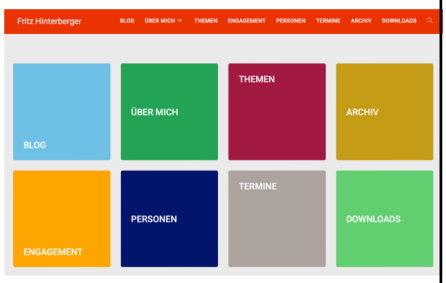
From „Limits to Growth“ (1972)

to „No Limits to Hope“ (2026)

Dr. Friedrich Hinterberger

Mastersymposium "Ethik & Nachhaltigkeit", FH Salzburg, 17.10.2026

Friedrich „Fritz“ Hinterberger



Sustainability researcher

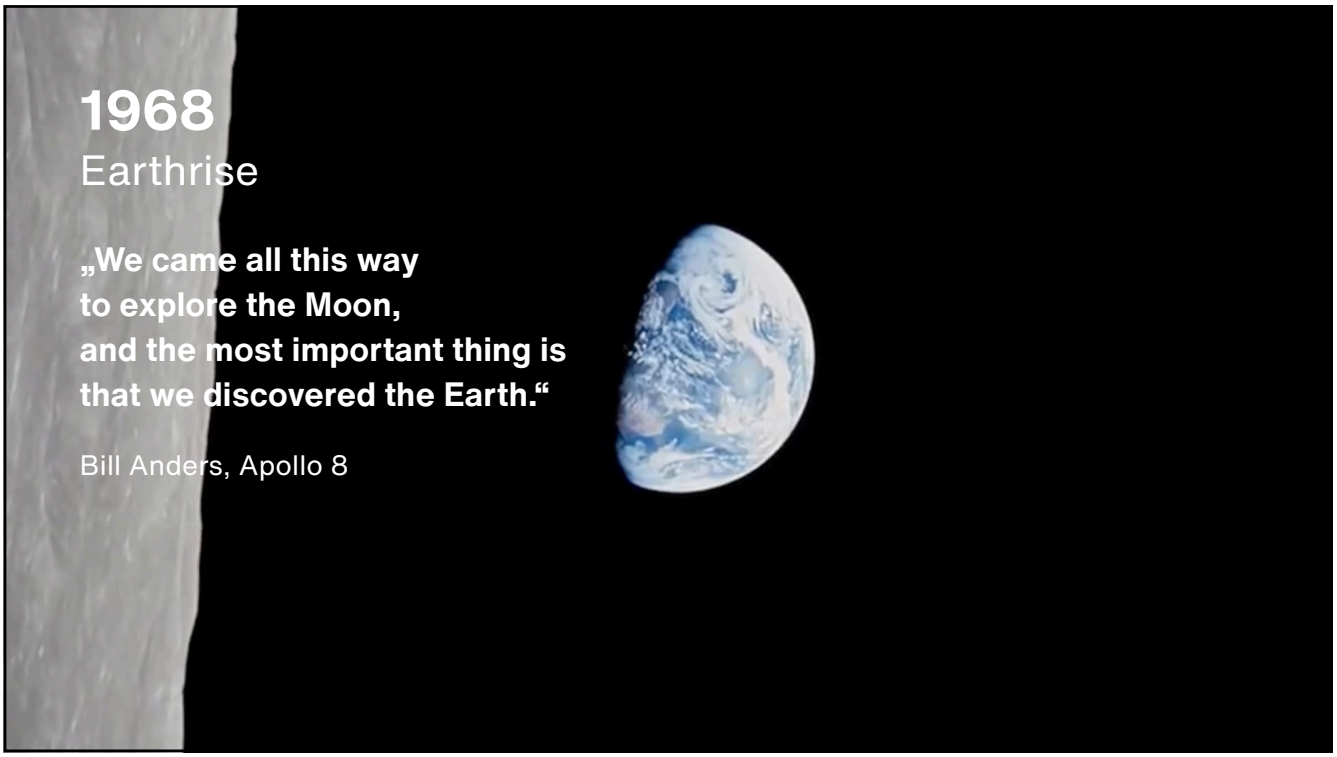
Networker, communicator and **activist**

Member of the **Club of Rome**

https://fritz.hinterberger.com

What I want to achive

- present the **work of the Club of Rome** since 1968
- explain why **materials and the limits to growth matter** today
- show how **progress is possible** while accepting the limits
- elatorate what **learning** requires **in a complex world**



1968

Foundation of the
Club of Rome

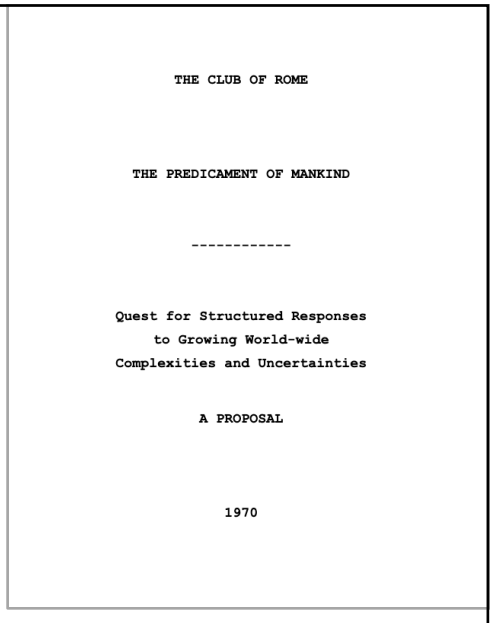
https://www.clubofrome.org

1970

First publication of the Club of Rome

The Predicament of Mankind

When we consider the truly critical issues of our time such as environmental deterioration, poverty, endemic ill-health, urban blight, criminality, etc., we find it virtually impossible to view them as problems that exist in isolation --or, as problems capable of being solved in their own terms. For even the most cursory examination will at least reveal the more obvious (though not necessarily the most important) links between problems. Where endemic ill health exists, poverty cannot easily be divorced from it, or vice versa. Certain kinds of criminal behavior often, though not always, seem to be related to poverty or slum living conditions. Furthermore, if we try to solve any such problems exclusively in their own terms we quickly discover that what we take to be the solution of one category of problem



THE CLUB OF ROME

THE PREDICAMENT OF MANKIND

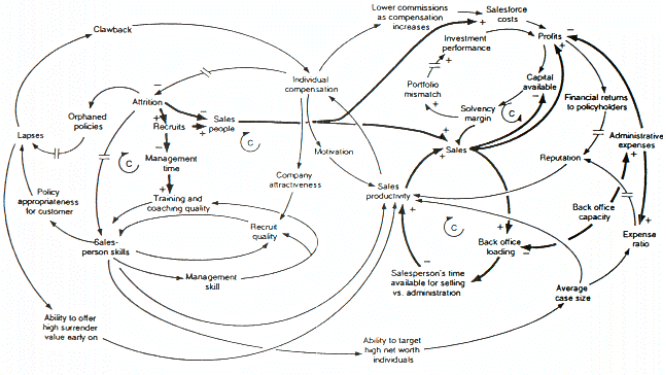
Quest for Structured Responses
to Growing World-wide
Complexities and Uncertainties

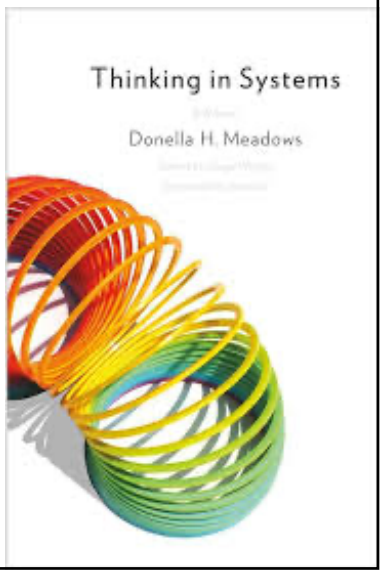
A PROPOSAL

1970

System Dynamics

understanding the nonlinear behaviour of
complex systems over time
using stocks, flows, internal feedback loops,
table functions and time delays.





4 Cs: the great challenges of our time

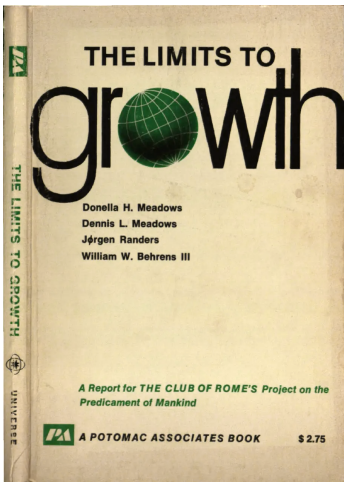
we are facing and need to face

- **C**limate,
- **C**apitalism,
- **C**onflicts and
- **C**omputers (AI)

are systemically intertwined

and need to be tackled together.

From „Limits to Growth“ to an „Earth4All“

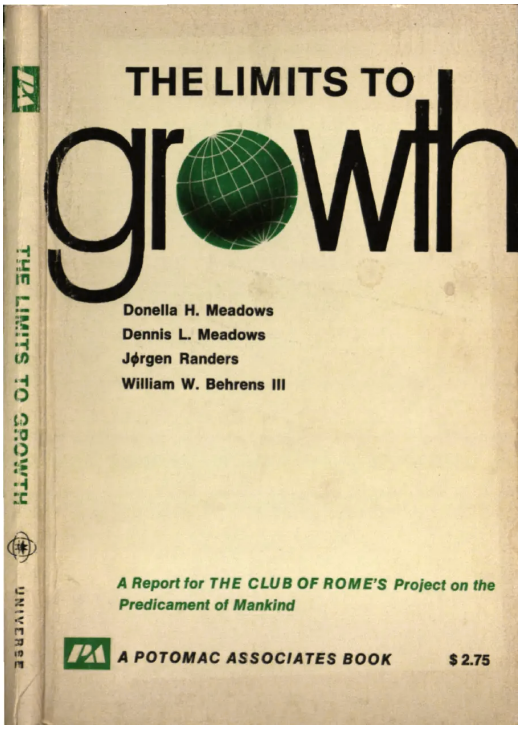




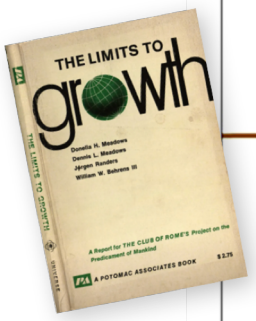
1972

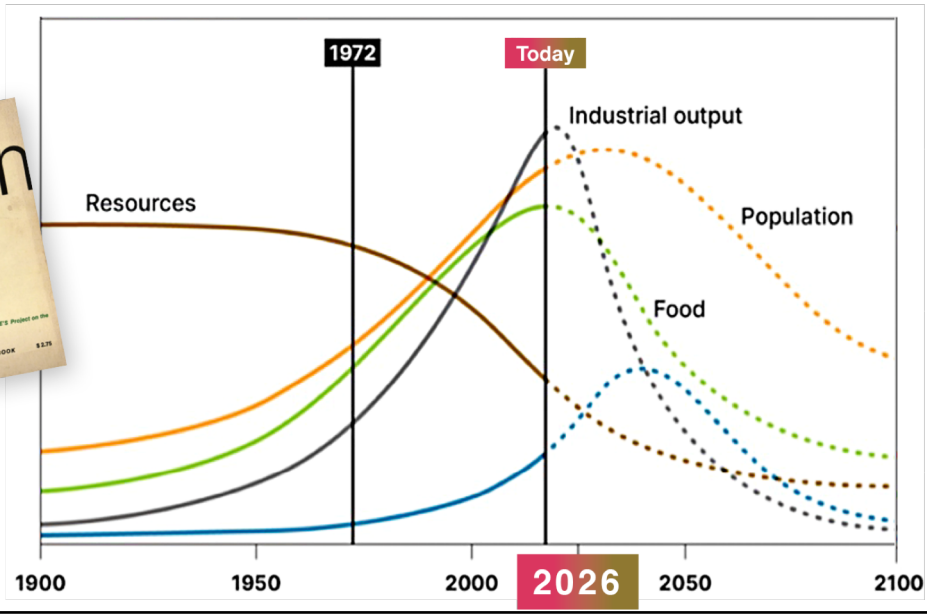
First report
to the Club of Rome

**The Limits
to Growth**



The „limits to growth“ are here to stay



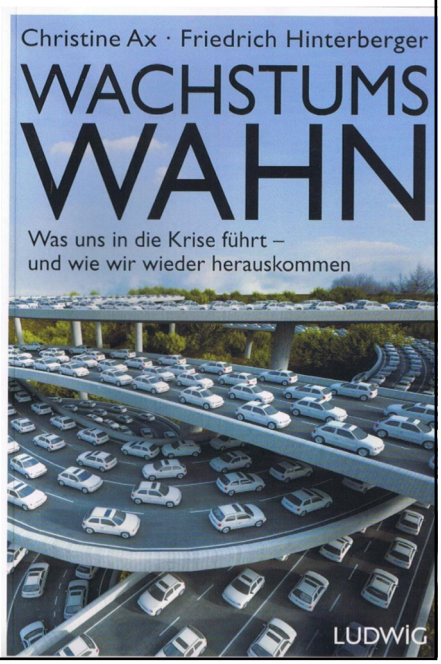


The „Limits to Growth“ become increasingly noticable

Growth is „slowing down“
(= linear, not exponential).

The „growth drivers“ aren‘t driving any more:

- **Supply:** work, capital, natural resources
- **Demand:** consumption, exports, investment and government expenditure




SCHÜTZT
DIE
WELT
NICHT DAS
GELD
Protect the world,
not money.


Survey 2024
Two-thirds of Austrians
value a good life more
than economic growth.

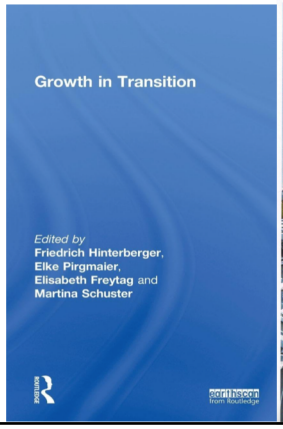
Growth in Transition

Wachstum im Wandel

Despite differing perspectives on growth issues, working together to chart a course towards a positive future and a good life.

- What constitutes a **good life**?
- What should grow, and what should not, what must grow?
- Environmental impact? Quality of life?
- How shall costs and benefits be **distributed**?

https://www.wachstumimwandel.at





Wealth and Wellbeing

The Wellbeing Economy Alliance (WeAll)

Wellbeing Economy Governments
(Schottland, Island, Wales, Neuseeland, Finland)

Community Wealth Building (Scotland) Act 2026

2026 asp 7



„Life itself is wealth!“ (Christine Ax)

https://weall.org/hub/austria

WELLBEING ECONOMY ALLIANCE AUSTRIA

WELLBEING ECONOMY ALLIANCE AUSTRIA

Die Wellbeing Economy Alliance Austria (WEAll Austria) ist ein Zusammenschluss von Organisationen, die sich dafür einsetzen, die österreichische Wirtschaft so auszurichten, dass das Wohlergehen der Menschen, soziale Gerechtigkeit und der Schutz des Planeten zusammengedacht und umgesetzt werden.

WELLBEING ECONOMY ALLIANCE AUSTRIA



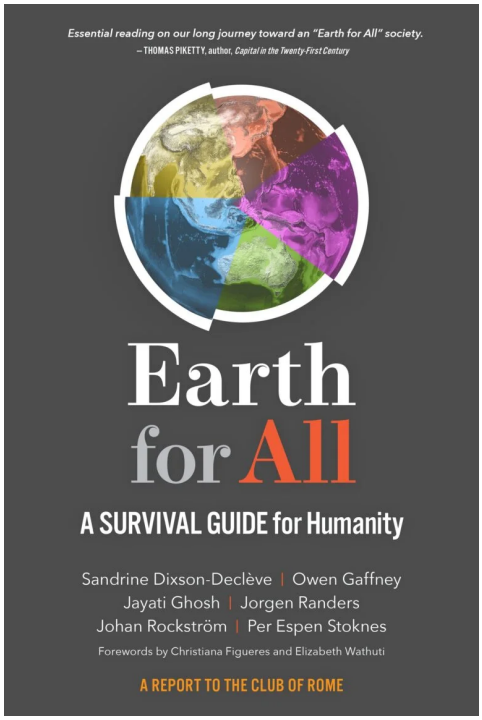
Gründungs- & Partnerorganisationen

2022

Report to the Club of Rome

Earth for All

A Survival Guide for Humanity



The 5 necessary „turnarounds“
to achieve an Earth4All



2024

Club of Rome
Austrian Chapter

Earth for All
Austria

A Survivalguide
for Austria



Earth 4All

The five turnarounds

Inequality	social survival
Food	physical survival
Energy	physical and economic survival
Poverty	physical and global survival
Empowerment	political survival

THE CLUB OF ROME

Earth 4All

The five turnarounds

Inequality	social survival
Food	physical survival
Energy	physical and economic survival
Poverty	physical and global survival
Empowerment	political survival
Materials and Conflicts	globales Überleben

THE CLUB OF ROME

The Role of Materials



Materials matter

Taskforce on materials and consumption to drive sustainable resource use



23 May 2025 – In response to the urgent need for a more sustainable approach to resource use, The Club of Rome and the Hot or Cool Institute have launched a Materials and Consumption Taskforce. The taskforce aims to highlight the critical importance of materials and consumption in the context of the global economic system.

With the world facing growing pressures from resource scarcity, environmental degradation, accelerating climate change and geopolitical tensions, the taskforce recognises that materials and consumption lie at the heart of many interconnected crises. From the escalating demand for critical minerals to the impact of supply chains on climate change and social inequalities, addressing these issues is essential to building a sustainable and resilient future.

Materials:
Capitalism, Consumption and the Environment

- The **economy** needs labor, capital, and raw materials (= **nature**).
- Everything **we consume** is based on raw materials**.**

.

Material Footprint

1 **Smartphone** (150 g)
= **70 kg**

Per person: 20 tonnes/year
= 55 kg/day



Raw materials bring prosperity

- Value creation and jobs. From **extraction** and **production** to **consumption**
  - historically: coal, ore, steel;
  - today: rare earths, "critical raw materials"
- A defining influence on **entire regions**
  (Salzkammergut, Erzberg, Ruhr Valley, Rust Belt ...)
- The emergence of the **trade union movement** and its resulting achievements

But: Profits and damage are unequally distributed.
=> leading to conflicts!

- local
- regional
- global

Raw materials are becoming increasingly scarce

- Rising demand
- Decreasing proportion of usable material increases costs
- Few regulations to protect nature and people in the Global South

=> Mining becomes increasingly aggressive

Exploitation of raw materials as quickly as possible
Hardly any benefits for local populations.

Corporations devour land and leave destruction in their wake.

Biodiversity and Human Rights

Extracting **biotic und abiotic materials** destroys human and ecological habitat.

„Hidden material flows“
do not enter the economy as transactions, but that are **relevant** from an environmental point of view.

- we need to include unused materials and **indirect flows associated with international trade**.



Example gold mine

1 golden ring (5 g)

=

2,5 tonnes of nature!

Example car

(1 tonne)

=

15 tonnes (production)
(plus 8 tonnes in use)



displacement of people, disease and death.

Factor X !

We can and must produce
our prosperity with **a fraction**
of today's raw material consumption.

And we need to **share**
material consumption **more equally**.

=> requires systemic thinking


ELSEVIER

Ecological Economics 29 (1999) 53–56

ECOLOGICAL ECONOMICS

COMMENTARY

FORUM

Dematerialization, MIPS and Factor 10
Physical sustainability indicators as a social device

Friedrich Hinterberger [a,*], Friedrich Schmidt-Bleek [b]

[a] *Wuppertal Institut, Döppersberg 19, Postfach 100480,*
[b] *Factor 10 Institute, La Rabassiere, Ca*

Received 5 June 1997; received in revised form 29 Decemb

In 1992, the concept of material intensity per unit service (or function)—in short MIPS—had been proposed by Schmidt-Bleek as an initial measure for estimating the eco-efficiency (the life-cycle wide environmental impact intensity) of infrastructures, goods, and services. The concept of MIPS includes energy intensities by integrating the material flows associated with energy inputs. The inverse of MIPS is the resource productivity (see Schmidt-Bleek, 1994; Schmidt-Bleek et al., 1998).

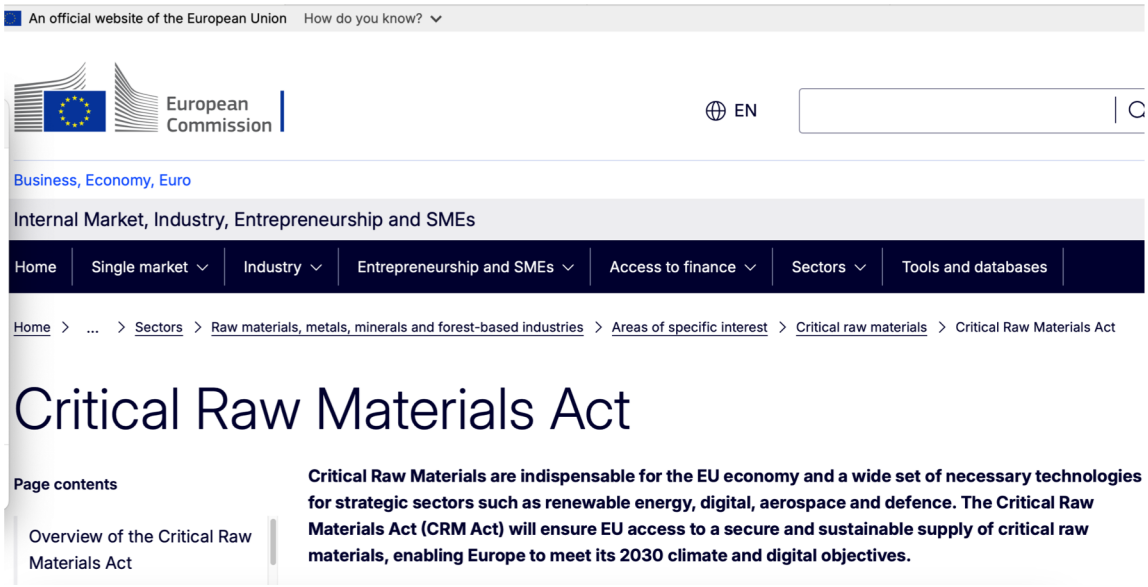
MIPS is computed in mass (of material input MI) per total units of service (S) delivered by the good over its entire life span. Manufacturing, transport, packaging, operating, re-use, re-cycling, and re-manufacturing are accounted for and so is the final waste disposal. It is usually split up into five categories of materials: biotic, abiotic, earth

* Corresponding author. Tel.: +49 202 2492162;
e-mail: fritz.hinterberger@mail.wupperinst.org

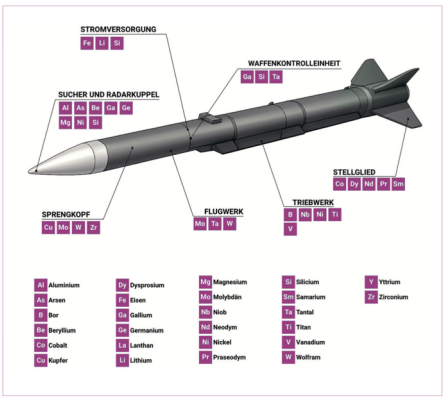
0921-8009/99/$ - see front matter © 1999 Elsevier Science B.V. All rights res
PII: S0921-8009(98)00080-9

FACTOR FOUR
DOUBLING WEALTH, HALVING RESOURCE USE
THE NEW REPORT TO THE CLUB OF ROME
ERNST VON WEIZSÄCKER
AMORY B LOVINS • L HUNTER LOVINS

Materials for „clean energy“...

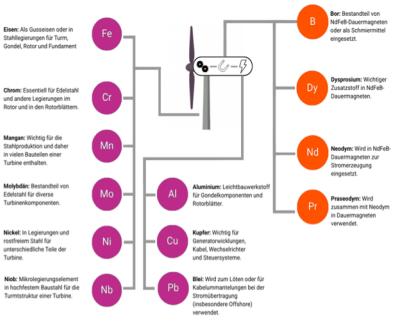


... or arms?



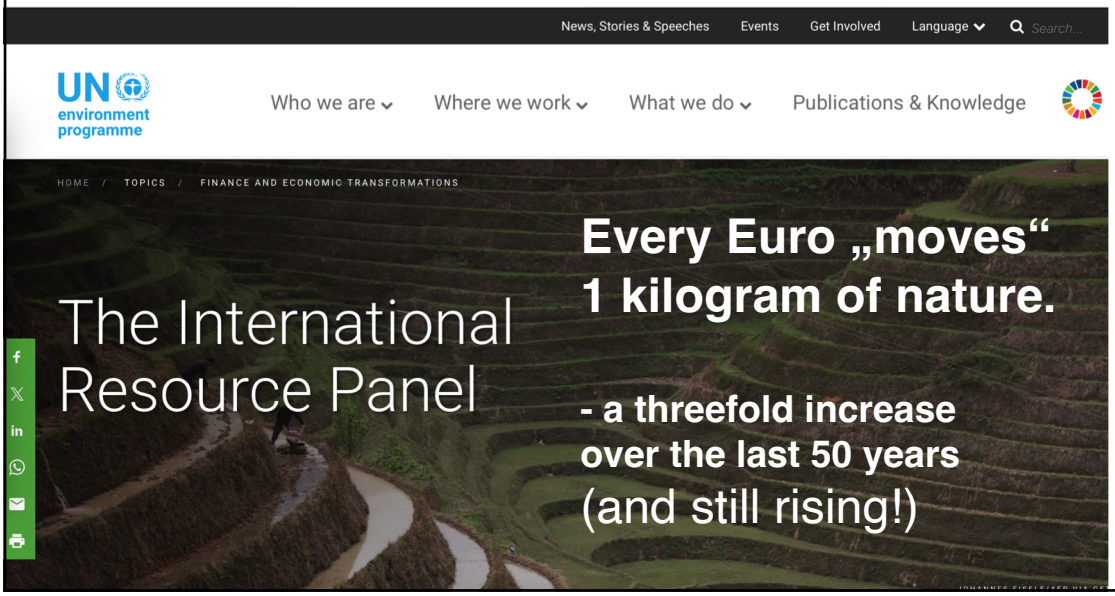
Source: Hackett et al. (2025):
Critical Raw Materials and European Defence.
International Institute for Strategic Studies

Missiles and windmills...



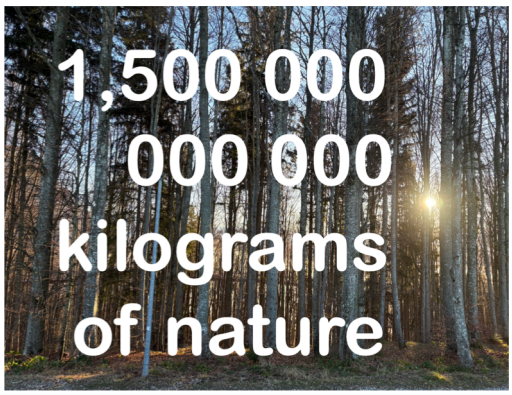
... share the same need for materials!

Sustainability: more than „Energy“ and CO_2



The military‘s hunger for materials

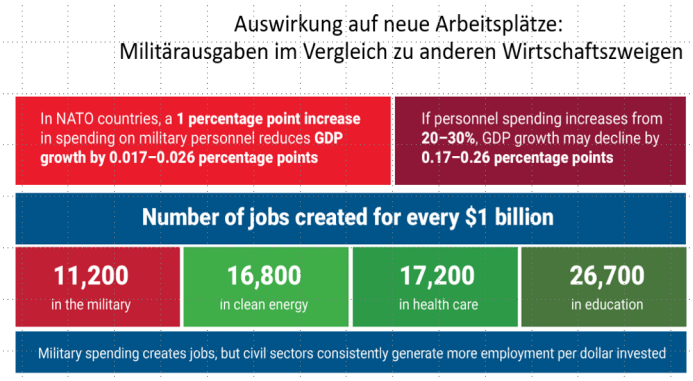
More than



is extracted every year
for **military purposes.**

Armaments as a Growth Engine ?

- Business and politics are discovering the arms industry as a driver of growth
- This comes **at the expense of other sectors** (environment, education, healthcare)...
- ... and creates **hardly any jobs**

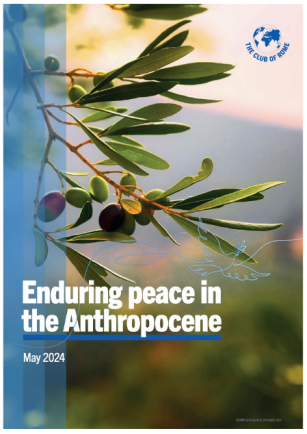


Source: UN (2025): The Security We Need

War of peace?



Planetary Peace!





Are we still Human in the face of Gaza?

05 June 2025 - The deliberate starvation, displacement and systematic destruction of the people of Gaza and the very conditions necessary for their survival is not war. It is not a war against Hamas. It is an abomination. It is cruelty in its most calculated form—a slow and ...



Beyond the absence of war: Pathways to peace in the Anthropocene

21 August 2025 - In a world increasingly defined by climate disruption, biodiversity loss, rising inequality and the accelerating risks of AI and emerging technologies, The Club of Rome is calling for a fundamental rethinking of what peace means today. Its new paper, Planetary ...

From „No Limits to Learning“ to „No Limits to Hope“



COR Conference, Salzburg, Opening Session, 06.06.1979: Jim Botkin, Mircea Malitza, Aurelio Peccei, Madhi Elmandjra,
President of Austria, Dr. Rudolf Kirchschläger

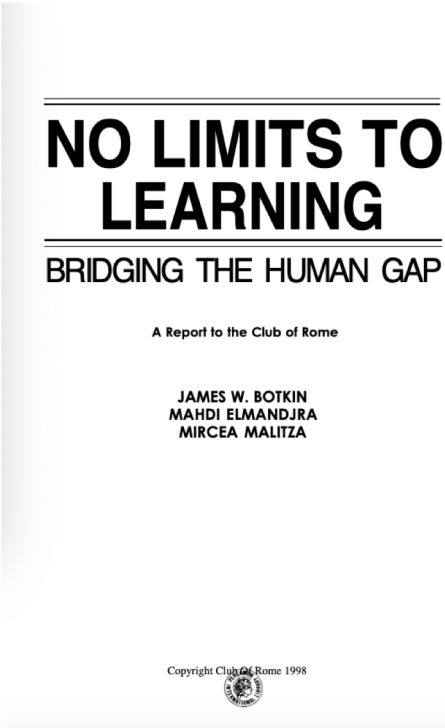
1979

Report to the Club of Rome

„No Limits to Learning“

based on
- anticipation
- participation.

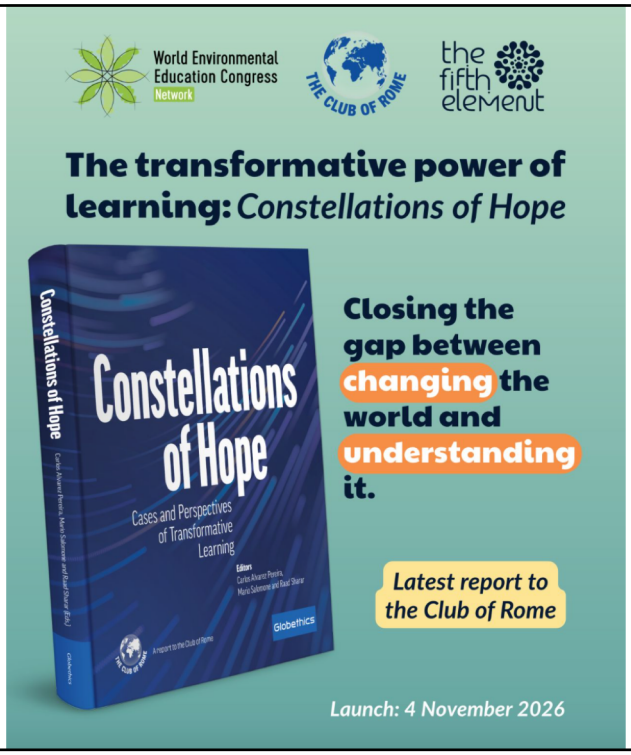
It described the gap between the systemic complexity of our world and the human capacity to deal with it as the "**human gap**", which needs to be closed.



2026

Upcoming report to the Club of Rome

No Limits to hope



From Bucharest (2026) to Salzburg (2027)!



External and internal dangers

external : climate, conflicts, war, inflation, diseases, AI...

internal: crisis of social cohesion and liberal democracies

The external risks
- push internal issues into the background
- devour vast amounts of money and resources
(these are then lacking for social and environmental concerns).

Therefore:
Environmental problems, social problems, and armed conflicts
must and can be solved together.

Indicators for regeneration

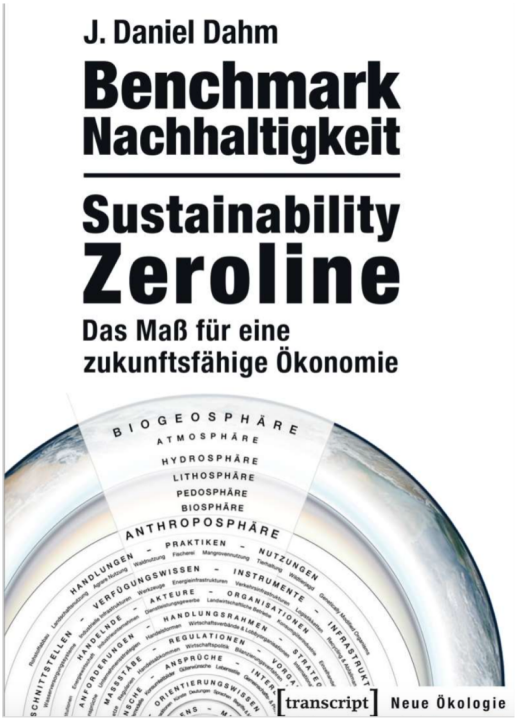
More than Sustainability

- realizing **good sustainable impacts** by investing into the generation of common livelihoods
- scaling good impacts up for an ecological resilient and life-worthy, just and peaceful world

*„ Sustainability, in the sense of **future viability**, unites the stabilization, development, protection and integrity of our shared foundations of life and the living diversity of evolution with humankind.*

Daniel Dahm

https://unitedsustainability.com



Thinking in Systems means

I am not alone when I want to achieve something

&

I can contribute from anywhere in the system.

The **four systemic levels of change**

- **m**icro
- **m**eso,
- **m**acro
- **m**eta

are systemically intertwined.

Macro: We need a better economic understanding

Some emerging fields:

Donut Economics (Kate Raworth)

Foundational Economics (Alltagsökonomie)

Circular Economy

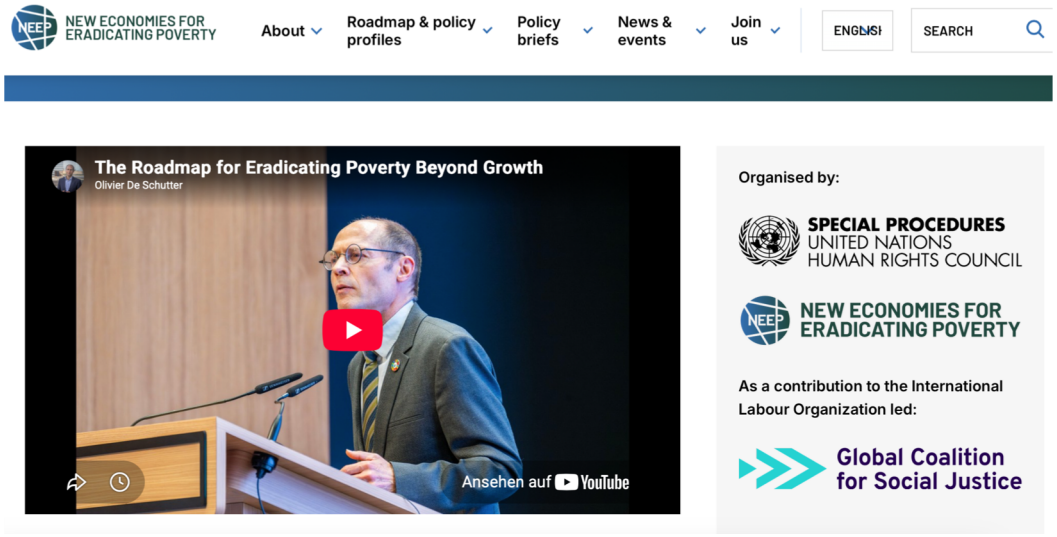
Feminist / care economics

Mission orientation

New comprehensive indicators



Macro: 80 Policy proposals beyond growth



Micro: active management

How active management,
in the face of increasingly apparent
"limits to growth", **enables a prosperous future for businesses and society**.

- Rethinking sustainability for the future
- Hybrid intelligence
- The role ethics and transdisciplinarity
- Wellbeing as a key to holistic sustainability
- CSR for peace

https://www.csr-verband.org/

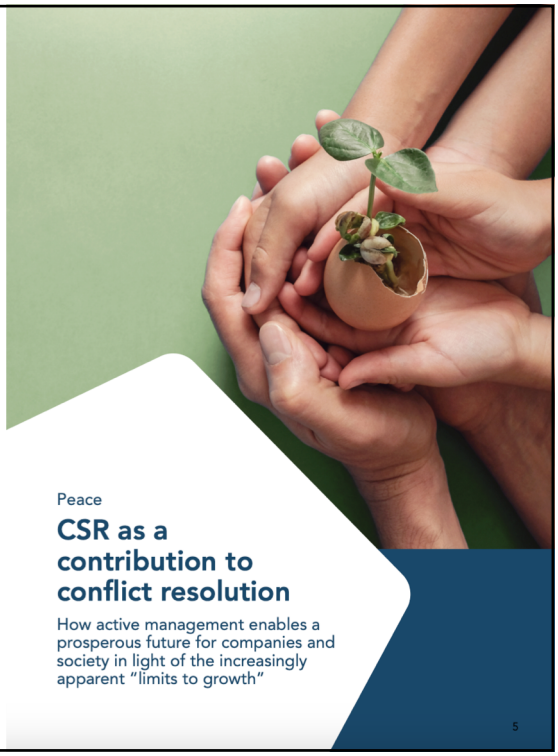


Micro: CSR for peace!

Fair distribution of resource costs and benefits on local, regional and global levels enhances **sustainability and peace**.

- **Positive contributions** for people and nature
- Anchoring (measurable) **goals in the company**
- **Deriving indicators from goals** (not the other way around)

https://www.csr-verband.org/



From „either-or“ to „both-and“

Rene Schmidpeter:

- Circular economy enables regional value creation and requires communication/cooperation.
- Technology/Mindset/Networks
- New thinking, arts und design

https://www.bfh.ch/de/ueber-die-bfh/personen/ccpbeqqmiiv4/

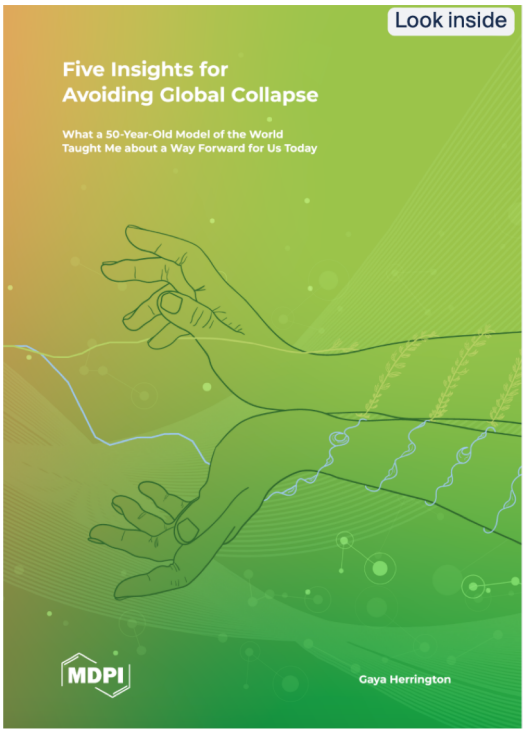


Meso: Bioregionalism

Gaya Herrington

„We are on the verge of collapse“

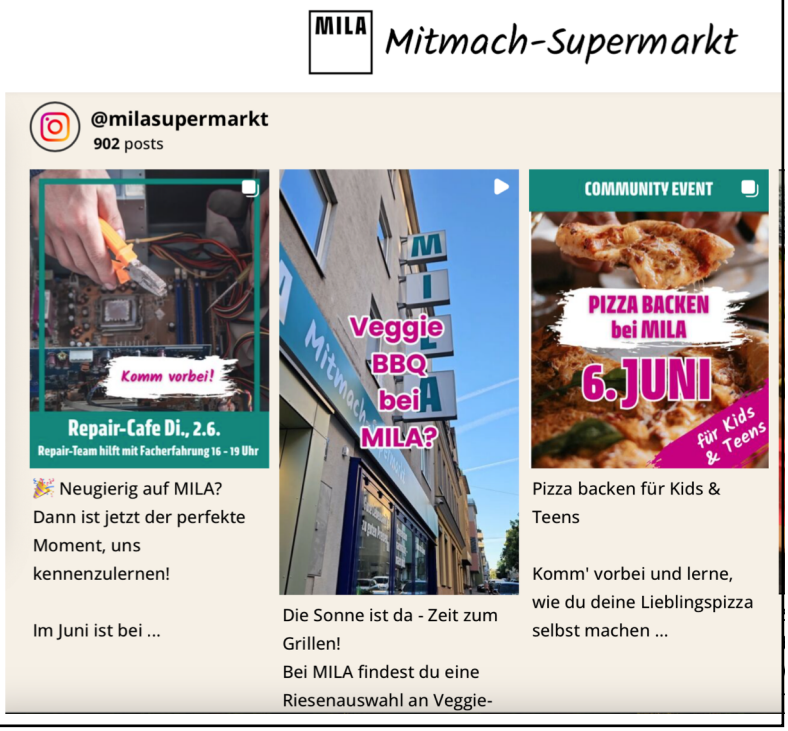
- We are inextricably linked;
- Growth is not a sustainable goal;
- We must reset our priorities;
- Time is running out;
- **The end of growth does not mean the end of progress.**



Example MILA

- a cooperative of people working for their own better shopping
- good quality and prices
- 3 hours/month of work
- collaborative decision making
- ...

https://www.mila.wien



Example WaLeWi

walewi GEMEINSCHAFTLICHES WACHSEN • LEBEN • WIRKEN

Verein für gemeinschaftliches Wachsen, Leben und Wirken
ZVR-Zahl: 1728857185
E-Mail: office@walewi.at
Website: www.walewi.at

- an association of people working for their own **better living**
- **affordable housing** together
- **sociocracy**
- **affecting** the neighborhood
- ...

https://www.walewi.at





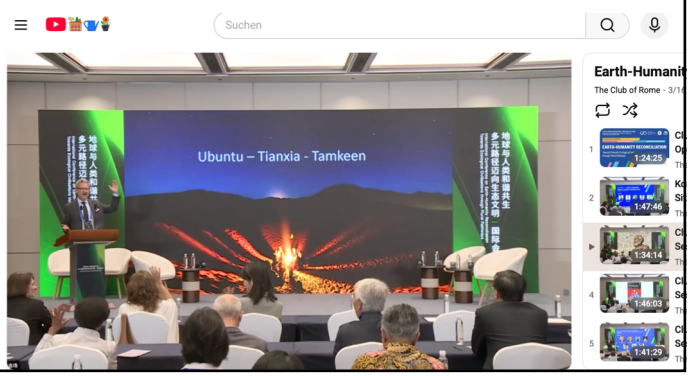
Meta: How we see and communicate about the world

Luis Klein

„System Wisdom“

- UBUNTU:
  „I am, because we are“
- TIAN XIA.
  „Embrace the whole“ (as if)
- TAMKEEN
  „Developing a shared understanding“

https://www.youtube.com/watch?v=_D6SpcZrx2k_&list=PLSVaEtHMi2FN-eTowlqDI2Rap127fbH3g&index=4





A Time of Great Consequence: A Manifesto for Bridging Knowledge and Action

Institutions become transformative when they learn together with the communities they support, listening across **differences**, remaining **accountable** to those affected by their decisions, **anticipating** emerging challenges, and **adapting** as conditions change.

It‘s the process: 5 Steps

- Best available knowledge
- Mourn and accept the existence of crises
- Understand the systemic connections
- Set concrete goals for a good life
- Work together to achieve them
- Celebrate what has been achieved!

wellbeing.jetzt
Wellbeing im Salzkammergut

https://salzkammergut.wellbeing.jetzt

https://wachstumimwandel.at/imagine-the-pluriverse/



Imagine all the People

Imagine there's no heaven
It's easy if you try
No hell below us
Above us only sky

Imagine all the people
Living for today

Imagine there's no countries
It isn't hard to do
Nothing to kill or die for
And no religion, too

Imagine all the people
Living life in peace

You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will be as one

Imagine no possessions
I wonder if you can
No need for greed or hunger
A brotherhood of men

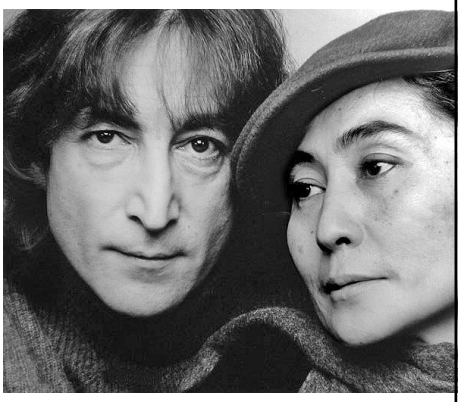
Imagine all the people
Sharing all the world

You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will live as one

© John Lennon and Yoko Ono



© Fibonacci



© Jack Mitchell

Join me on Substack !

Mourning and fighting for the glaciers
Arts and activism against mining in Argentina, Austria and everywhere
APR 14 · FRITZ HINTERBERGER



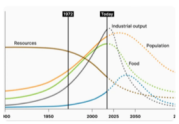
We gotta live the change.
But where to and how?
MAR 11 · FRITZ HINTERBERGER



Damage of war and before
... and after
MAR 3 · FRITZ HINTERBERGER



The Limits to Growth are Here to Stay
an economic view
FEB 23 · FRITZ HINTERBERGER



Security and peace



Blogposts by Fritz
Various observations and ideas

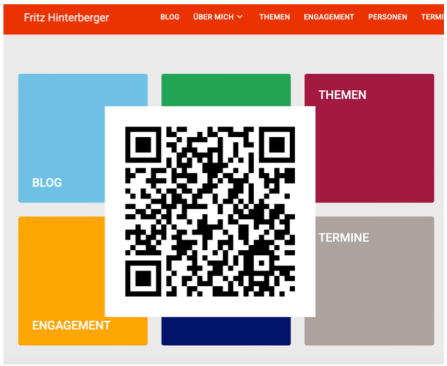
Subscribed

Recommendations

- Thinking about... — Timothy Snyder
- ESG on a Sunday — Beslik Sasja
- Paul Krugman — Paul Krugman
- The Seneca Effect — Ugo Bardi

Danke, thank you ... !

The presentation is available here for **download**:



https://fritz.hinterberger.com

THE CLUB OF ROME

fritz@hinterberger.com