

# From Growth to Well Being: Why we Need a Paradigm Shift

GiZ Future Forum 2022, Potsdam, Germany, 13 September 2022



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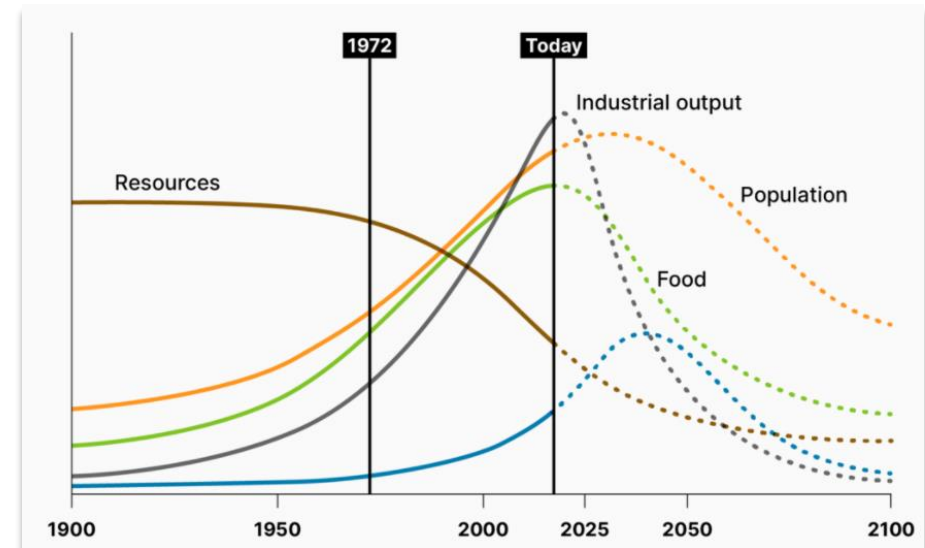
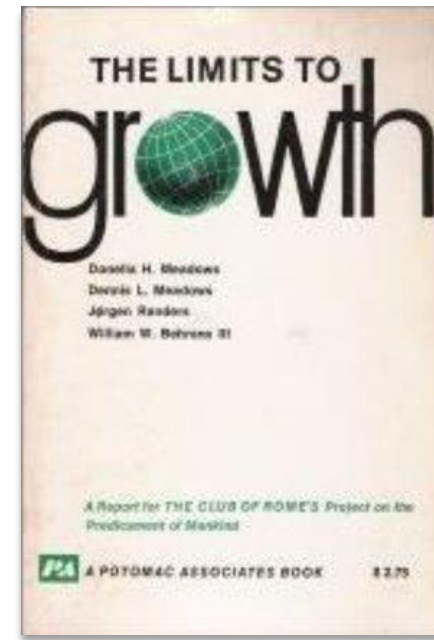
# We have known for 50 years we are risking collapse

“This supreme effort is a challenge for our generation. It cannot be passed on to the next. The effort must be resolutely undertaken without delay, and significant redirection must be achieved during this decade.”

## [The Limits To Growth, 1972](#)

“Folks who do systems analysis have a great belief in “leverage points.” These are places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything.”

## [Leverage Points: Places to Intervene in a System](#)



# 2020-2022: EU wake-up call for “the future we want”

## WE ARE REACHING TIPPING POINTS:

We are leaving the “safe operating space” across multiple earth systems: multiple crises at the same time: 3 C’s  
Climate, COVID, Conflict

## AN ECONOMIC RESET:

Economies in lockdown - governments releasing the biggest stimulus packages in recent memory and are forced to address value chain disruption

## PARADIGM CHANGE IN EUROPEAN POLITICS:

The European Green Deal as new strategic objective, supported by a new cohort of politicians

## MULTILATERALISM ON THE TEST BENCH:

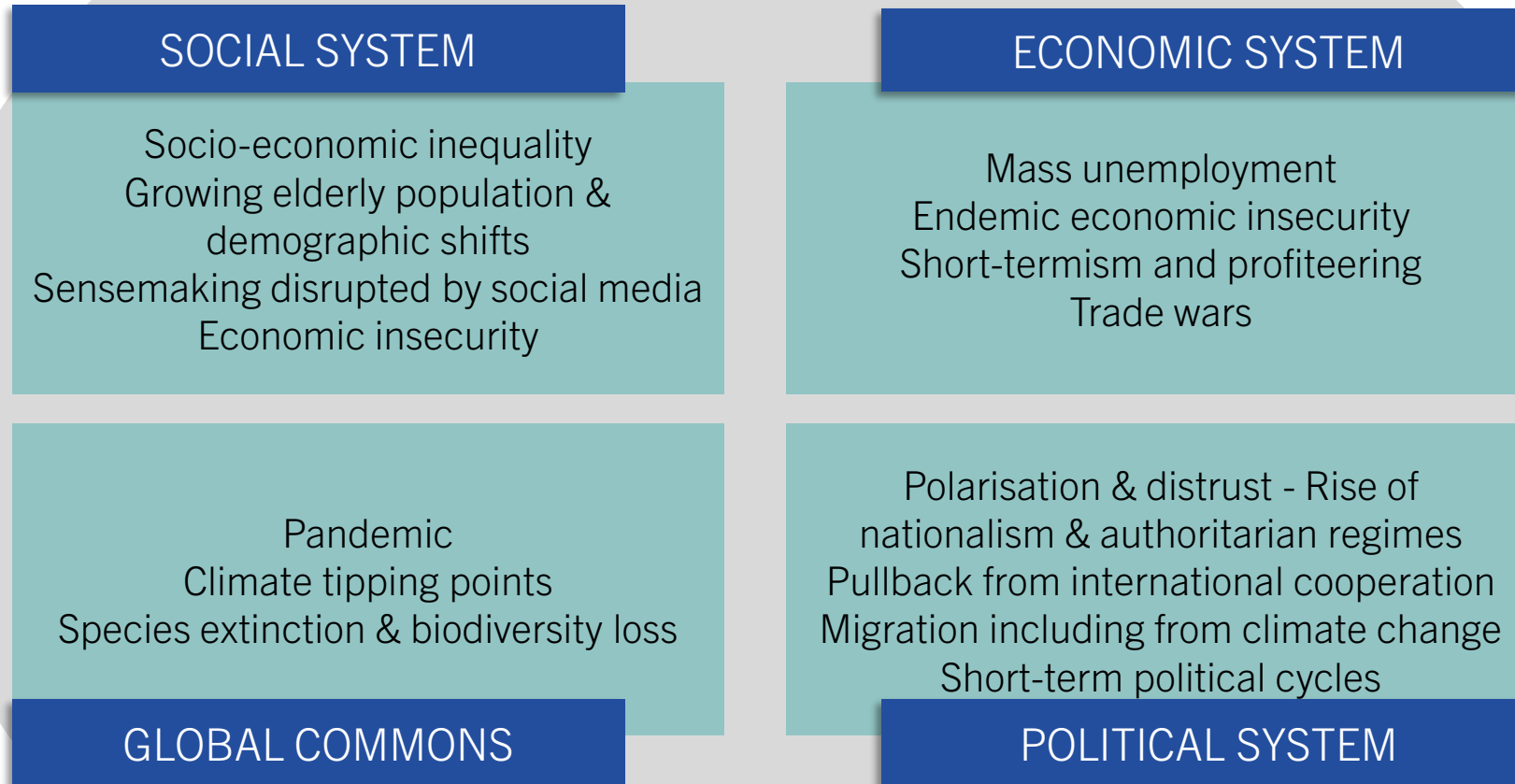
America and China joining climate leadership, Russian invasion of Ukraine testing geo political power play

## ACTIVISM WITH RENEWED VIGOUR:

Greta effect, “Convention Citoyenne pour le Climat”, “German Zero”, Black Lives matter, Public opinion impact

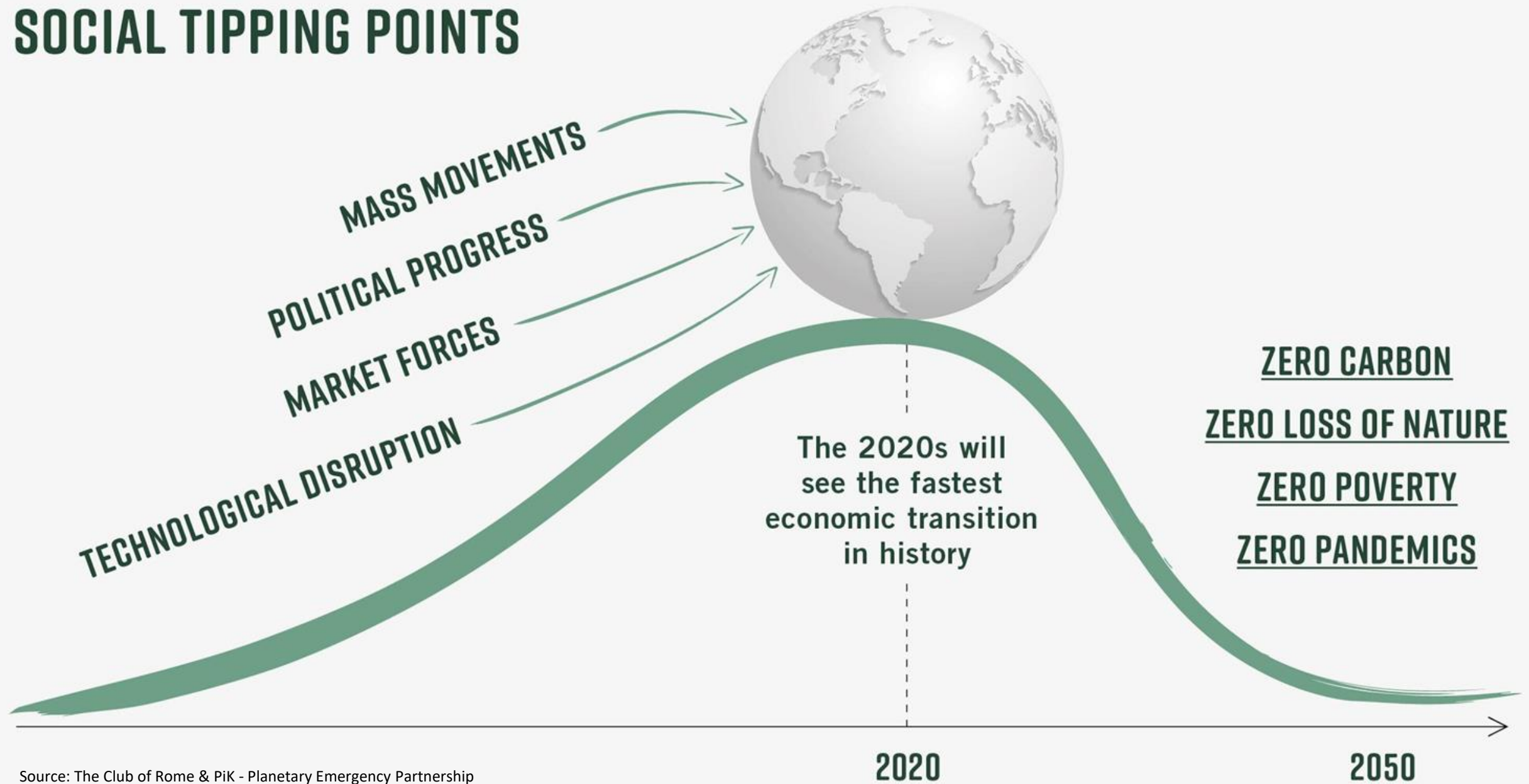


# Interconnected Global Instabilities: Net Zero Impact



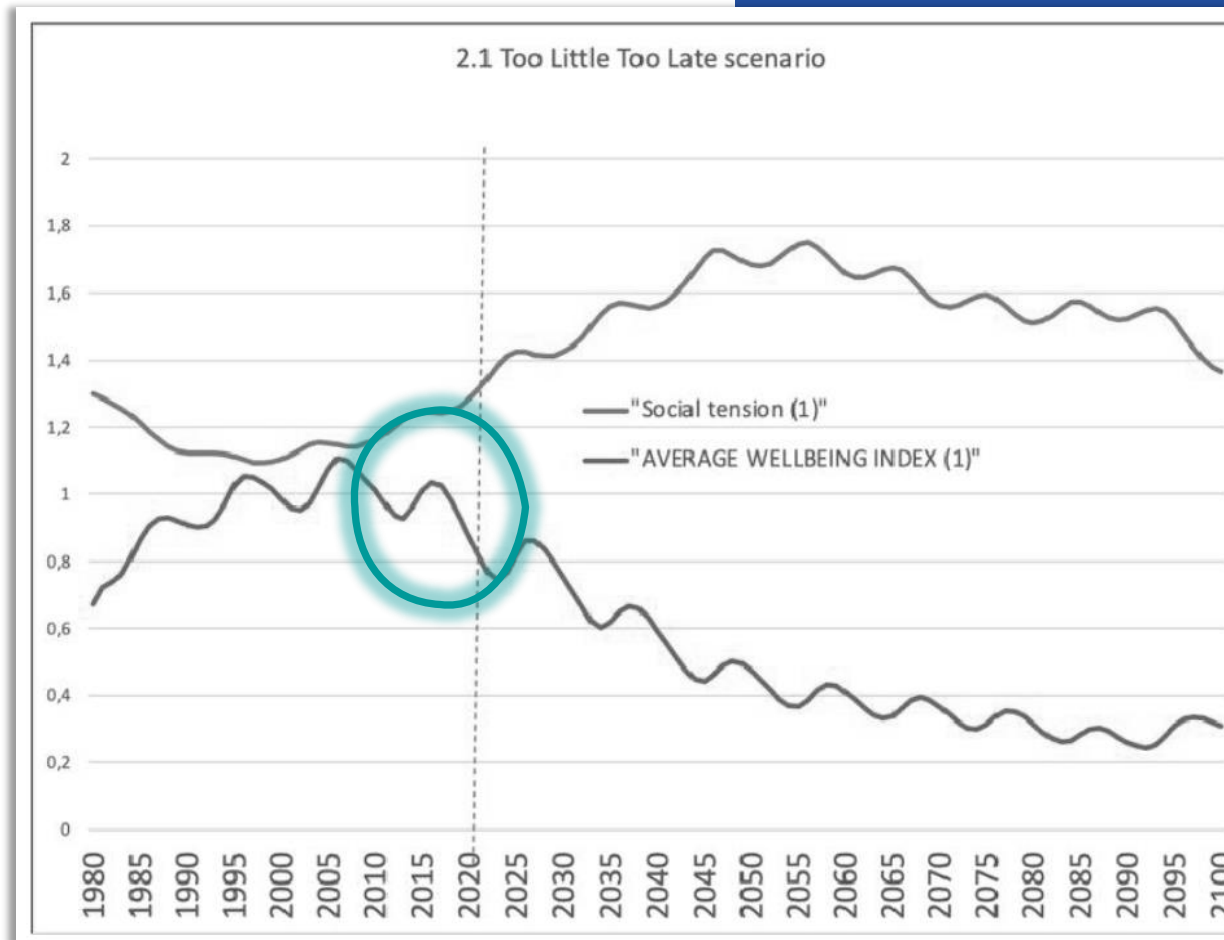


# SOCIAL TIPPING POINTS



Source: The Club of Rome & PiK - Planetary Emergency Partnership

# Global Wellbeing Declining



\*UNPUBLISHED RESEARCH. To be released by Earth4All September 2022



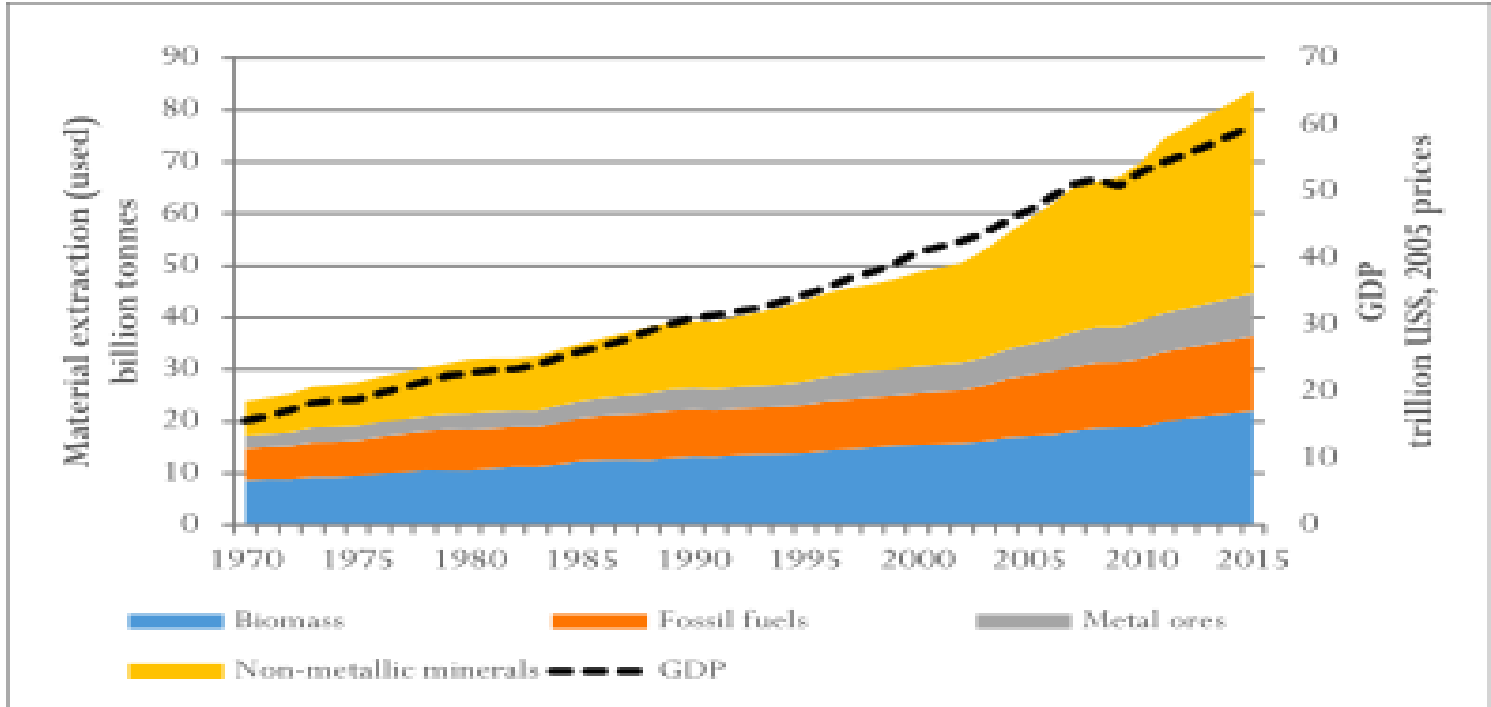
# 21<sup>st</sup> c impacts from growth and overconsumption

- ✓ **Population growth** = existing & future over consumption + resource dependency (2050 – 9.7 billion)
- ✓ The core limiting factor of human wellbeing and our (economic) development are (the unsustainable use of our) **natural resources and environmental sinks**
- ✓ **The world's richest 1% have more than twice as much wealth as 6.9 billion people** and the 22 richest men have more wealth than all the 326 million women in Africa
- ✓ **More than 50% of urban fabric expected to exist by 2050 still needs to be constructed.** 2011-13 China has used more cement than USA in 20th century
- ✓ **Climate change** experts warned us that emissions need to be about halved by 2030 to limit warming to 1.5°C
- ✓ **Biodiversity: Living Planet Index – 60% fall in just 40 years.** Biomass of the mammals living in the nature has been reduced in recent decades by 82%
- ✓ **A million plastic bottles are bought every minute** (9% of plastic recycled, 12% incinerated, 79% landfills). We throw away one third of the food we produce



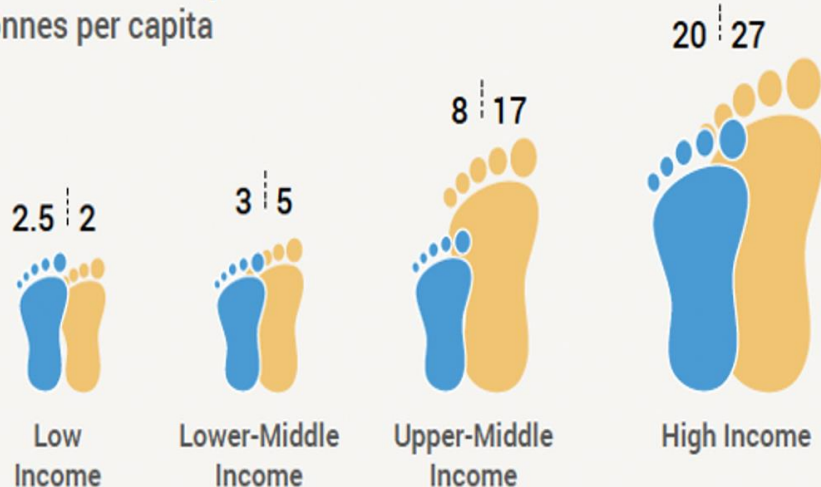
Figure 3: Global material extraction in billion tons, and global GDP in trillion US dollars 2005 prices, 1970-2015.

# Material Footprint



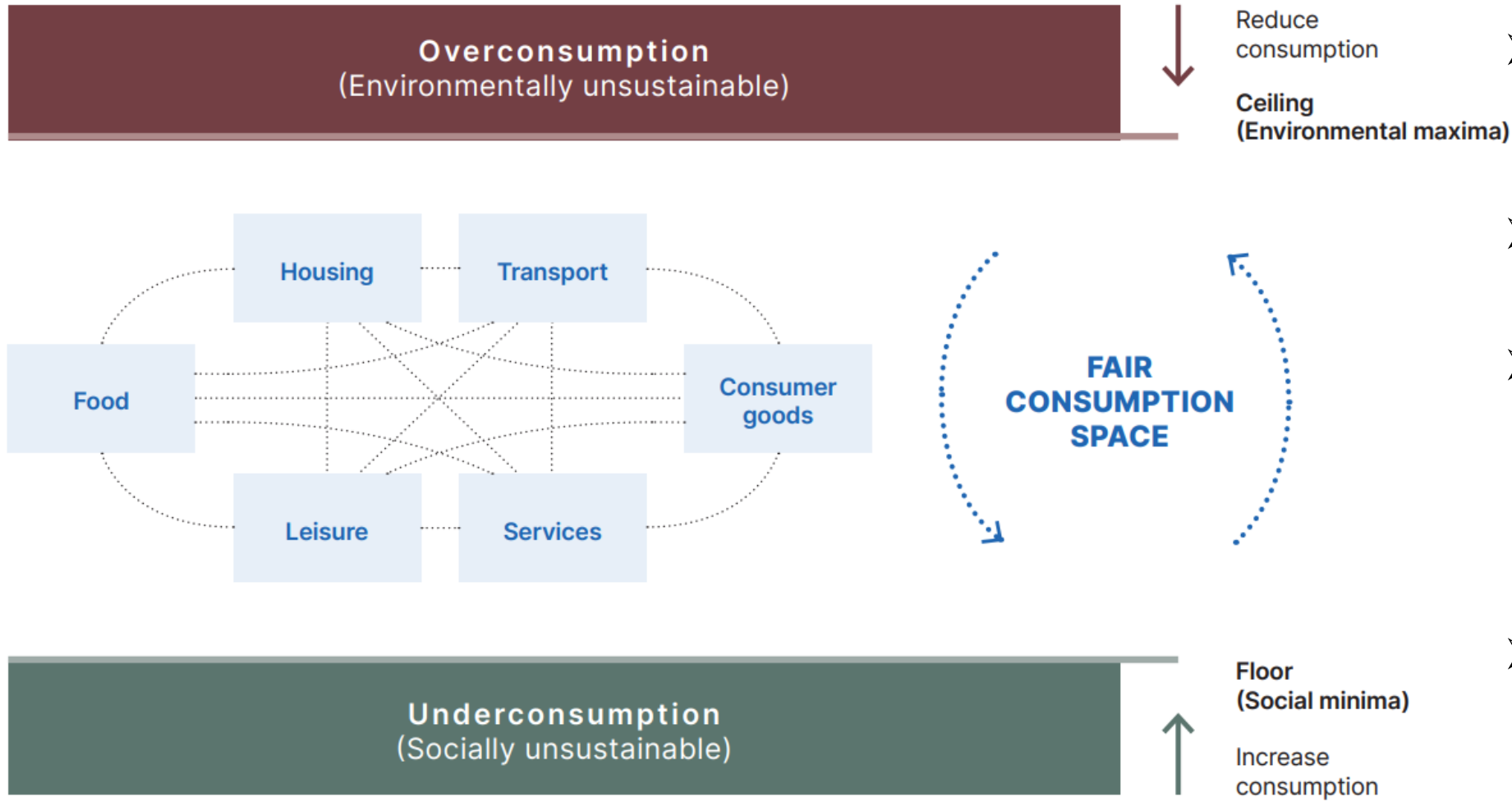
Source: Material extraction data from UNEP (2016a), GDP data from UNSD (2015).

## Material Footprint tonnes per capita





# The Fair Consumption Space – A Guiding Framework



- How do we divide up the limited remaining “carbon budget”?
- Whose needs and desires do we prioritise?
- How do we eliminate overconsumption while enabling everyone to consume enough to be healthy and safe?
- We need to put fairness at the centre of climate debates

# 21<sup>st</sup> CENTURY WELLBEING ECONOMICS



ECONOMIC INDICATORS:	SOCIETAL INDICATORS:	ENVIRONMENTAL INDICATORS:
<ul style="list-style-type: none"><li>• Jobs/employment</li><li>• Incomes (equality, poverty)</li><li>• Fair work &amp; business</li><li>• Employment &amp; economic conditions</li><li>• Housing (quality, access, etc.)</li></ul>	<ul style="list-style-type: none"><li>• Health and social care (equity, life expectancy, mental health, quality &amp; access)</li><li>• Education (knowledge, skills)</li><li>• Communities, social connections, social capital</li><li>• Culture</li><li>• Children &amp; young people</li></ul>	<ul style="list-style-type: none"><li>• Environmental protection &amp; climate (clean environment)</li><li>• Land use (land reclamation, protected areas, access to green and blue spaces)</li><li>• Energy</li><li>• Air &amp; water pollution</li><li>• Waste &amp; recycling</li></ul>



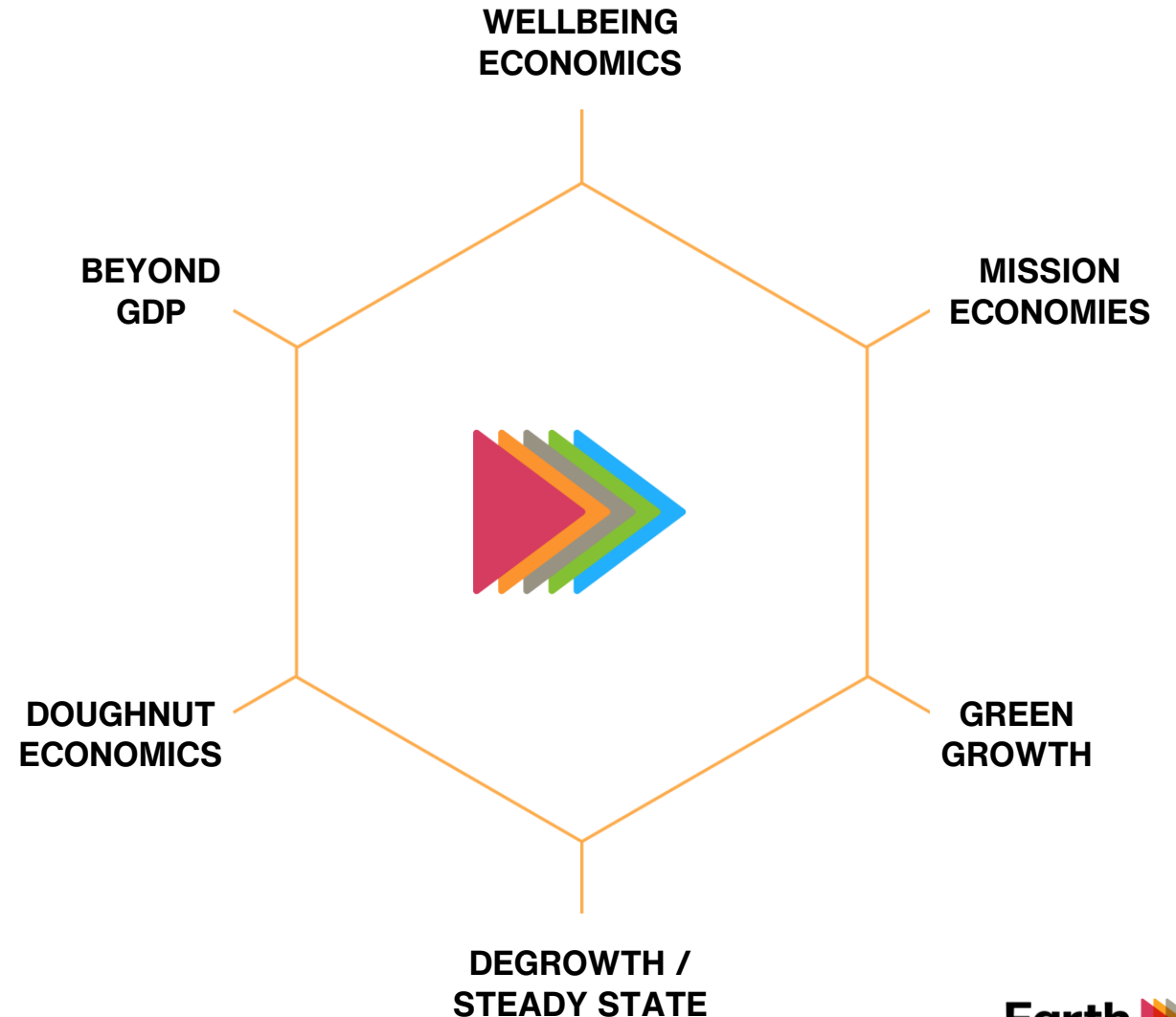
“WE NEED A RE-ARTICULATION OF HUMAN DEVELOPMENT FOR THE 21ST CENTURY – TO REDIRECT PURPOSE FROM GROWING GDP TO SECURING THE WELLBEING OF PEOPLE AND PLANET. NOW IS THE TIME TO FOCUS ON MEASURES OF WELLBEING”.

DAVID KORTEN

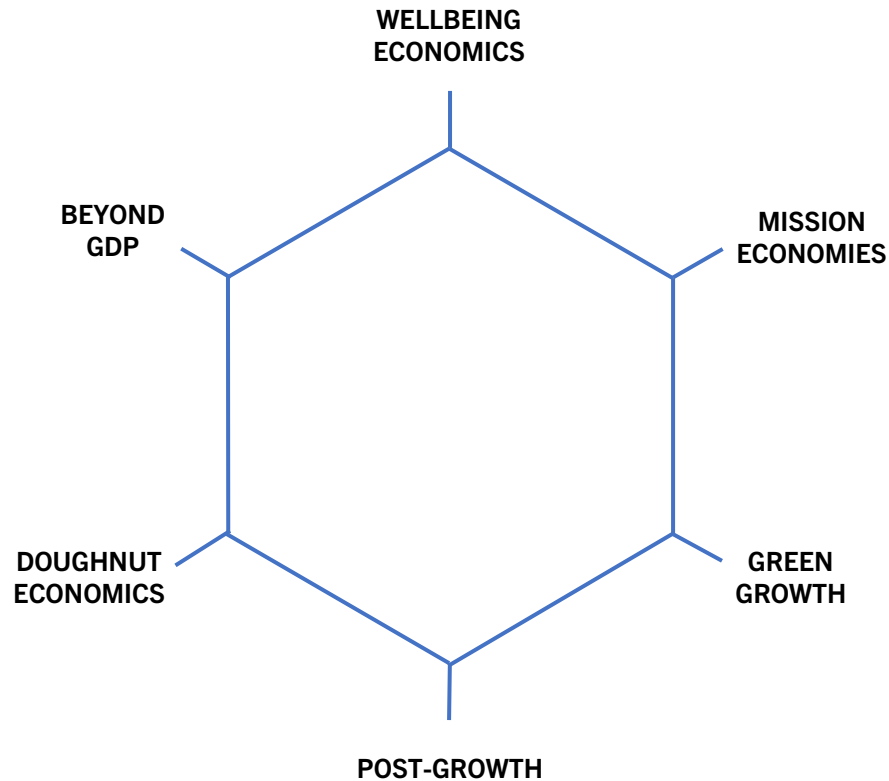
# TRANSFORMATIONAL ECONOMICS

**Bold new economic ideas are gaining traction and politicians are listening.**

Through the Transformational Economics Commission, Earth4All has gathered leading economic thinkers to analyse which ideas show the most promise to unite societies and bring long-term prosperity to the majority.



# We have transformational economics for the 21st century



- Account for social and environmental risk in financial and economic decision-making
- Expand our perspective of public goods and socialise the rewards of environmental and social commons
- Correct the inequity between high and low-income countries created by international finance and trade systems
- Increase the agency of women and workers to drive the direction of the economy

# 21<sup>st</sup> century transformational economics



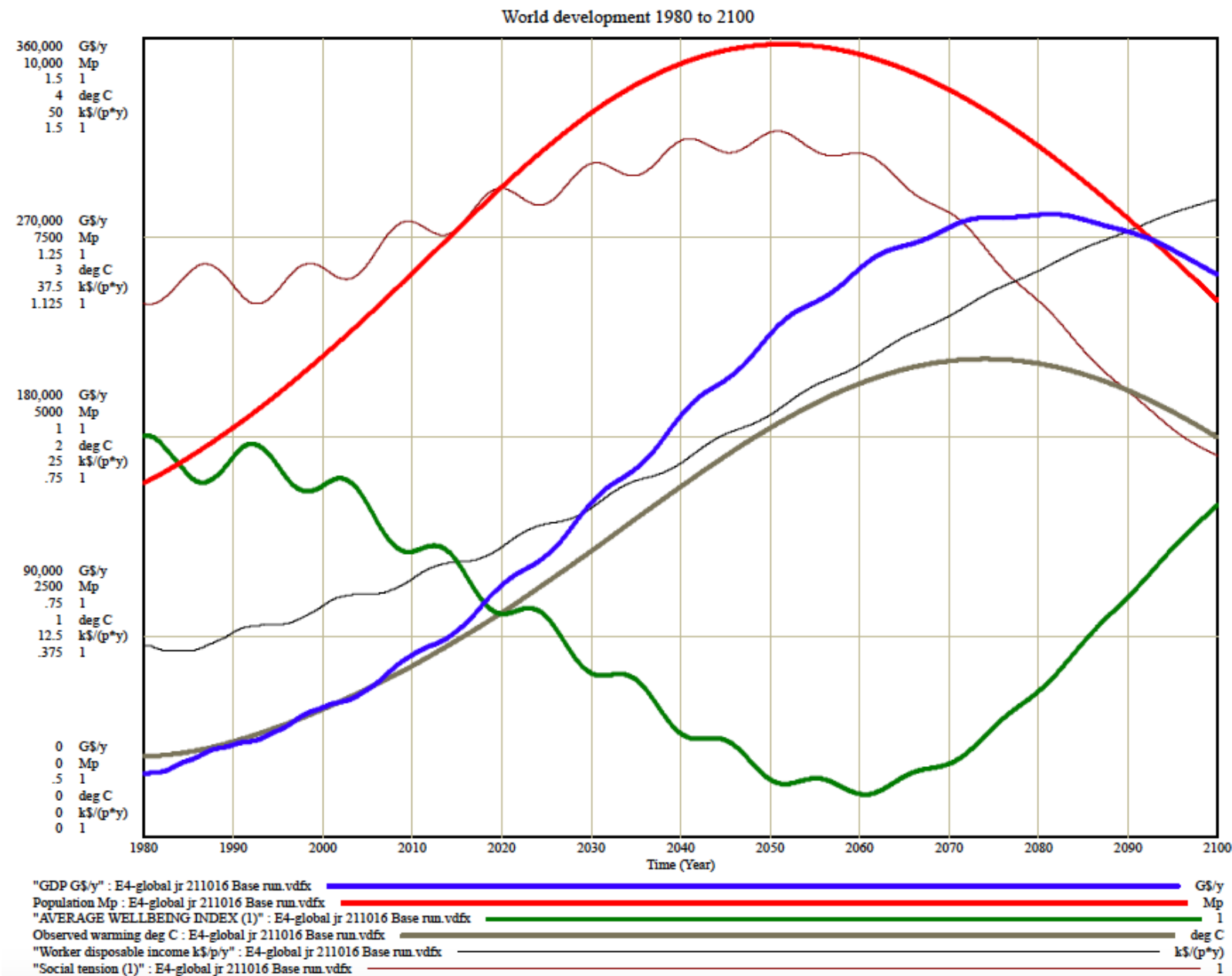
Global and regional system modelling

## A SYSTEMS CHANGE AGENDA FOR GREATER WELLBEING IN PLANETARY BOUNDARIES





# Earth4All: GDP Growth + Pop Growth + Climate = (-) Well Being



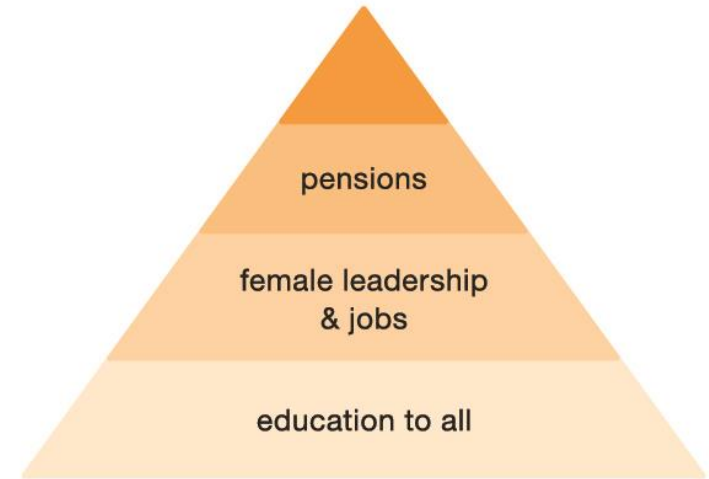
# THE ACTIONS TO ACHIEVE THE TURNAROUNDS



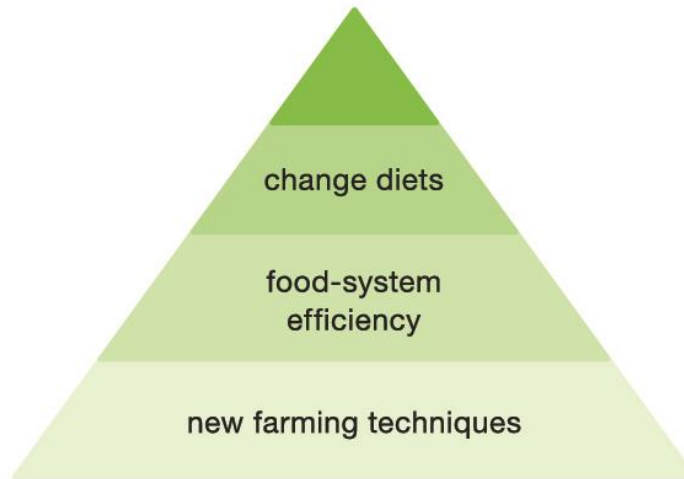
## POVERTY



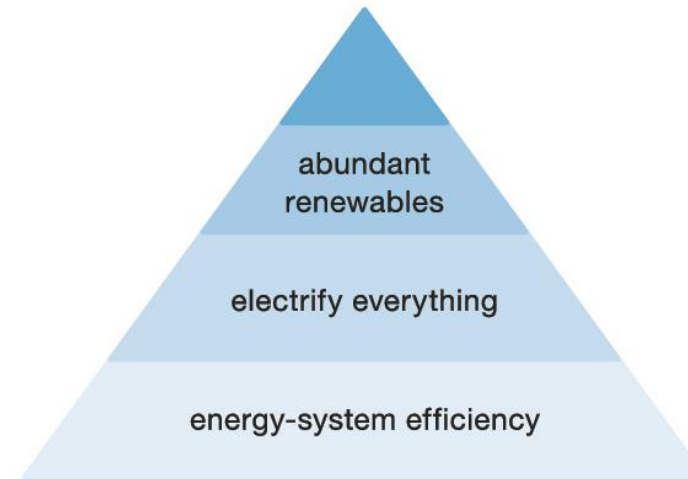
## INEQUALITY



## EMPOWERMENT

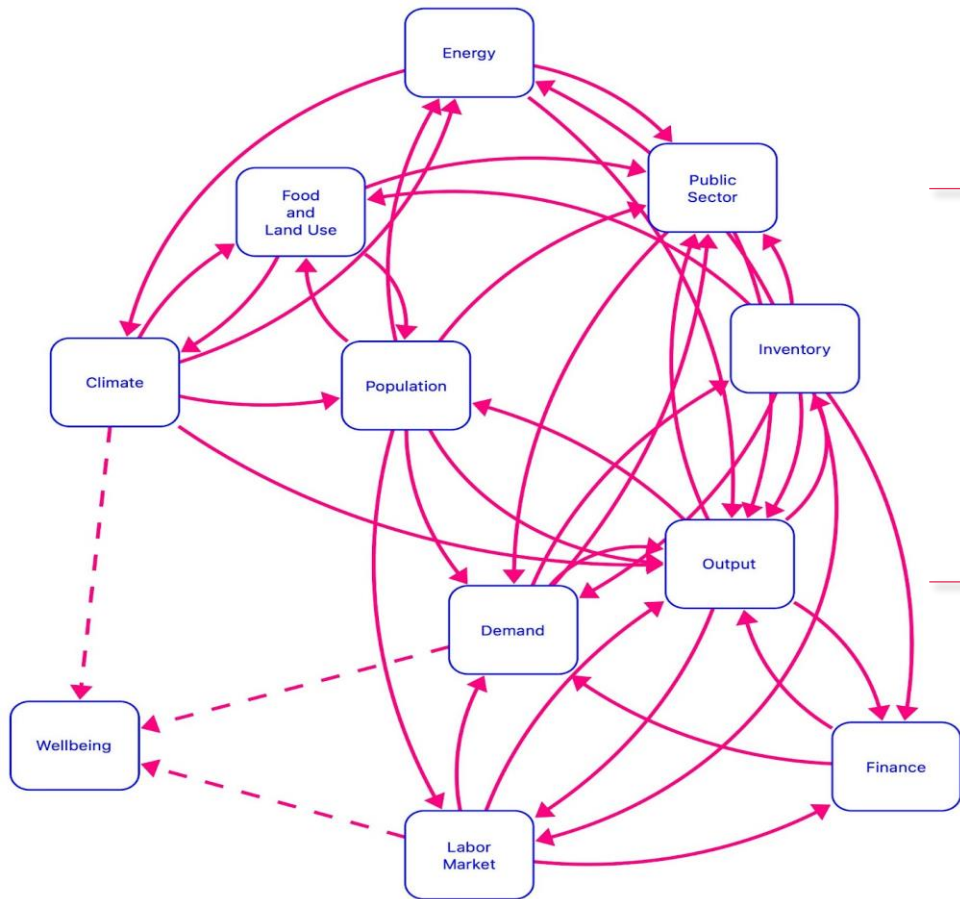


## FOOD



## ENERGY

# The Earth4All Model



A tool to consistently **ASSESS** and **QUANTIFY** the econ-socio-bio-system dynamics *and* the impacts of extraordinary action in 5 areas:



# The Five Global Turnarounds needed

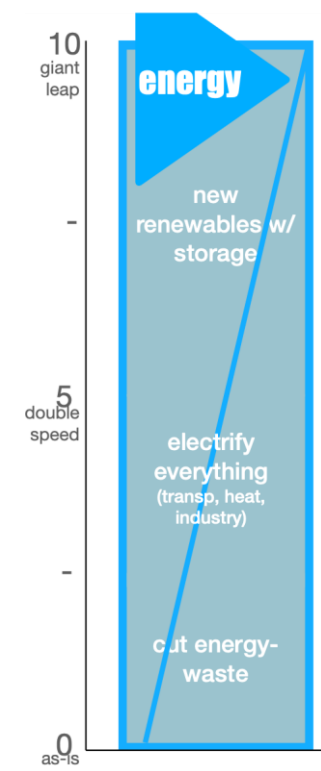
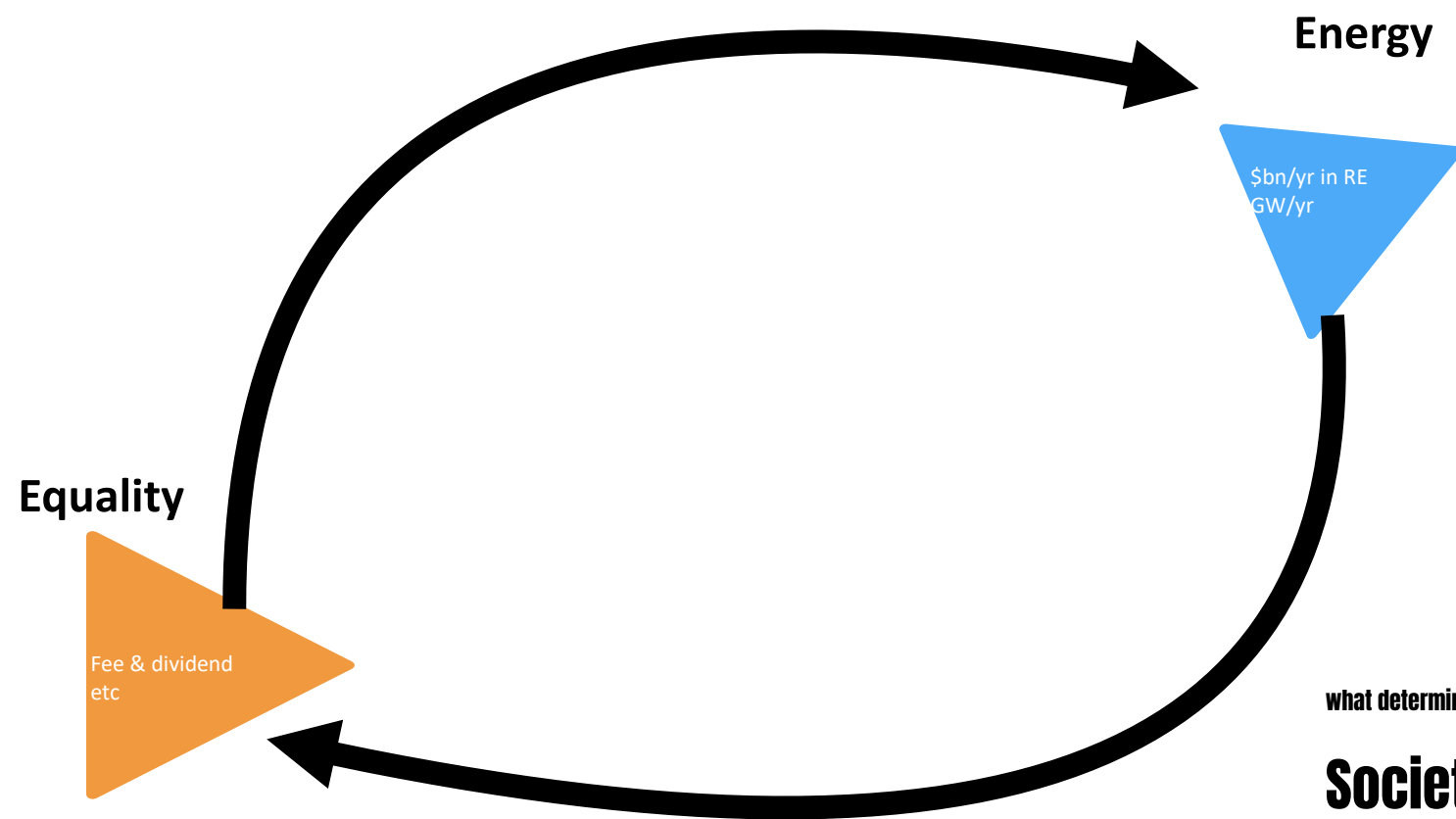
- 1 **Ending poverty**. All low- to middle-income countries have reached a minimum income threshold of USD 15,000 per person per year.
- 2 **Addressing gross inequality**. The wealthiest 10% should take no more than 40% of national incomes.
- 3 **Accelerating gender equity** globally to improve wellbeing and contribute to stabilising population growth by 2050.
- 4 **Transforming the food system** to regenerative and sustainable agriculture and providing healthy diets for people within planetary boundaries.
- 5 **Transitioning to clean energy** on a “Carbon Law” pathway of cutting fossil fuels and other greenhouse gases 50% every decade to reach net zero emissions by 2050

# Novelties of the Earth4All Model

- 1 **INEQUALITY**  
We investigate the distributional effects in terms of owner & worker share of output from both private investment and public sector activities, confirming the preliminary evidence in favor of the relevance of distributional patterns for the determination of sustainable policy-making (Rao et al, 2017)
- 2 **ECOLOGY**  
We include the wider effect of the human economy on the main planetary boundaries (climate, nutrients, forests, biodiversity), the impact of the natural boundaries on economic development and their complex feedback effects (Harfoot et al., 2014)
- 3 **PUBLIC SECTOR**  
We model an active public sector with public infrastructure capacity, welfare policies and an active climate-change mitigation policy stance (Mazzucato, 2021)
- 4 **FINANCE**  
We include the effects from debt and money supply, central bank interest rates and corporate capital costs, addressing the call for further integration of financial mechanisms with IAMs (Battiston et al, 2021)
- 5 **LABOR**  
We are able to simulate a recurrent 10-year unemployment cycle and its macroeconomic consequences, a global first (Ciarli & Savona, 2019)
- 6 **POPULATION**  
In contrast to UN's statistical approach, we have endogenous population dynamics affected by investment levels in public spending, education and income levels, improving on existing IAM with demographic sectors (McIsaac, 2020)
- 7 **WELLBEING**  
We integrate a wellbeing index, and social tension index (as a function of GDPpp, unemployment, income inequality, debt burden, government services, local/regional pollution, perceived global warming), illustrating the connection between environmental and social sustainability and integrating the latter within a IAM for the first time (Eizenberg & Jabareen, 2017)



# Energy-Equality inter-relationships

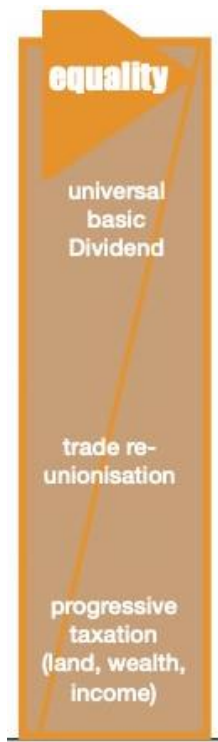


what determines the speed of the energy turnaround?

**Societal trust !**  
(interpersonal and institutional trust)

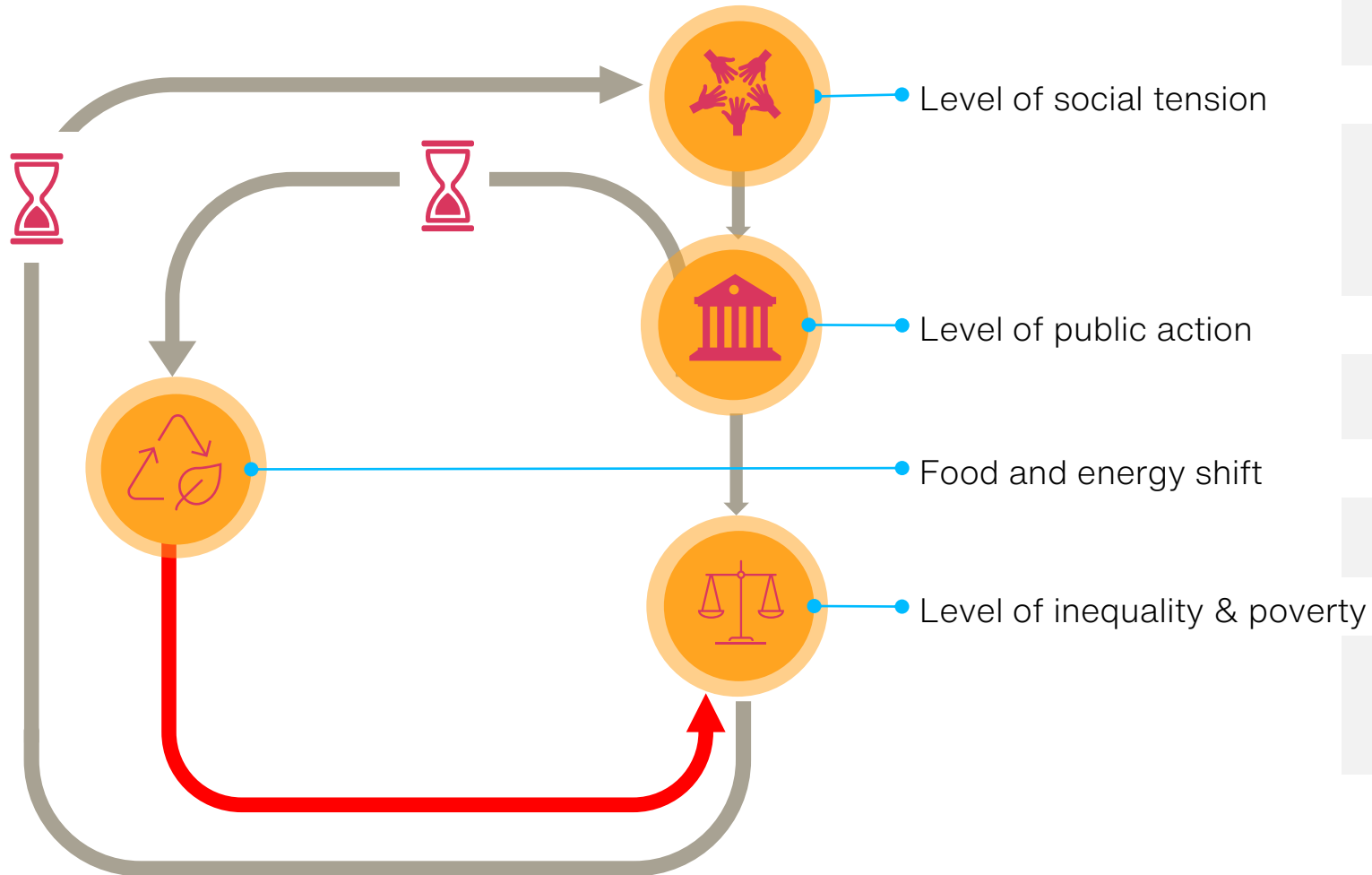
And what determines the Societal trust?

**Inequality**  
(both income- and wealth inequality)



# The Critical Feedback Loop

ACTION ON PLANETARY BOUNDARIES IS A FUNCTION OF ACTION ON INEQUALITY AND POVERTY



Social trust influences the political space available for transformative public action

How effectively the state intervenes to reduce inequality and planetary breakdown

The regulation of the food and energy system impacts inequality

Inequality drives social tension

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# THE **FIVE** TURNAROUNDS IN DETAIL

## *Turnaround 1) Poverty*

- Allow the International Monetary Fund to allocate over \$1 trillion annually to low-income countries for green jobs— creating investments through so-called Special Drawing Rights.
- Cancel all debt to low-income countries (<\$10,000 income per person).
- Protect fledgling industries in low-income countries and promote South-South trade between these countries. Improve access to renewables and health technologies by removing obstacles to technology transfer, including intellectual property constraints.

## *Turnaround 2) Inequality*

- Increase taxes on the 10% richest in societies until they take less than 40% of national incomes by 2030. The world needs more progressive taxation; and closing international loopholes is essential to deal with destabilizing inequality and luxury carbon and biosphere consumption.
- Legislate to strengthen worker's rights. In a time of deep transformation, workers need economic protection.
- Introduce Citizens Funds to give all citizens their fair share of the national income, wealth, and the global commons through fee and dividend schemes.

*Source: Dixon-Decleve et al (2022) Earth for All, A Survival Guide for Humanity, Forthcoming, p. 170.*

# THE **FIVE** TURNAROUNDS IN DETAIL

## *Turnaround 3) Gender Equity*

- Provide access to education for all girls and women.
- Achieve gender equity in jobs and leadership.
- Provide adequate pensions.

## *Turnaround 4) Food system*

- Legislate to reduce food loss and waste.
- Scale up economic incentives for regenerative agriculture and sustainable intensification.
- Promote healthy diets that respect planetary boundaries.

## *Turnaround 5) Energy system*

- Immediately phase out fossil fuels and scale up energy efficiency and renewables. Triple investments immediately to >\$1 trillion per year in new renewables.
- Electrify everything.
- Invest in energy efficiency and storage at scale.

*Source: Dixon-Decleve et al (2022) Earth for All, A Survival Guide for Humanity, Forthcoming, p. 170.*



# A **NEW** POLICY NARRATIVE

*Earth4All supports systemic thinking for new policies by supplying the economic thinking and framework for systems change that moves beyond siloed thinking:*

- Five turnarounds have been developed with world class economic and scientific modellers and stress tested by a multi-disciplinary Commission of thought leaders from across the globe.
- For the first time, we have evidence to suggest that turning around our economies **is achievable**. Earth4All has developed a framework of **five turnarounds that can support long-term prosperity** on a (relatively) stable planet.
- Implementing these turnarounds requires **bold economic ideas** that move us away from the current destructive economic paradigm, ensures we address current environmental and social tipping points and builds a future that ensures a more holistic balance between people, planet and prosperity.
- The most novel finding of the analysis is that **extreme inequality needs to be addressed as a matter of urgency to remain within planetary boundaries**. Without transformative steps to address inequality, social tension will continue rising, eroding trust and making it even more difficult to take essential long-term decisions in the future. This then increases the likelihood of crossing dangerous tipping points in the Earth system.

# CALLS TO ACTION

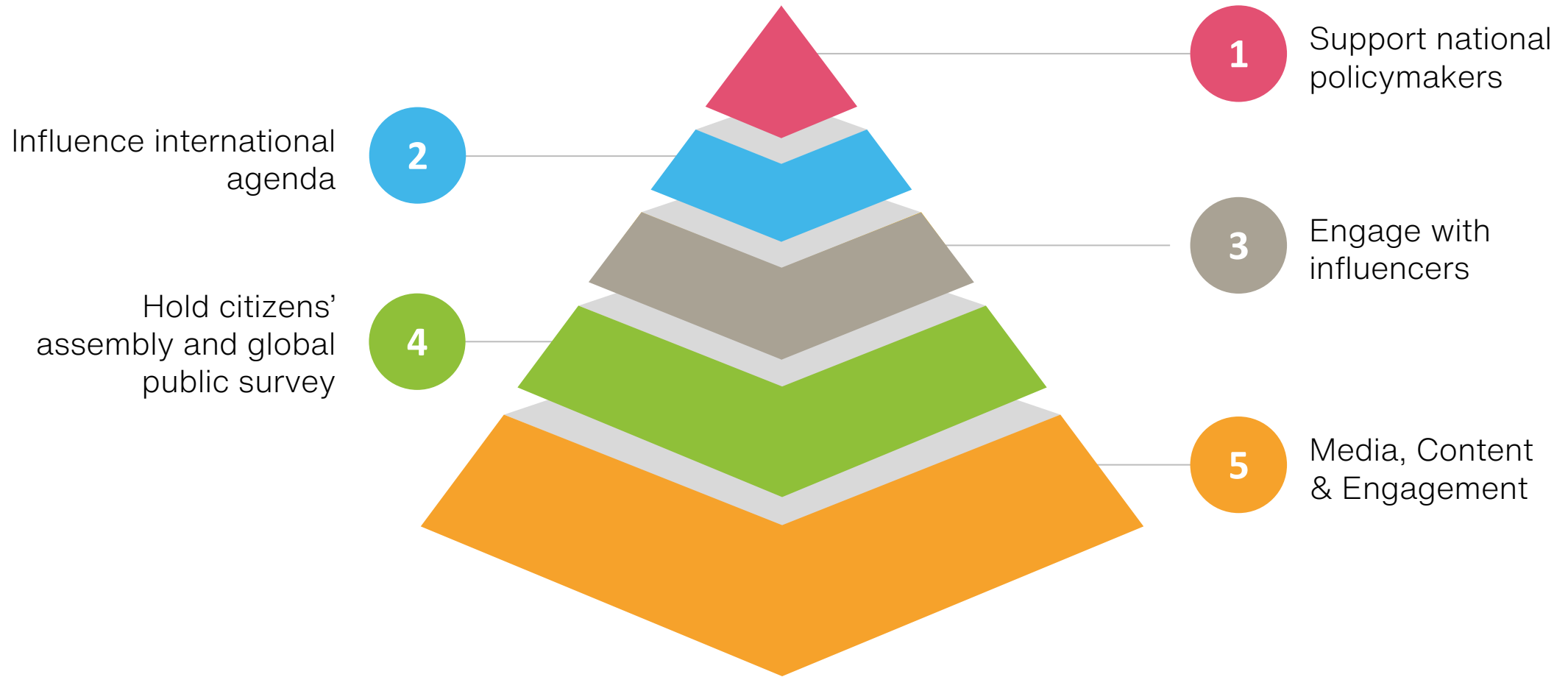
## Our findings are that we immediately need to:

- Upgrade and transform the dominant economic worldview from extractive to regenerative in both monetary and material cycles by applying insights from living systems.
- Upgrade and transform the global financial system (the World Bank, International Monetary Fund, WTO and well beyond).

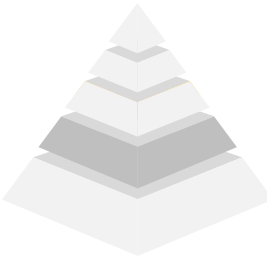
## This is because current trends will not lead to wellbeing for the majority.

- Nothing less than all of the five turnarounds are necessary.
- Governance by an active, trusted state is needed.
- Bold, new funding mechanisms through which high-income countries support the low-income countries are crucial for everyone's wellbeing.
- Long-term planning rather than short-term decision-making will be necessary.
- Material consumption patterns will need to both decrease and shift in terms of resource distribution.
- Achieving the key turnarounds at speed requires sharing the benefits, bottom-up participation, and local adaptation.
- New economic indicators must be adopted that shift beyond GDP to a wellbeing economics that prioritises people, planet and prosperity for all.

# THE MOVEMENT



# TO CITIZENS



Collaborate with Global Assembly to run a citizen assembly focused on economic systems change\*

Extract wellbeing-related demands and reports from past citizen assemblies and Global Assembly

Commission Ipsos MORI survey targeting G20 countries and focusing on level of public support for economic systems change

\*Earth4All is still in discussions with Global Assembly. A full Global Assembly would need to be funded as a separate project to maintain the integrity of the global assembly process.

Include in calls to action by government to hold

# OUTCOMES OF CITIZEN ENGAGEMENT

Create a space for the public to engage in and make demands of new economic thinking

Ground the Earth4All scientific and economic recommendations into demands that the public can make towards decision-makers

Trigger the democratic and realistic translation of Earth4All recommendations into nationally-relevant policy

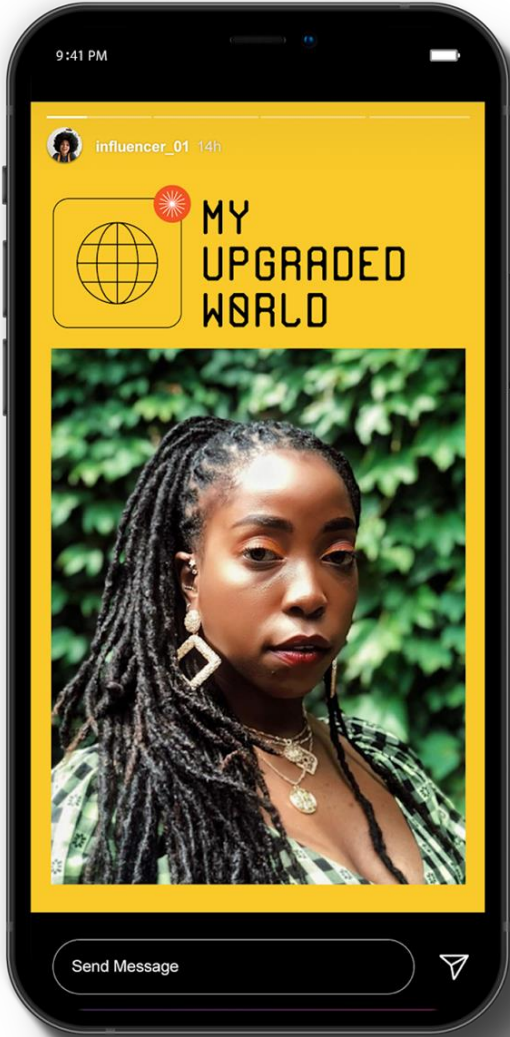
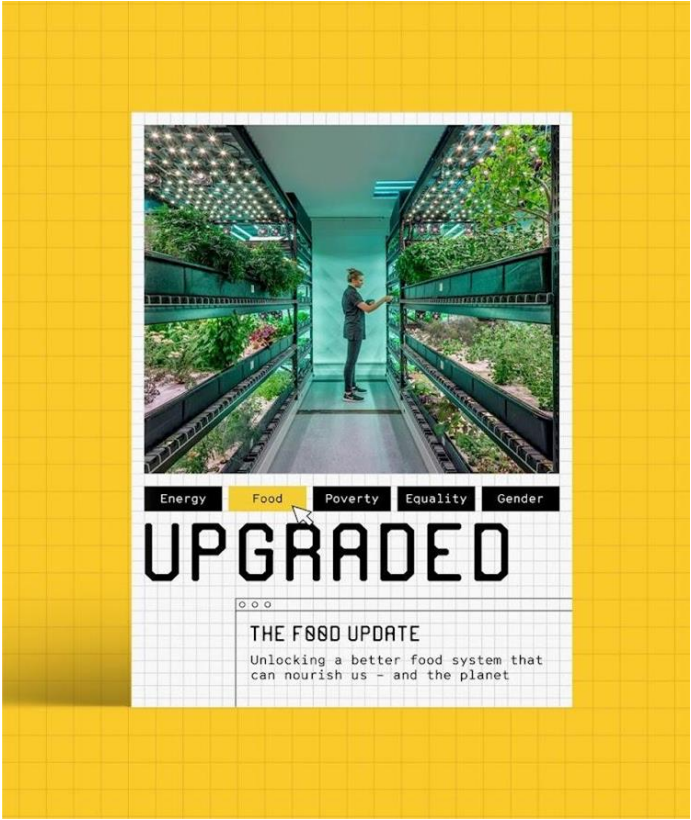
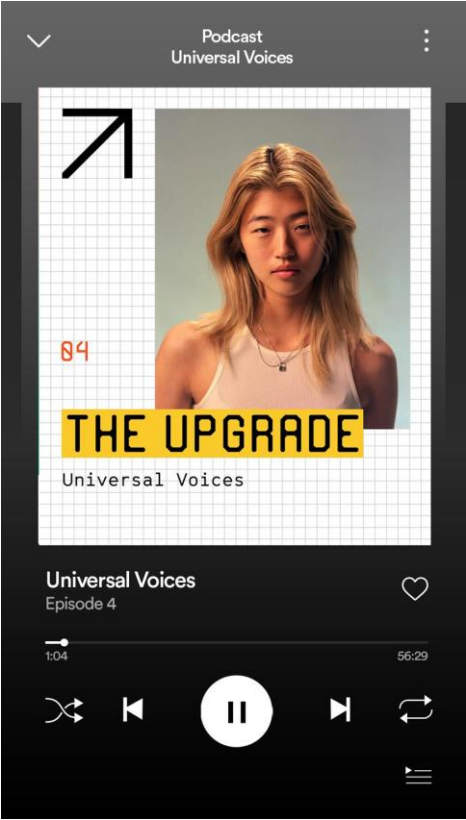




# Example execution

## MY UPGRADED WORLD

Innovative storytelling hub and community of diverse voices, directly amplifying the conversation to policy-makers.



# THIS IS A **UNIQUE** **MOMENT IN TIME**



## **THE SHOCK**

The global pandemic has forced us to reflect on what really matters.



## **THE URGENCY**

We have 8.5 years and counting to avoid the worst impacts of the climate crisis.



## **THE WILL**

74% of people in G20 countries want transformation towards “wellbeing economies”\*

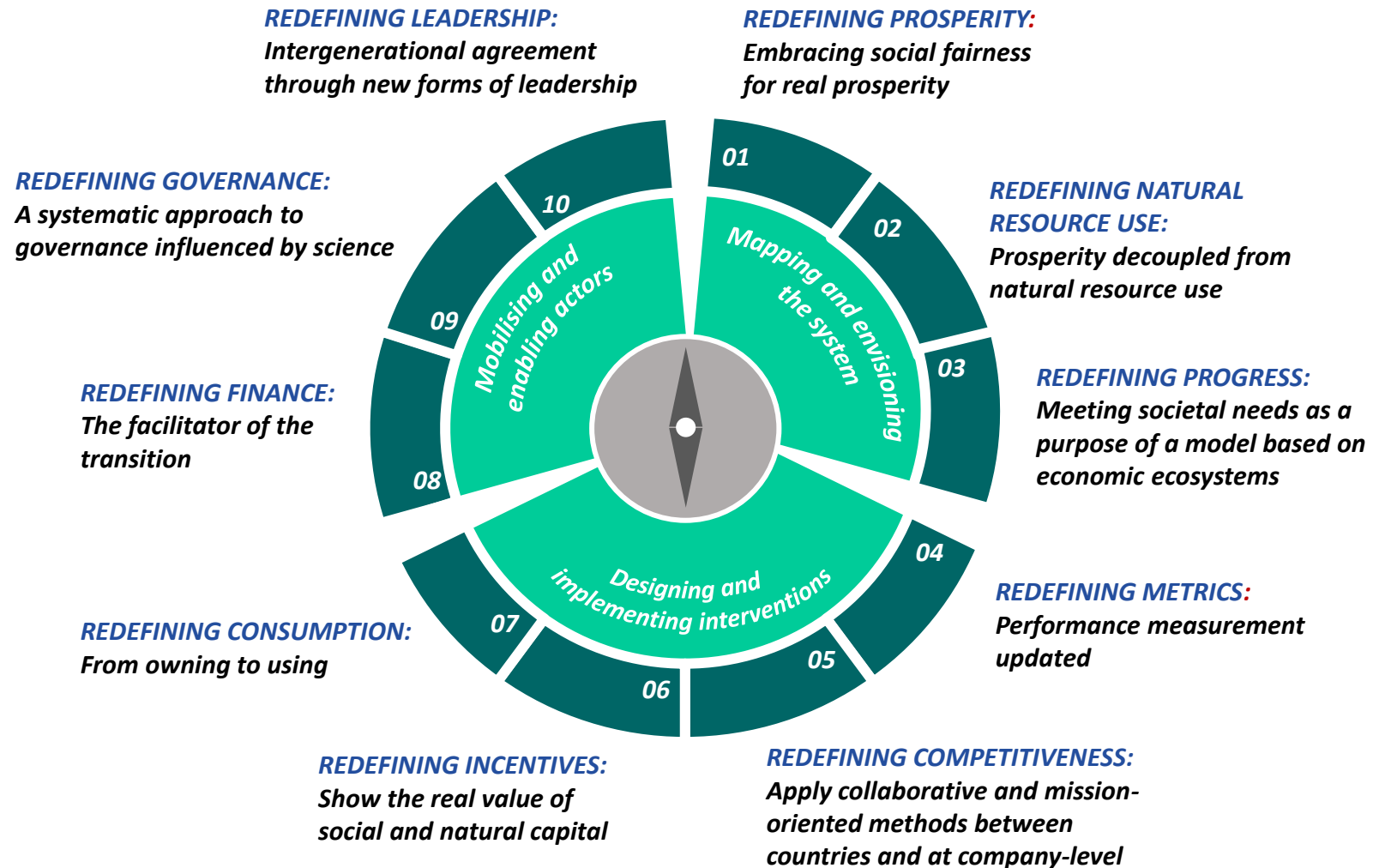
# ESIR DGR&I Recovery: Protect-Prepare-Transform Europe



Europe needs to play a central role in changing our systems to ensure greater resilience by design, not by disaster. Research and innovation is essential part of COVID19 EU response:









- PROTECT People-Planet-Prosperity
- PREPARE better for the next crises
- TRANSFORM Society, economy and regenerate the planet

# The System Change Compass: 10 Principles for Change



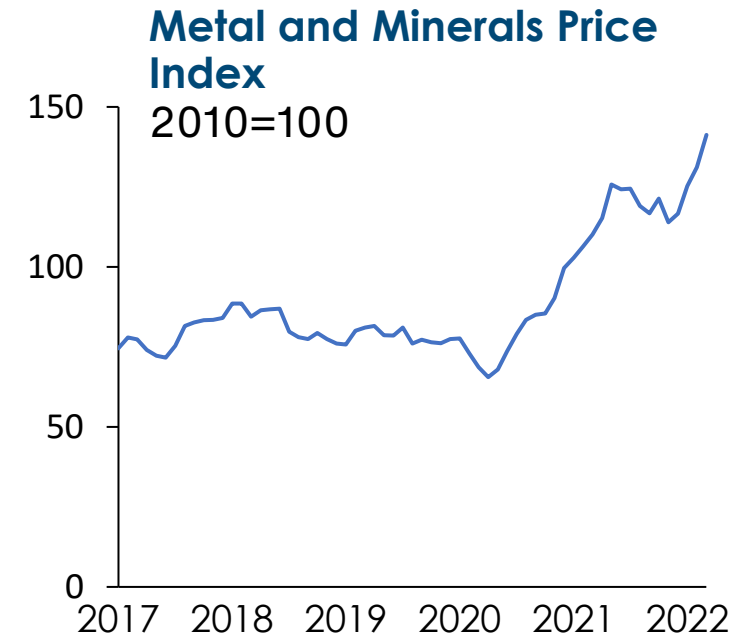
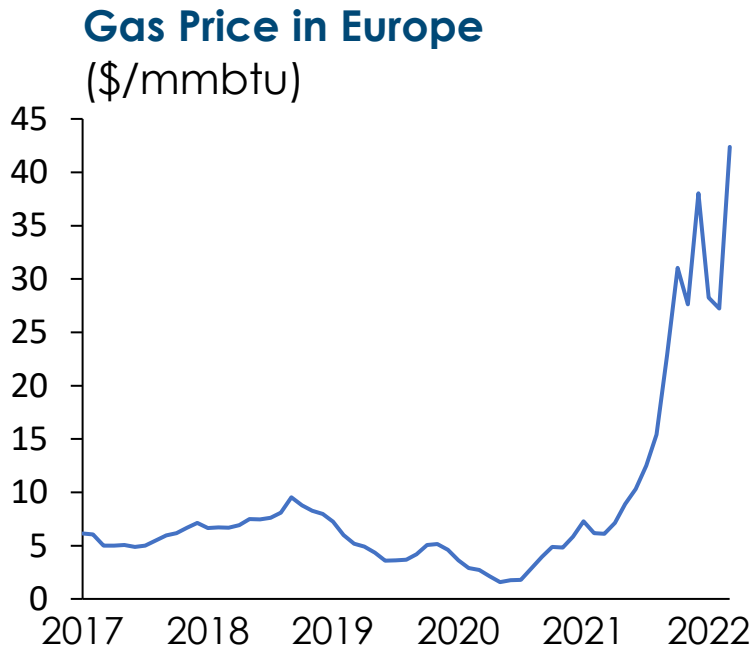
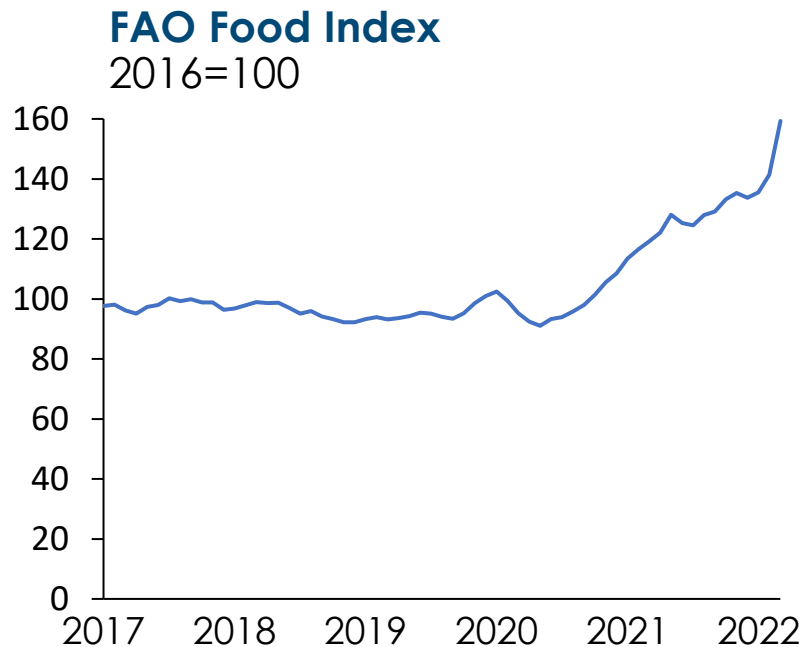


# 50+ nascent industrial champions that should be supported to build ecosystems based on compass orientations

<b>Healthy food</b>  <ul style="list-style-type: none"> <li>• Organic food and beverages</li> <li>• Regenerative agriculture</li> <li>• Sustainable aquaculture and fishing</li> <li>• Reduce and valorise food waste</li> <li>• Urban agriculture</li> <li>• Product reformulation for nutritious food</li> <li>• Alternative proteins</li> </ul>	<b>Built Environment</b>  <ul style="list-style-type: none"> <li>• Smart urban planning</li> <li>• Rethink built environment ownership</li> <li>• Repurpose underutilized buildings</li> <li>• Retrofit existing buildings</li> <li>• Fluid and sufficiency-oriented space management</li> <li>• Circular and net-zero housing</li> </ul>	<b>Intermodal Mobility</b>  <ul style="list-style-type: none"> <li>• Fast charging infrastructure</li> <li>• High speed railway infrastructure</li> <li>• Modern and adapted transit infrastructure</li> <li>• Car- and ride-sharing models</li> <li>• End-of-life management for cars</li> <li>• Electric and autonomous vehicles</li> <li>• Infrastructure to improve traffic flow and AV adoption</li> <li>• Green aviation</li> <li>• Green shipping</li> <li>• Walking/cycling infrastructure</li> </ul>	<b>Consumer goods</b>  <ul style="list-style-type: none"> <li>• Product-as-a-Service models</li> <li>• Maintenance and value retention in products</li> <li>• Peer-to-peer product sharing platforms</li> </ul>
<b>Nature-based</b>  <ul style="list-style-type: none"> <li>• Restoration of degraded land and coasts</li> <li>• Smart forest management</li> <li>• Urban greening</li> <li>• Systems for paid ecosystem services</li> <li>• Seaweed</li> <li>• Marine and land-based environmental protection areas</li> <li>• Ecotourism</li> </ul>	<b>Energy</b>  <ul style="list-style-type: none"> <li>• Renewable power generation</li> <li>• Energy storage</li> <li>• Hydrogen economy</li> <li>• Smart metering and (point-of-use) energy management</li> <li>• Grid integration and technologies</li> <li>• Production of low-carbon gaseous and liquid fuels (transition technology only)</li> <li>• Carbon capture infrastructure (transition technology only)</li> </ul>	<b>Circular Materials</b>  <ul style="list-style-type: none"> <li>• Localised and distributed value chain systems</li> <li>• Asset recovery systems and reverse logistics</li> <li>• Markets for secondary materials</li> <li>• High-value material recycling</li> <li>• Materials-as-a-Service models</li> <li>• New materials and high-performing substitutes</li> <li>• Additive manufacturing</li> </ul>	<b>Information and processing</b>  <ul style="list-style-type: none"> <li>• Distributed manufacturing</li> <li>• High-speed digital infrastructure</li> <li>• Digital material information and tracking systems</li> <li>• Data generation, processing, and protection</li> <li>• Artificial Intelligence for societal challenges</li> </ul>

# Local war, global impact: the war in Ukraine is a call to build resilience and sustainability into the world economy

- World leaders must tackle the war's global-reaching economic consequences, especially its disruptions to food supplies, energy markets and materials supply chains already weakened by the pandemic.
- Resulting shortages and price hikes are impacting households and businesses globally, the poorest are hardest hit.
- Responses to the immediate economic hardships of the war that don't take their systemic roots into account risk slowing down, possibly reversing, the crucial global advance towards a net zero, nature-positive and equitable world





# Systemic solutions: addressing socioeconomic needs from the war whilst accelerating global economy restructuring on resilient and sustainable lines

## Protect vulnerable populations against price spikes immediately

- Unlock short-term increase in supply of food and energy
- Target short-term relief on households & businesses that need it most
- Design distribution markets that protect consumers from future price spikes

## Diversify supply chains and import markets

- Diversify food varieties and sources of food imports
- Diversify sources of fossil and renewable energy imports
- Diversify sources for critical materials

## Accelerate the substitution of increasingly costly imported products through regional and renewable resources

- Re-localise food production
- Shift to regional, renewable energy supply
- Re-localise material extraction

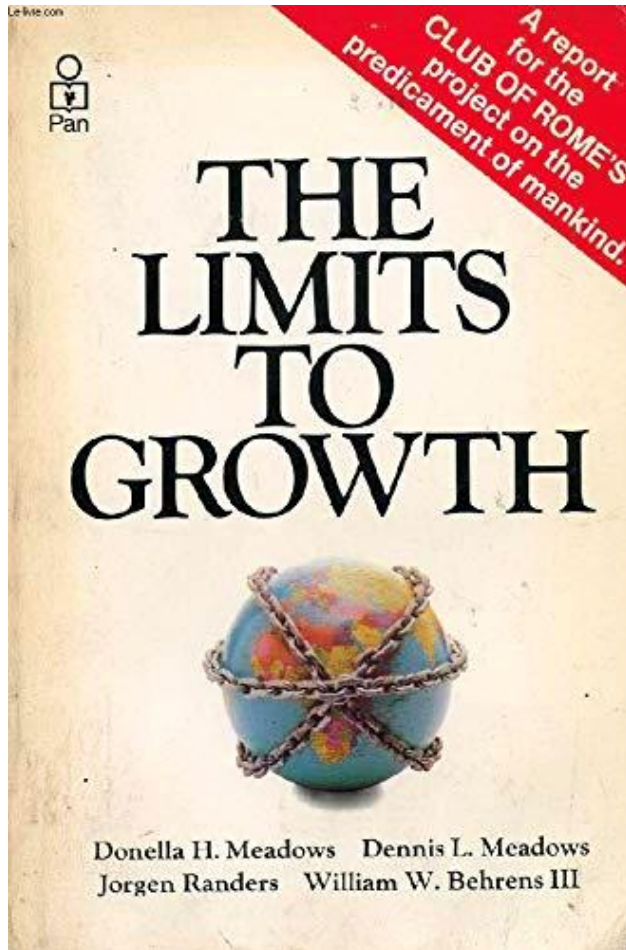
## Reduce final demand for increasingly costly resources and products

- Reduce demand for cereals going to animal feed and biofuels
- Reduce demand for fertilizers through regenerative agriculture
- Reduce energy & materials consumption through behavioural shifts

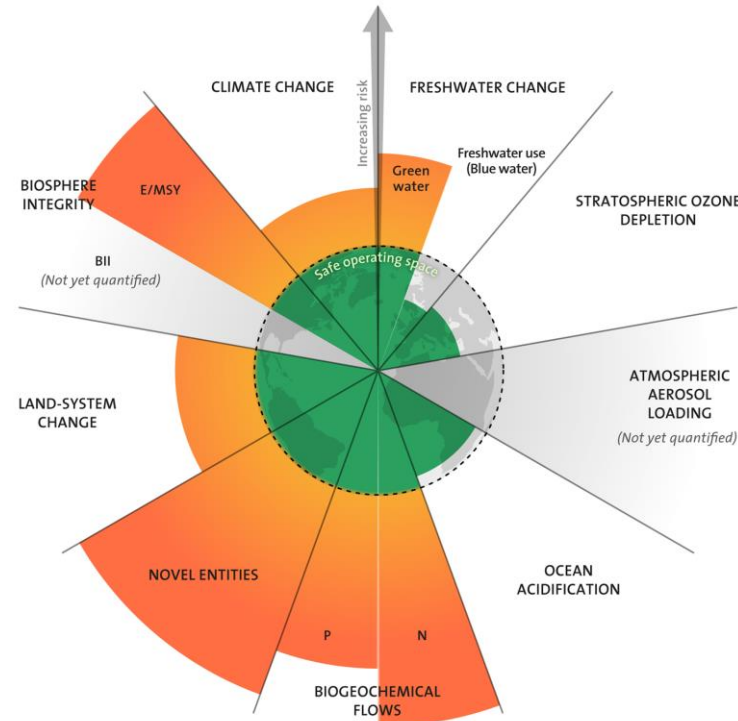
## Enhance resource productivity to get more out of constrained supply

- Reduce food waste
- Improve energy efficiency in buildings and industry
- Shift to circularity in materials value chains
- Ramp-up use of agricultural and industrial byproducts

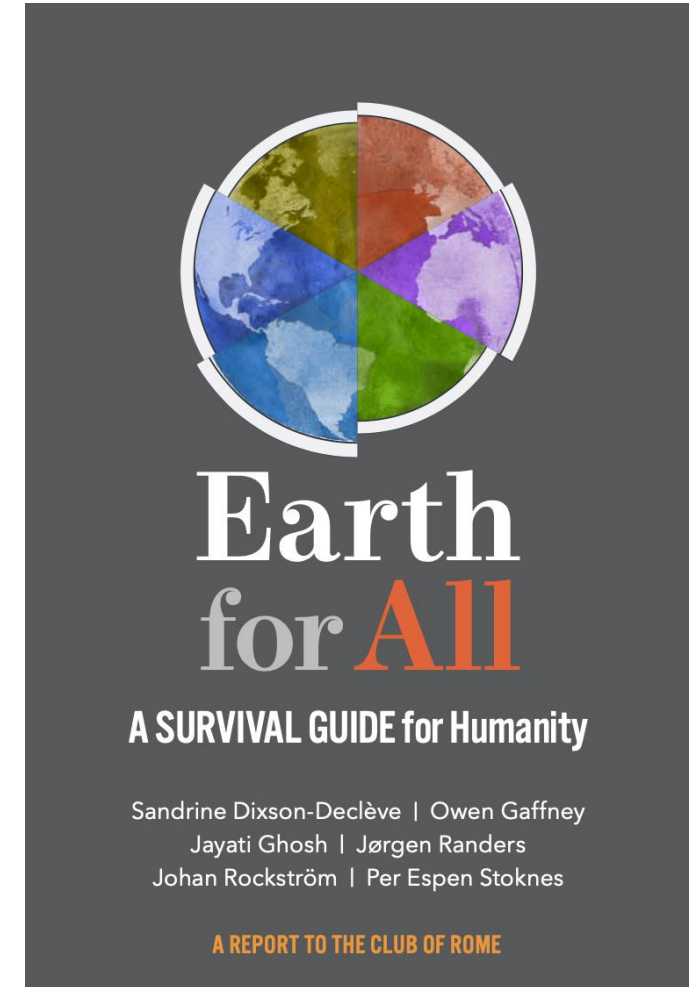
# This is the decisive decade : There is no time for complacency nor despair!



1972



2009



2022



[Visuals and brief — Earth4All](#)

- “There is too much bad news to justify complacency. There is too much good news to justify despair.”