



CENTRE FOR
SUSTAINABILITY AND ENERGY

From *The Limits to Growth* to *Earth for All* **- a sustainability perspective**

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Saxon Sustainability Congress
Chemnitz, November 4, 2022,

THE LIMITS TO GROWTH

The book is making headlines in the western global press. It is a study of what we can do about the future of the world. On the front page of the New York Times.



Die Grenzen des Wachstums

Bericht des Club of Rome* zur Lage der Menschheit



*Friedenspreis des Deutschen Buchhandels 1973



svun at



Les limites du développement

A report for the CLUB OF ROME'S project on the predicament of mankind

如月の限界

Club of Rome Report
The Limits to Growth
A report for the CLUB OF ROME'S project on the predicament of mankind



THE LIMITS TO growth

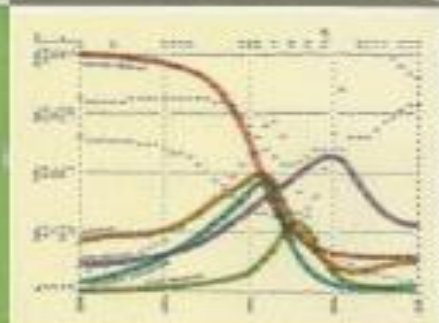
Donella H. Meadows
Dennis L. Meadows
Jørgen Randers
William W. Behrens III

A Report for THE CLUB OF ROME'S Project on the Predicament of Mankind



A POTOMAC ASSOCIATES BOOK

\$ 2.75



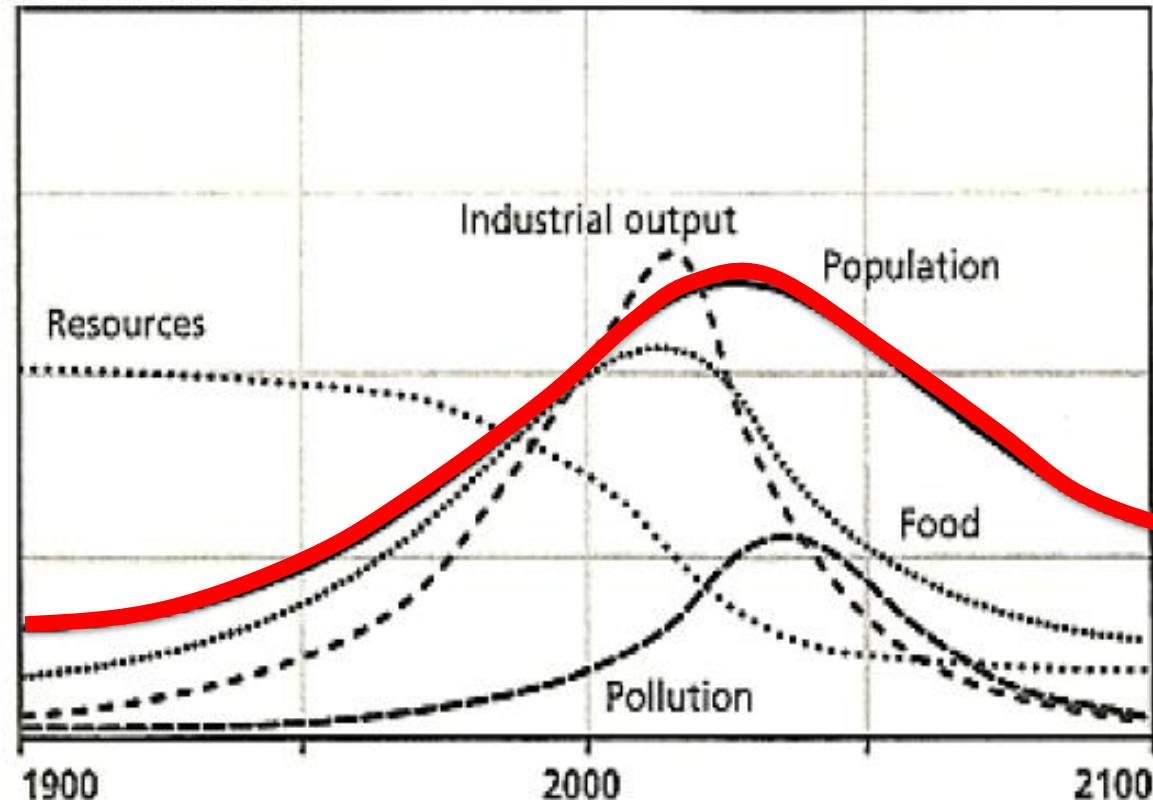
I LIMITI dello SVILUPPO

rapporto del System Dynamics Group
Massachusetts Institute of Technology (MIT)
per il progetto del Club di Roma
sui dilemmi dell'umanità

Biblioteca della EST
EDIZIONI SCIENTIFICHE E TECNICHE
MILANO

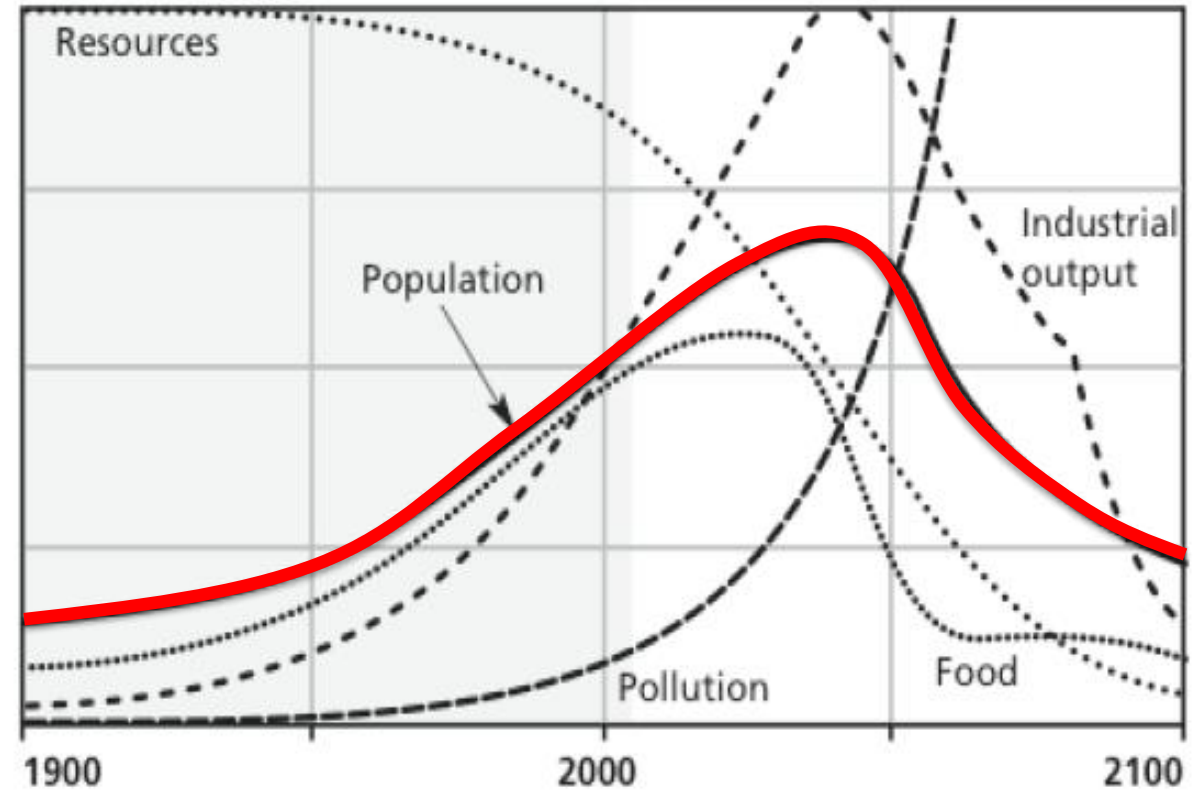
Two sad (“collapse”) scenarios from *The Limits to Growth*

State of the World



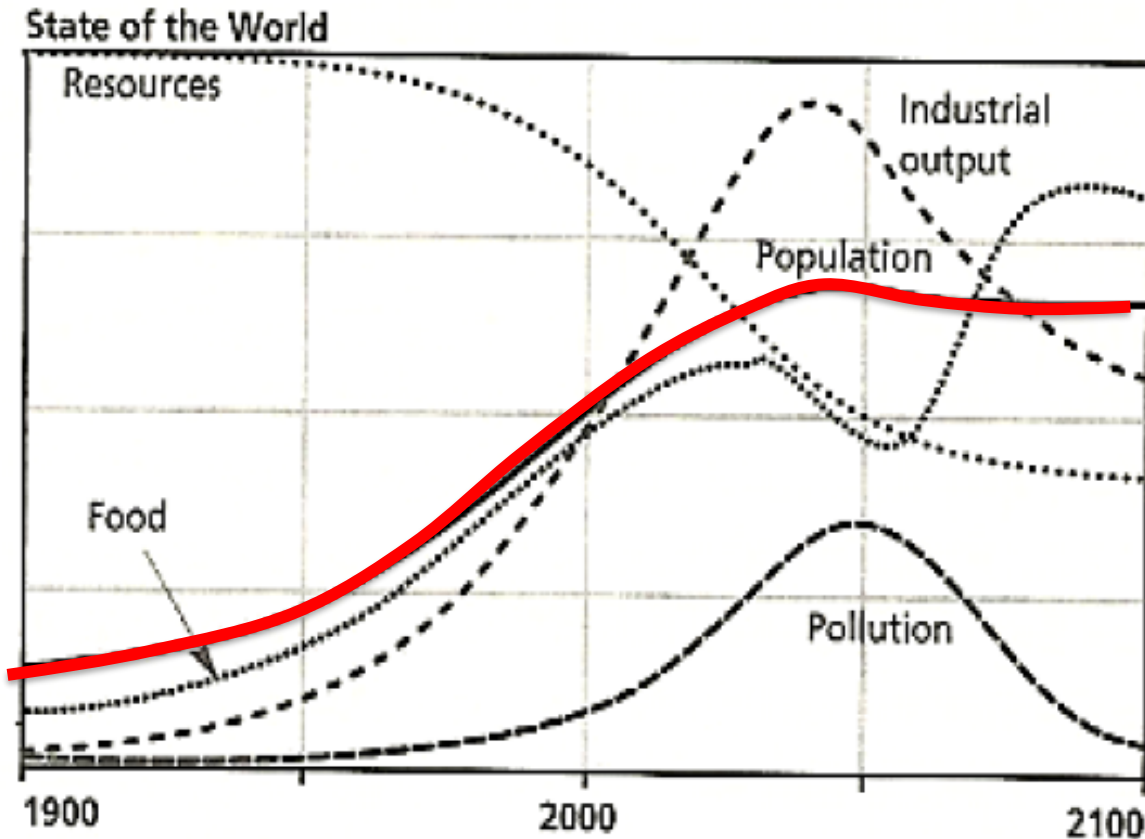
Sc 1 : Business as usual (BAU)
Resource collapse

State of the World

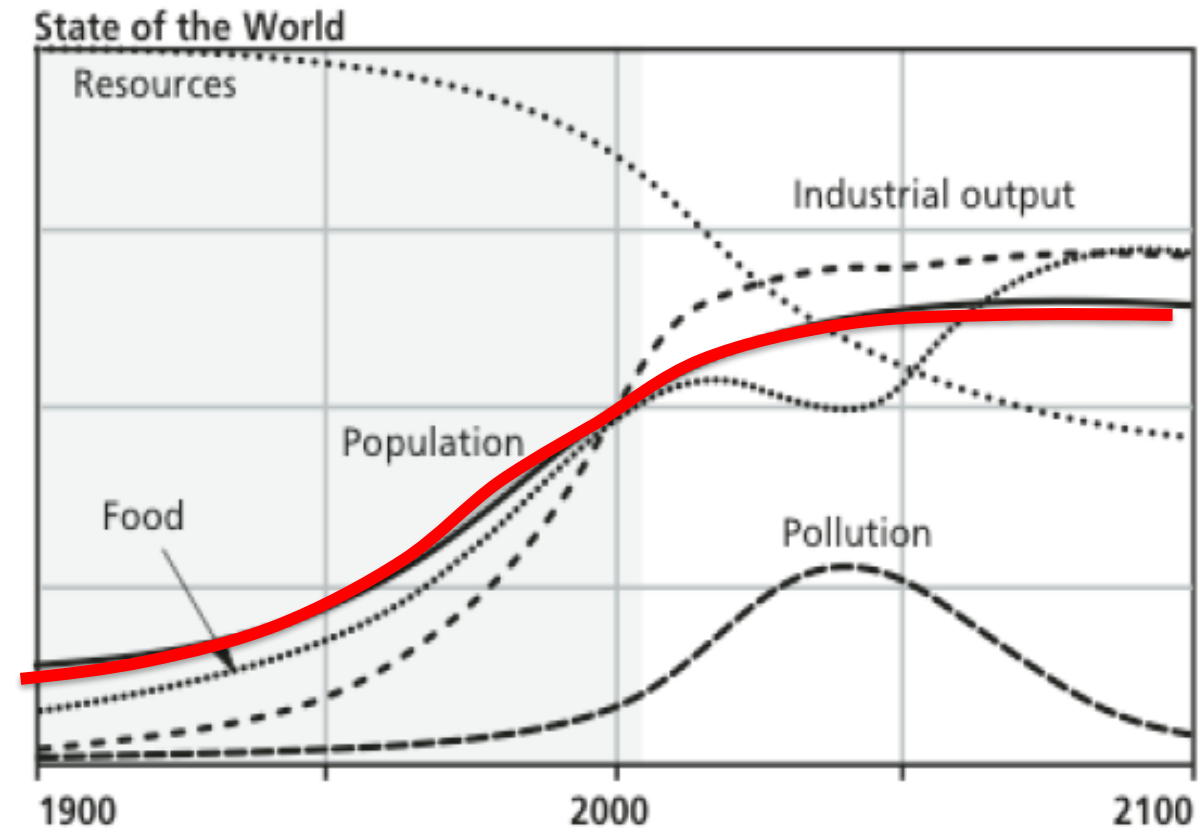


Sc 2 : Double resources (BAU2)
Pollution collapse

Two happier (“more sustainable”) scenarios from *LTG*



Sc 8: Comprehensive technologies.
No population decline, but material collapse.



Sc 9 : Stabilized world (tech plus social change).
No population, nor material, decline.

Population has grown, like in *LtG*

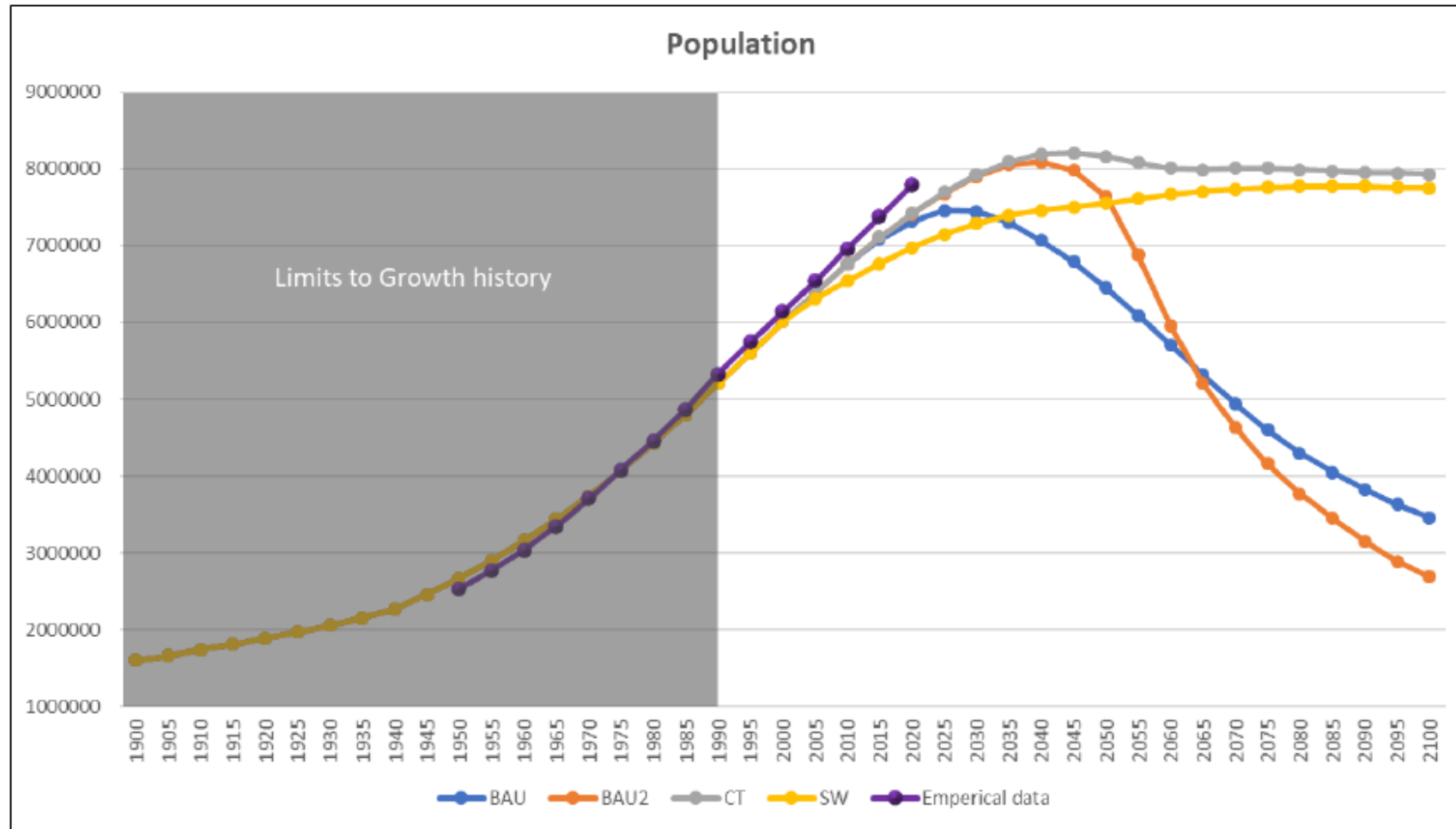


Figure 9. Scenarios and empirical data for population (in thousands of people).

Industrial output has grown, *like in LTG*

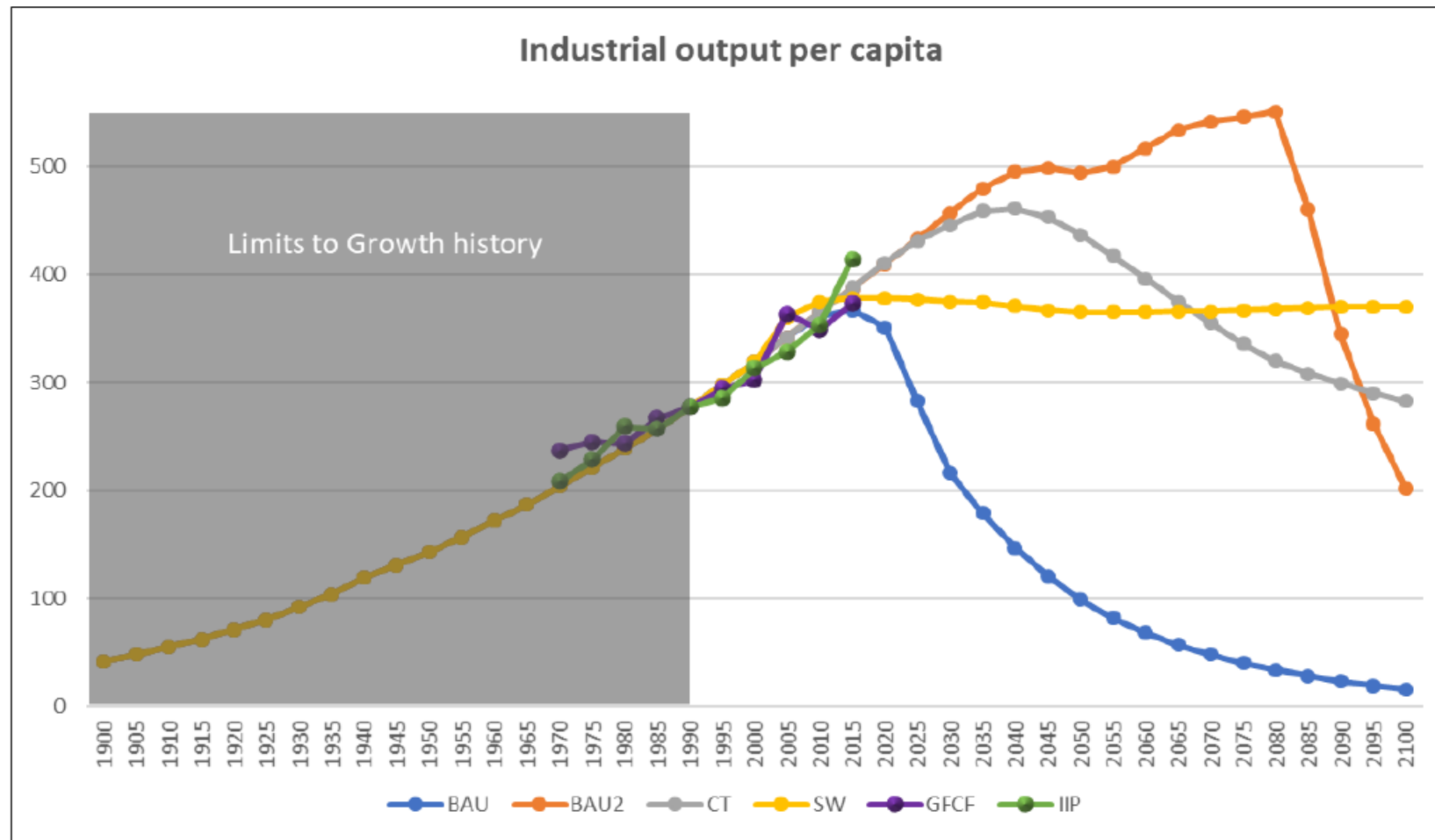


Figure 15. Scenarios and empirical data for industrial output (gross fixed capital formation and index of industrial production).

Wellbeing is slowing, *like in LTG*

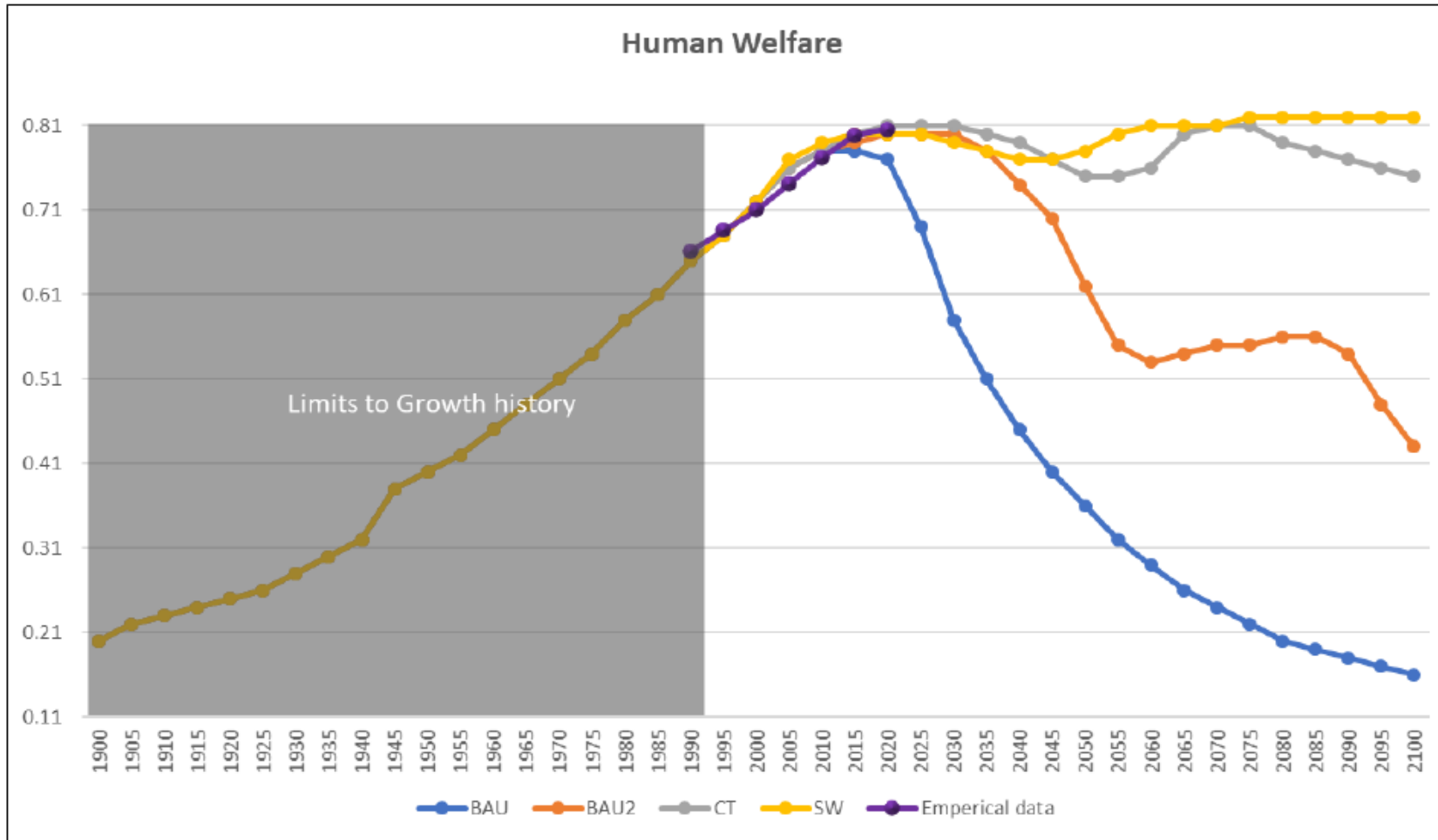
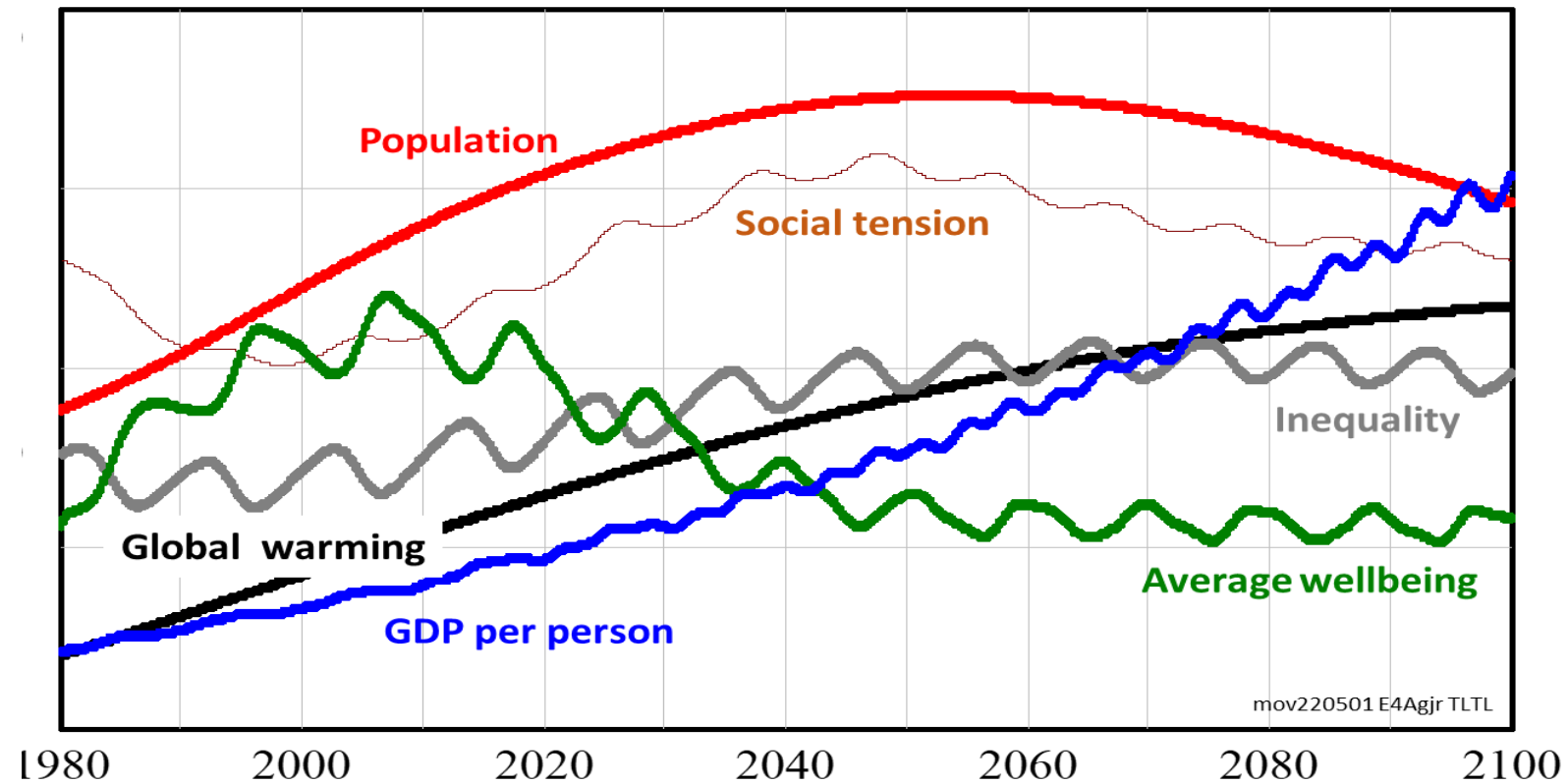
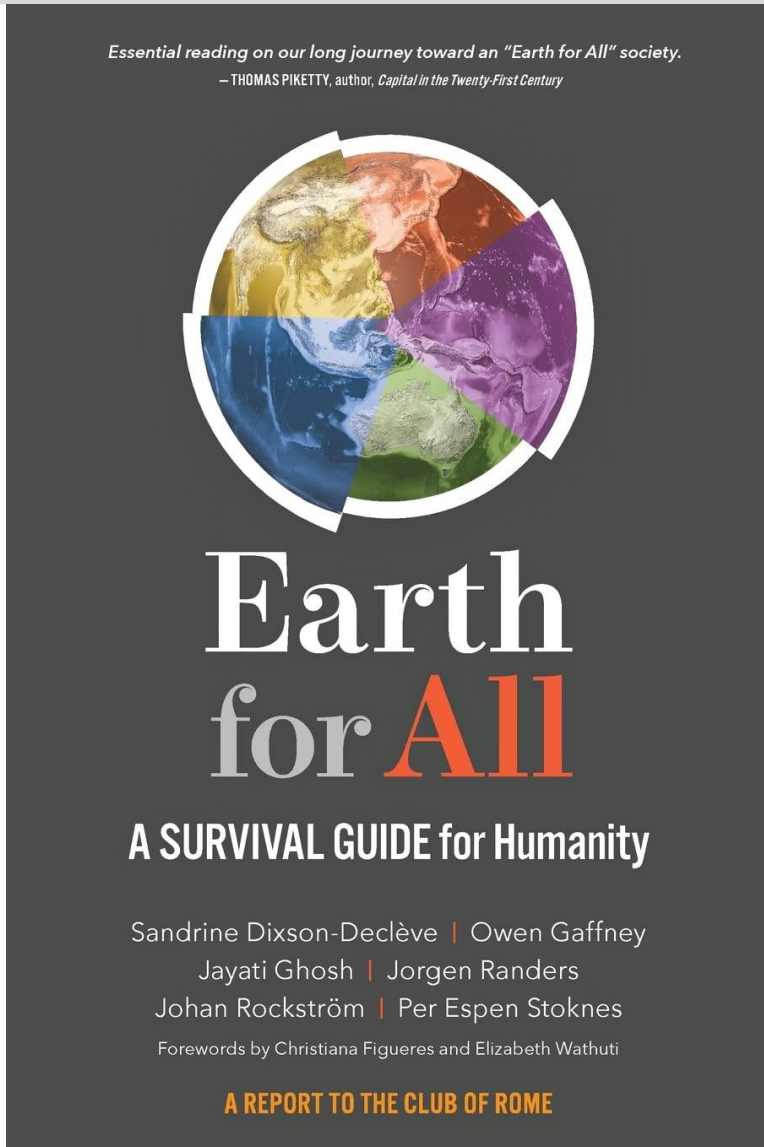


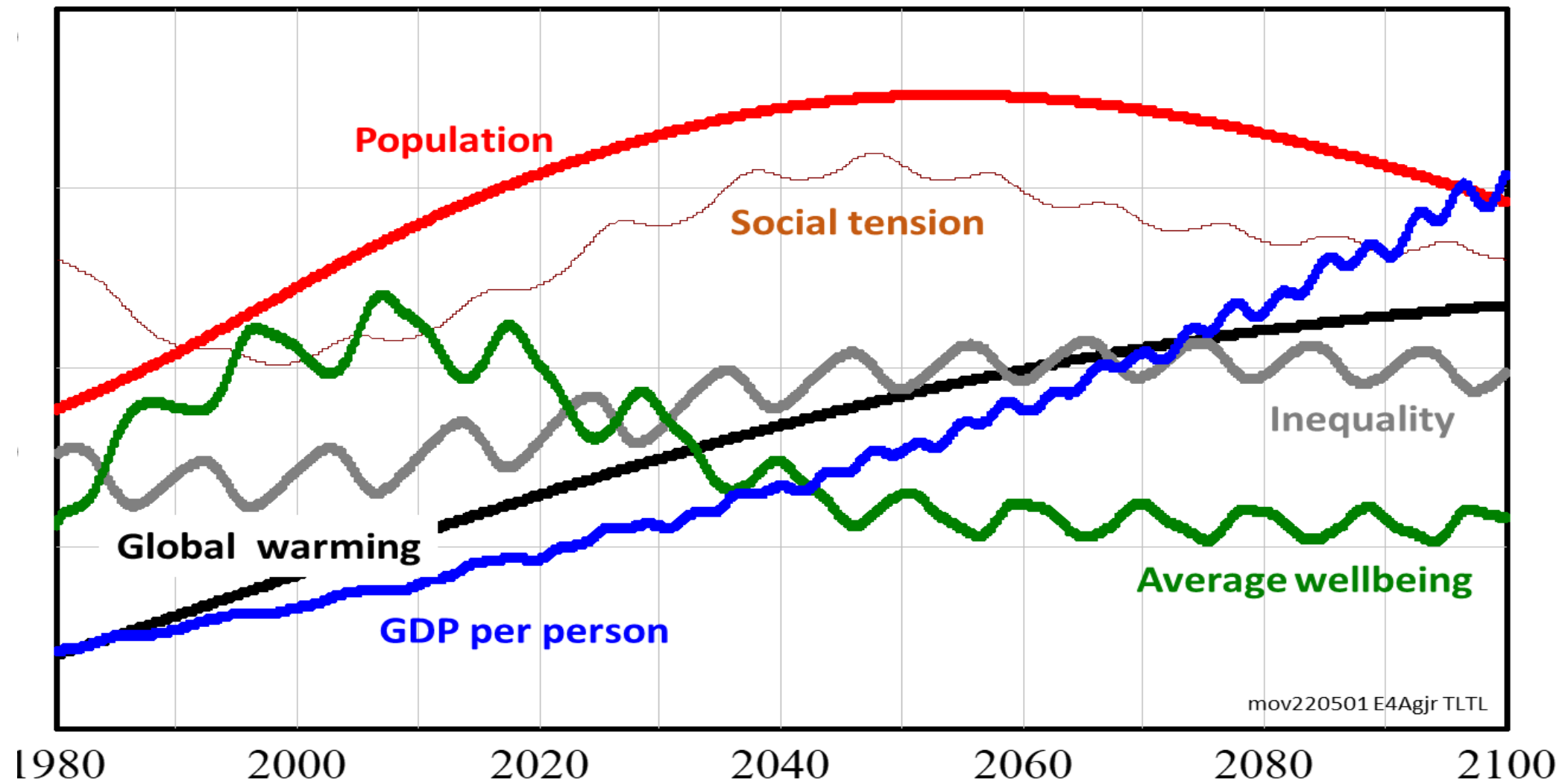
Figure 17. Scenarios and empirical data for welfare (UN Human Development Index).

50 years after *The Limits to Growth: Earth for All* (Sep 2022)



www.earth4all.life

Main trends in global development – «Too-Little-Too-Late»



The E4A *Average Wellbeing Index* depends on

1. Worker disposable income per person – after tax
(in 2017 PPP \$ per person per year)

2. Public spending per person
(in 2017 PPP \$ per person per year)

3. Equality

(Owner disposable income divided by worker disposable income)

4. Environmental quality
(Global warming in degrees Centigrade since 1850)

5. Perceived progress
(The rate of increase in wellbeing during last 5 years)

The 5 Turnarounds in *Earth for All*

1. Poverty

More plan and less market in economic development

2. Inequality

Transfers from the few rich to the many poor

3. Empowerment

Education, health, contraception, and opportunity to all women

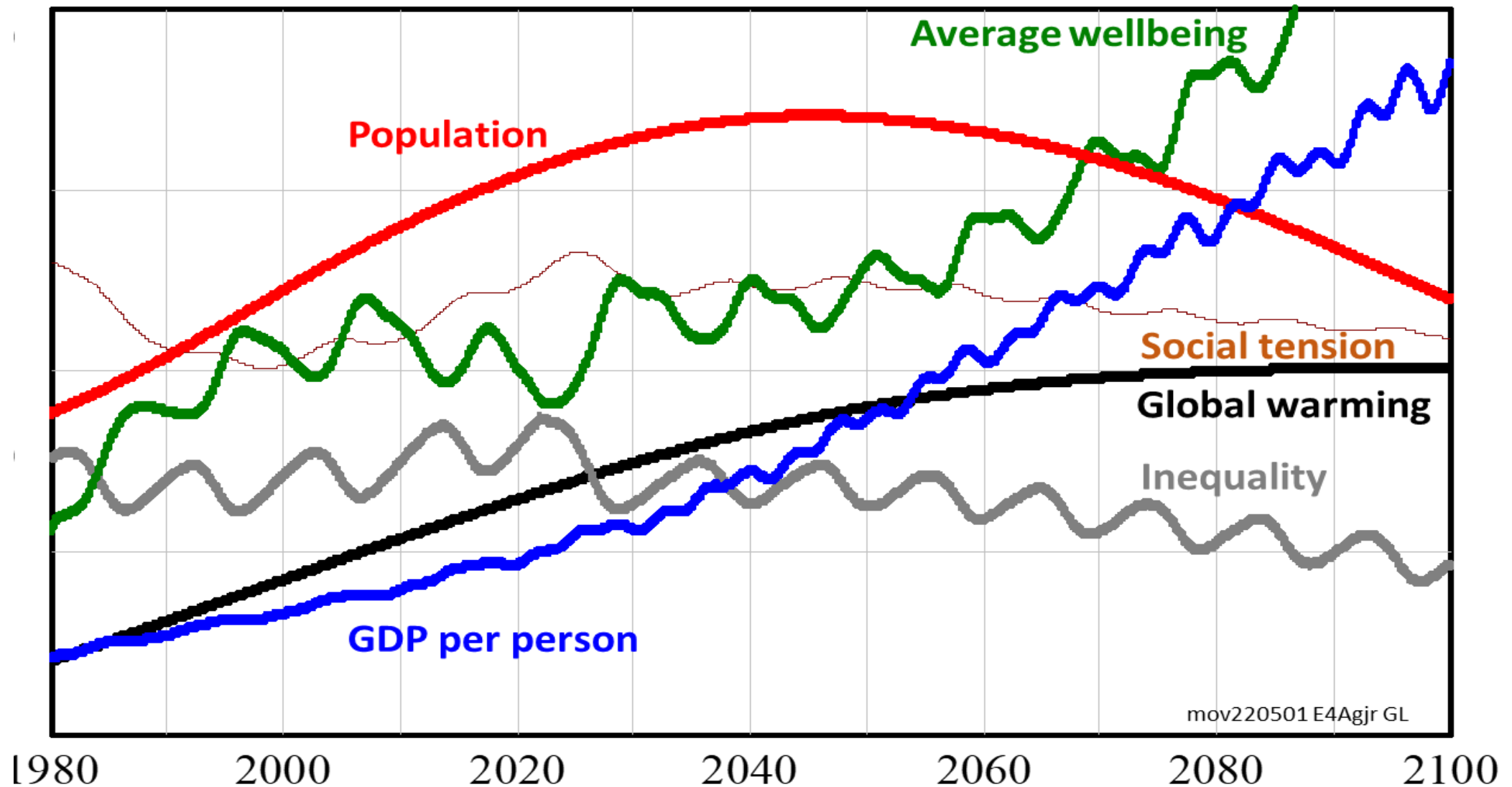
4. Food

Regenerative agriculture, higher efficiency, fairer distribution

5. Energy

Shift from fossil fuels to renewables, higher efficiency, CCS

Main trends in global development – «Giant Leap»



The 5 Turnarounds in *Earth for All*

1. Poverty

More plan and less market in economic development

2. Inequality

Higher transfers from the few rich to the many poor

3. Empowerment

Education, health, contraception, and opportunity to all women

4. Food

Regenerative agriculture, higher efficiency, less red meat

5. Energy

Shift from fossil fuels to renewables, higher efficiency, CCS

How can the government pay for the Giant Leap?

1. Higher taxes

The new tax must be levied on the rich minority in order to be supported by a political majority

2. More borrowing

More long-term debt give higher interest costs to current taxpayers and shift the real cost to future generations

3. Printing money

The central bank can provide the government with “fresh” money earmarked for green projects (“green stimulus packages”)

Conclusion

**The world has a sustainability challenge:
The prospect of declining wellbeing in the decades ahead -
caused by global warming and rising inequality.**

The problem can be solved.

**But achieving a sustainable world
will require 5 extraordinary turnarounds -
paid for by the 10 % richest
in order to be politically feasible.**

Five extraordinary “Turnarounds” would help

