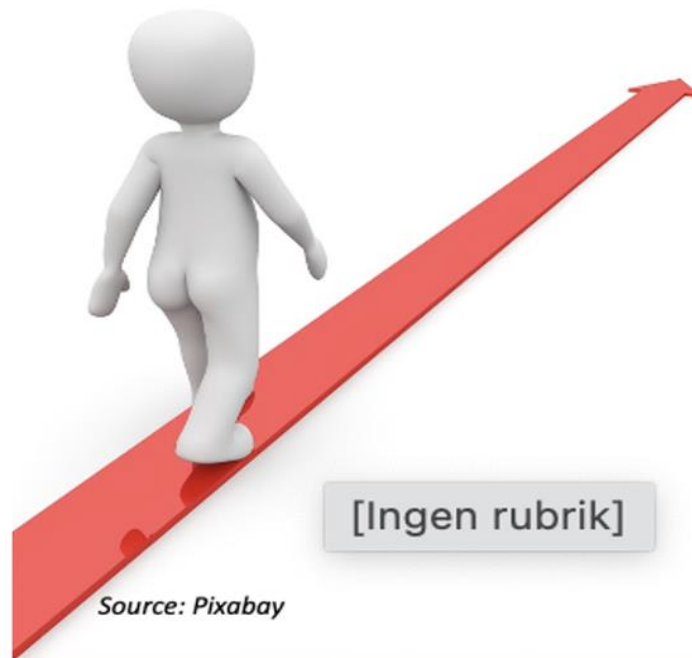


Another major challenge, no doubt, is Exponential Technologies.

Some experts promise endless productivity gains and a life characterized by "Abundance".

Others warn for i) the Surveillance State, ii) Superintelligence, i.e. existential risk, iii) a few Tech Companies will dominate business and the economy, iv) a jobless future

Many leading experts call for Regulation....



Source: Pixabay

[Ingen rubrik]

*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***



Source: Dentistry.co.uk

High-income countries have benefitted most, and have driven the planetary crisis, while emerging and developing economies hold least responsibility, and are facing the worst impacts. The World Inequality Lab in recently published 2023 Climate Inequality Report showed that the top 10% of global emitters are responsible for 50% of global carbon emissions. This is not just a country-level story: the *highest consumers everywhere are responsible*.

In high-income countries *absolute decoupling* should be the aim, whereas, in low and some middle-income countries, where additional resource use is still needed to meet people's basic wellbeing needs, we should aim at *relative decoupling*.

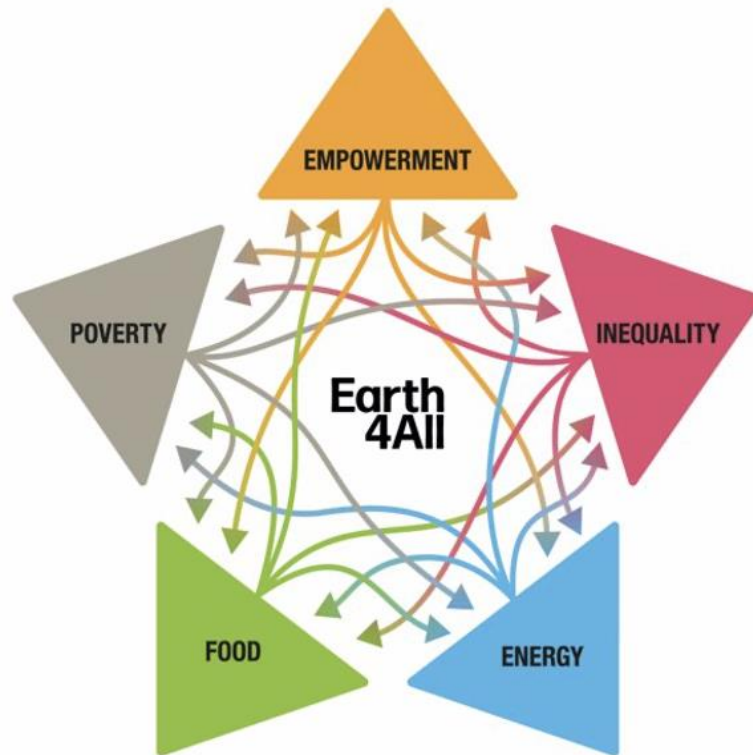
The European Green Deal

"What to do?"

- Earth4All – build on and disseminate
 - Rethink Economics
- From an Extractive to a Regenerative Economy
- Rethink and strengthen Global Governance –
Cooperation more important than Competition
- Independent analysis and communication
indispensable



Five Global Turnarounds Needed



- ▶ Transform and accelerate human development **IN LOW-INCOME COUNTRIES** by reforming the international financial and trade system.
- ▶ Transform **WEALTH DISTRIBUTION** by ensuring the wealthiest 10% have no more than 40% of national income.
- ▶ Transform **ENERGY SYSTEMS** to halve emissions of greenhouse gases every decade.
- ▶ Transform agriculture. The **FOOD SYSTEM** must become regenerative and nature positive.
- ▶ Transform gender power imbalances. **EMPOWER WOMEN** and invest in education for all.

Rethink Economics:

Conventional Growth can not go on indefinitely....

- From short-termism to long-termism
- Natural Capital must be part of production model
- Reform Company Law
- Rein in Financial sector
- Wellbeing indicators replacing GDP
- From linear to circular production
- Policy framework to guide AI technology for the benefit of Mankind

A wellbeing economy...

- recognises that the economy is embedded in society and the rest of nature.
- must be understood and managed as an integral, interdependent system of social relations that pursues balance and prosperity, rather than the maximisation of production and consumption.
- values both social and natural dimensions as fundamental components of national wealth and as critical factors in determining wellbeing

6-Apr-24



A follow-up Report on Materials
and Material Consumption is in
the making – plan is to be
launched mid-2026

OUTLINES OVERVIEW

Author	Title/ Content
Saleem	Extraction to Stewardship: A Global Minerals Trust for Just and Sustainable Resource Governance
Fritz	The Role of Materials in Geopolitical Tensions/Conflict
Ken	Social Dividend with emphasis on challenge of AI/automation/robots (social capital)
Peter and Monika	Role of Materials in Competitiveness
John	Green Chemistry and the Future of Materials
<u>Janez</u>	Material Targets
Lewis /Lars	Optimising Provisioning Systems: how to achieve wellbeing within planetary boundaries
Nafeez	The technology shift (from fossil-based economy to renewables, AI and material demand)
Anders Sandrine	Moving beyond conventional neo-classical Economics Legacy of Earth4All: Materials Gap

Main question often-overlooked to be addressed

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



<https://edistaffing.com>

Recommends resource-efficiency and circular economy

The built environment and mobility are the leading drivers of rising demand, followed by food and energy

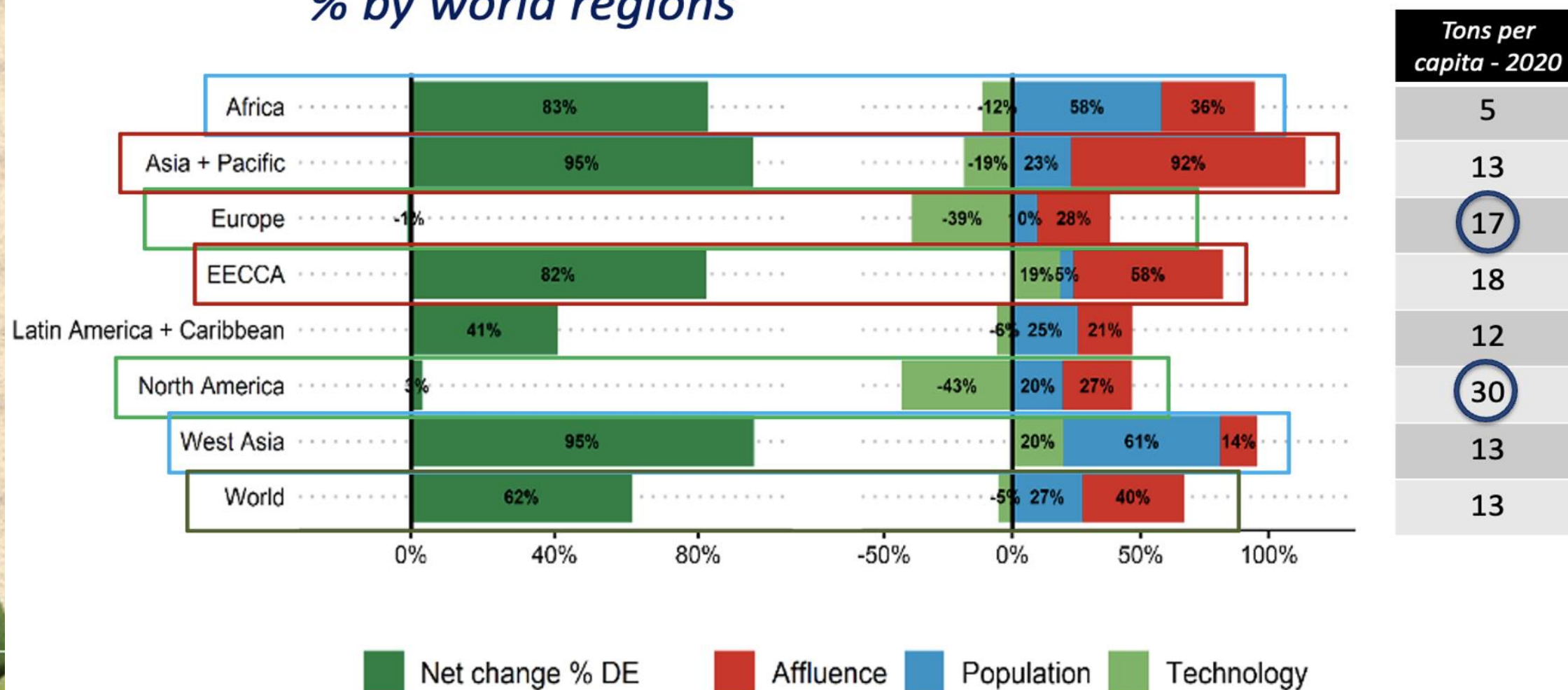
Combined, these sectors account for about 90% of global material demand



Photo: Marianne Gjerv

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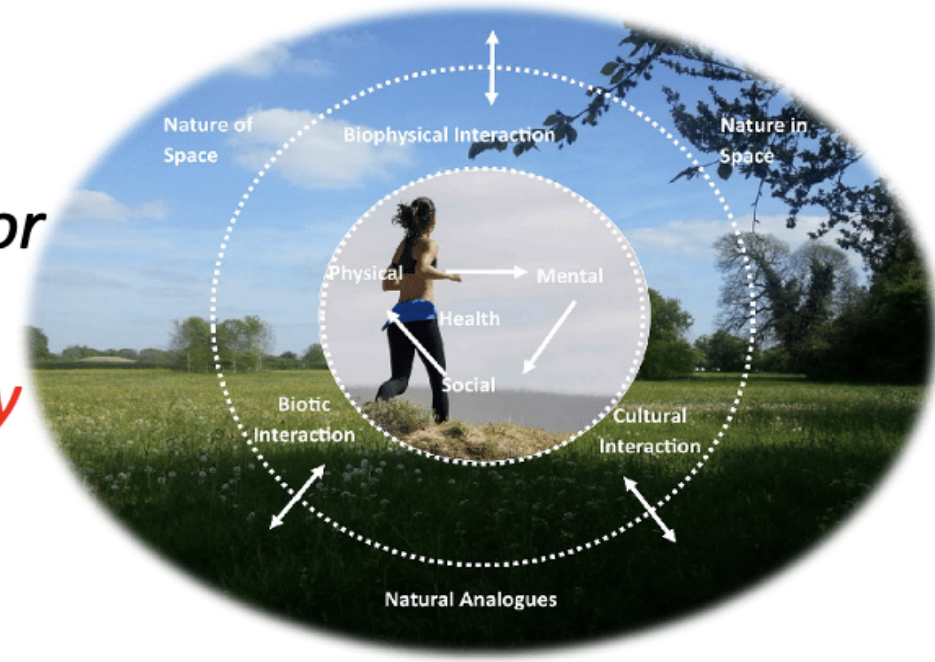
Trends: Drivers of Material Footprint 2000-2022, % by world regions



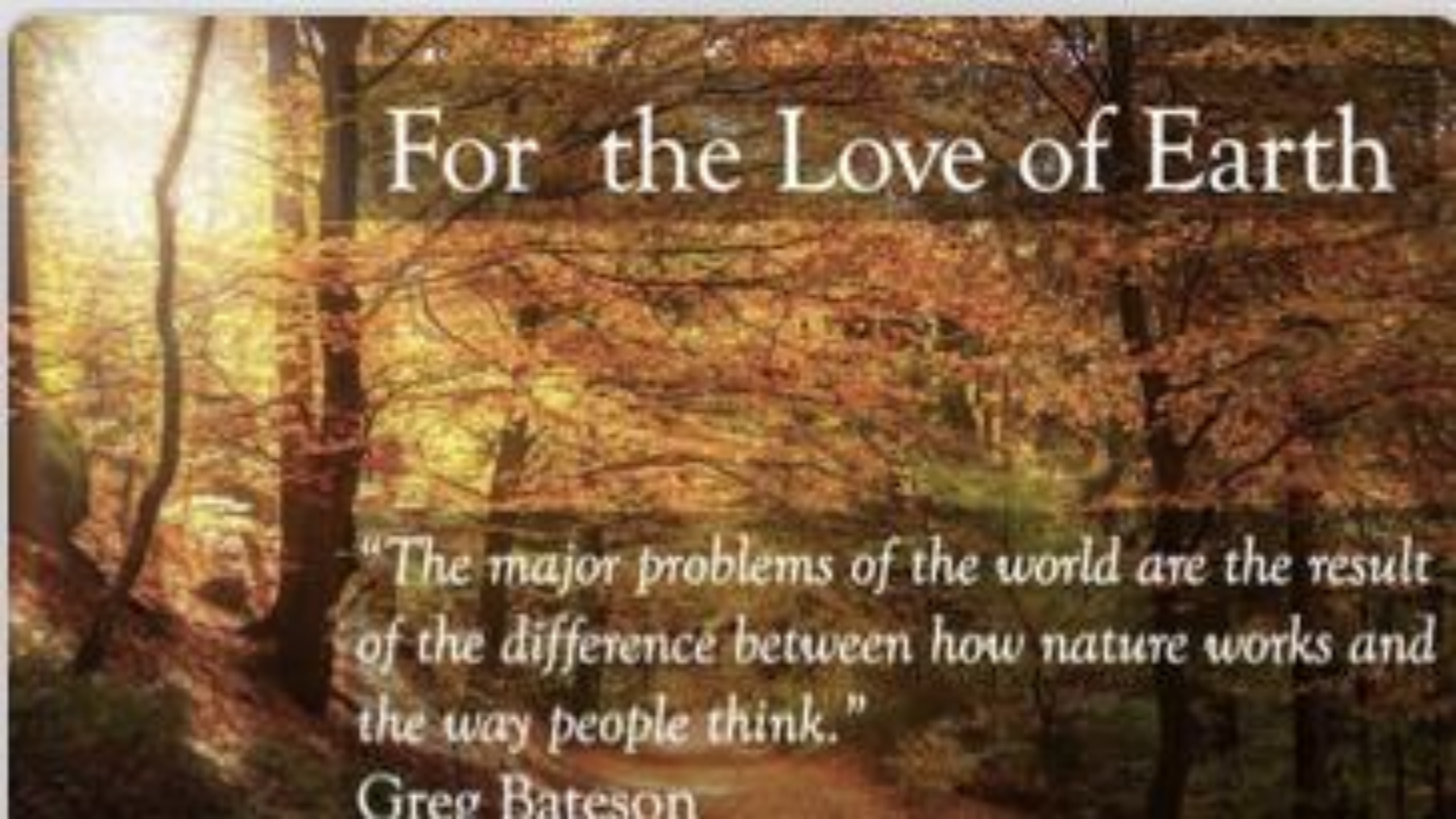
Changing our Relationship with (the rest of) Nature, is ultimately an Economic, Equity and Security Imperative to strengthen collective Resilience

*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.



Given all the challenges – and
the need for analysis, research
and dissemination – the Club of
Rome is looking for partners



For the Love of Earth

"The major problems of the world are the result of the difference between how nature works and the way people think."

Greg Bateson