

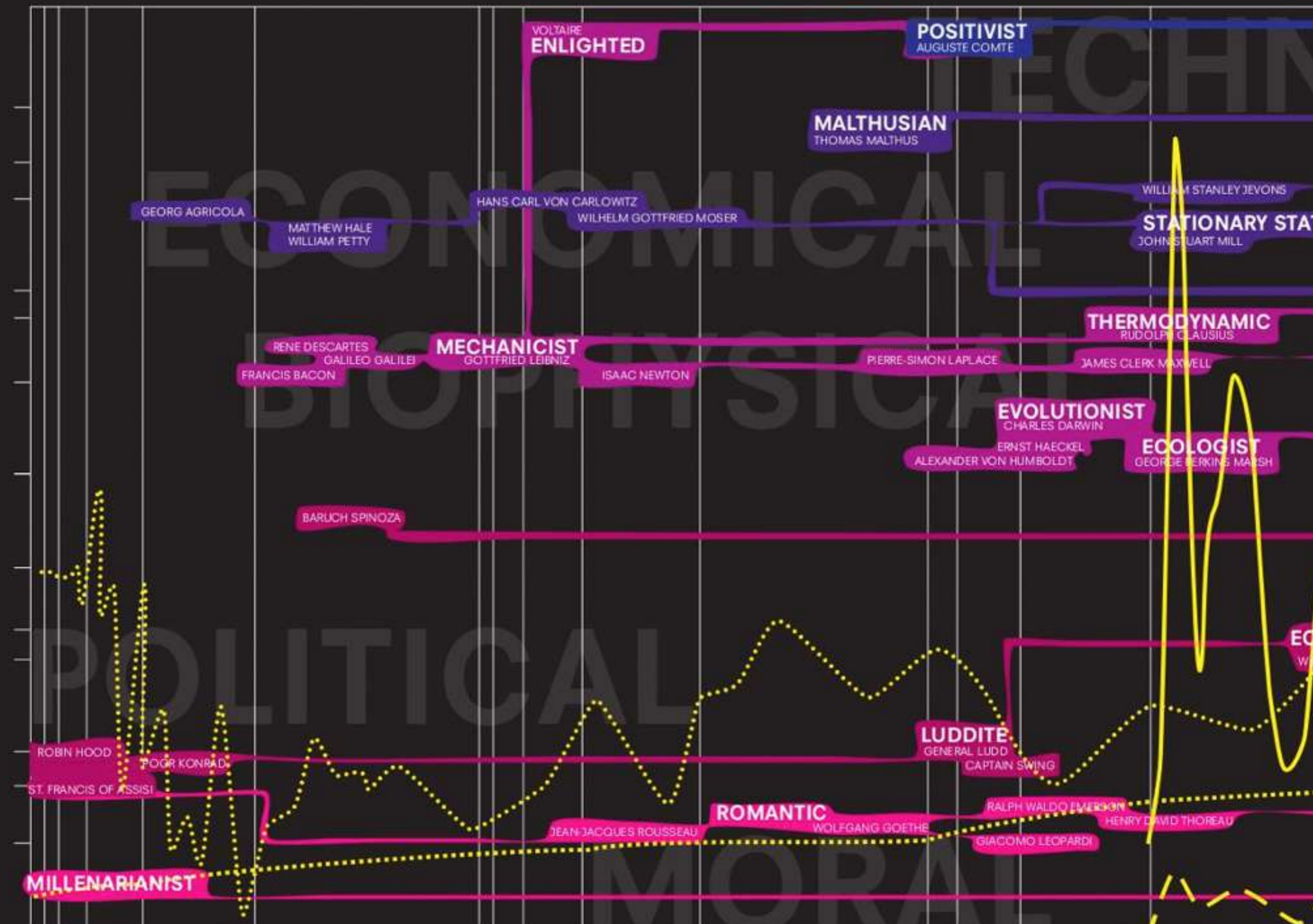


Sustainability

The Transition to Sustainable
Societies

David Crossley, Houston Tomorrow

1000 1500 1600 1700 1760 1780 1800 1840 1860



1000 1500 1600 1700 1760 1780 1800 1840 1860

Sustain:

To keep going.

To supply with food and other necessities of life.



First use of 'sustainability'

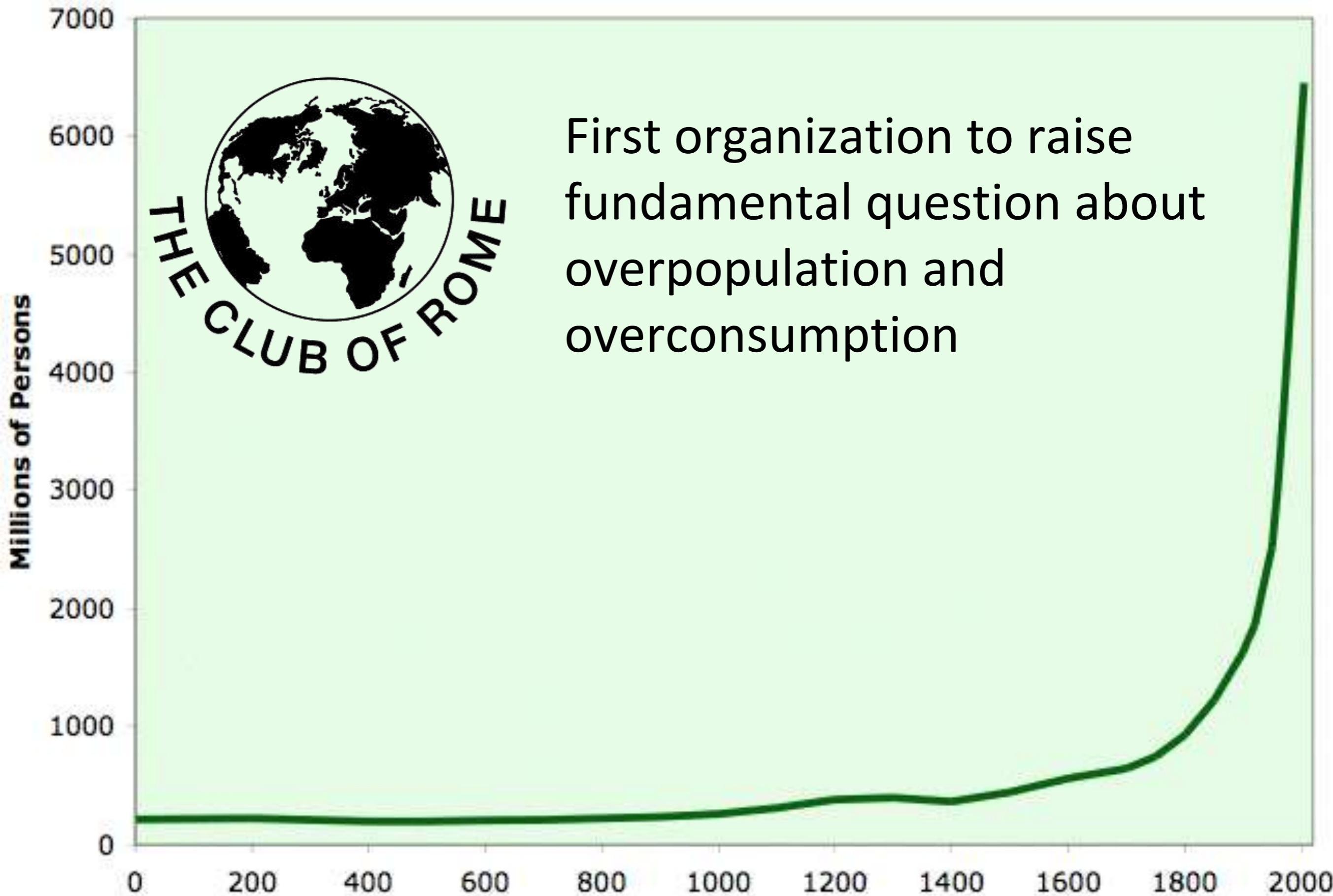
1713 - in reference to forests

1804 - "The forest manager must use the forest in such a way that the next generation can benefit at least as much from the forest as the current generation"

1800s - Came to mean conservation of natural resources



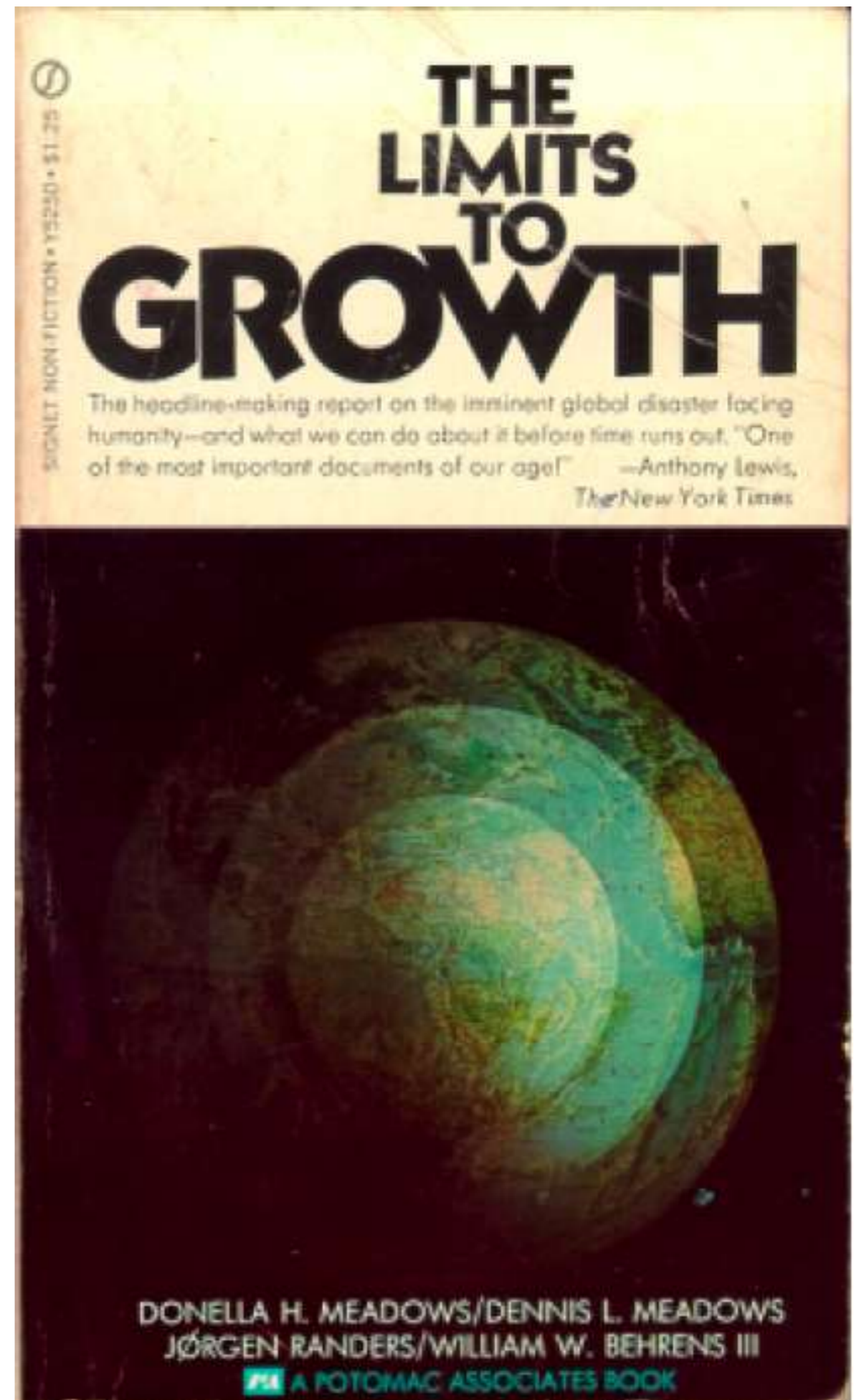
First organization to raise fundamental question about overpopulation and overconsumption

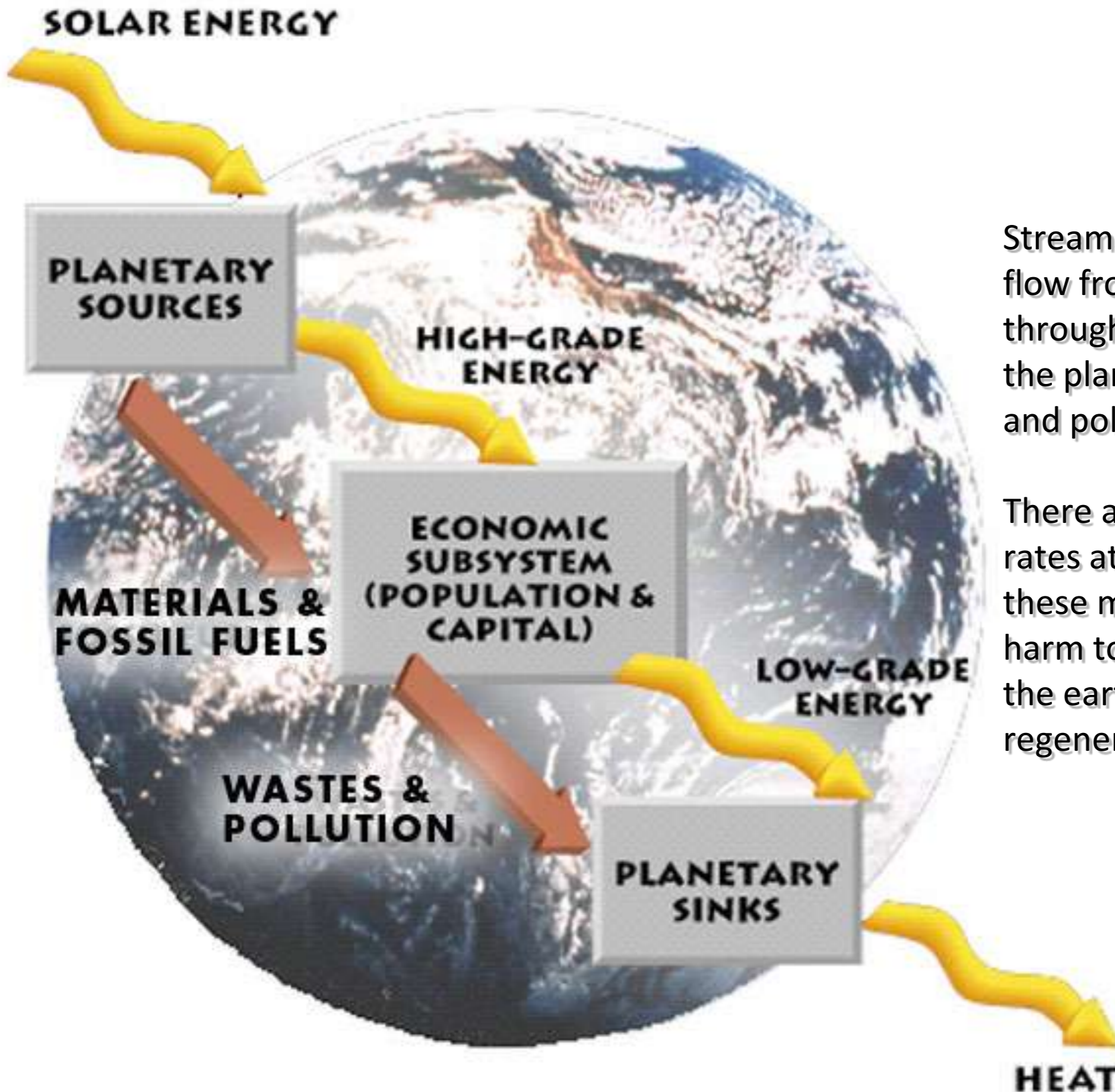


In 1972 the world's population and economy were still comfortably within the planet's carrying capacity.

There was still room to grow safely while we could examine longer-term options.

nothing that has happened in the last 30 years has invalidated the book's warnings





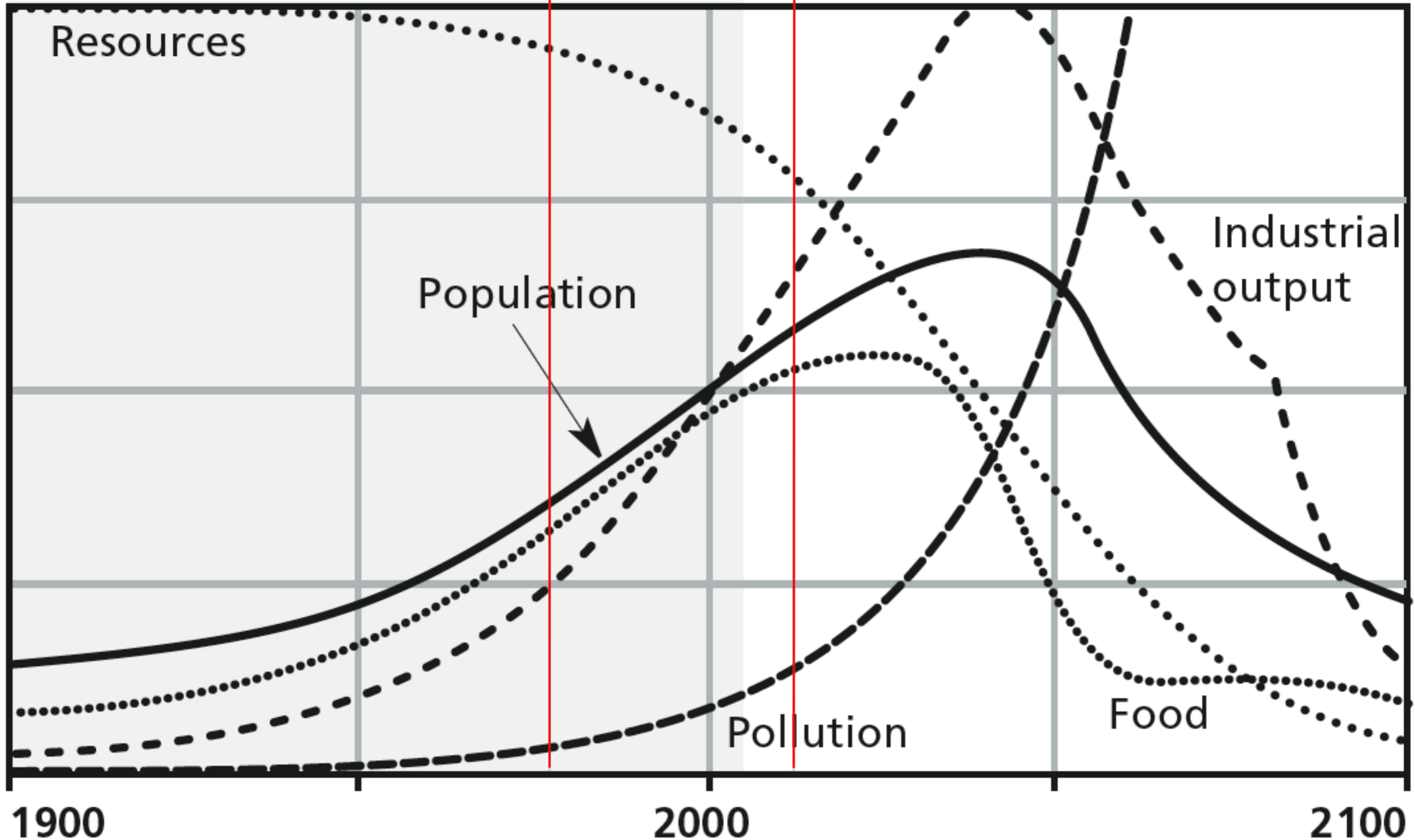
Streams of material and energy flow from the planetary sources through the economic system to the planetary sinks where wastes and pollutants end up.

There are limits, however, to the rates at which sources can produce these materials and energy without harm to people, the economy, or the earth's processes of regeneration and regulation.

Society proceeds as long as possible without major policy change. Population rises to more than seven billion by 2030. A few decades into the 21st century, growth of the economy stops and reverses abruptly.

State of the World

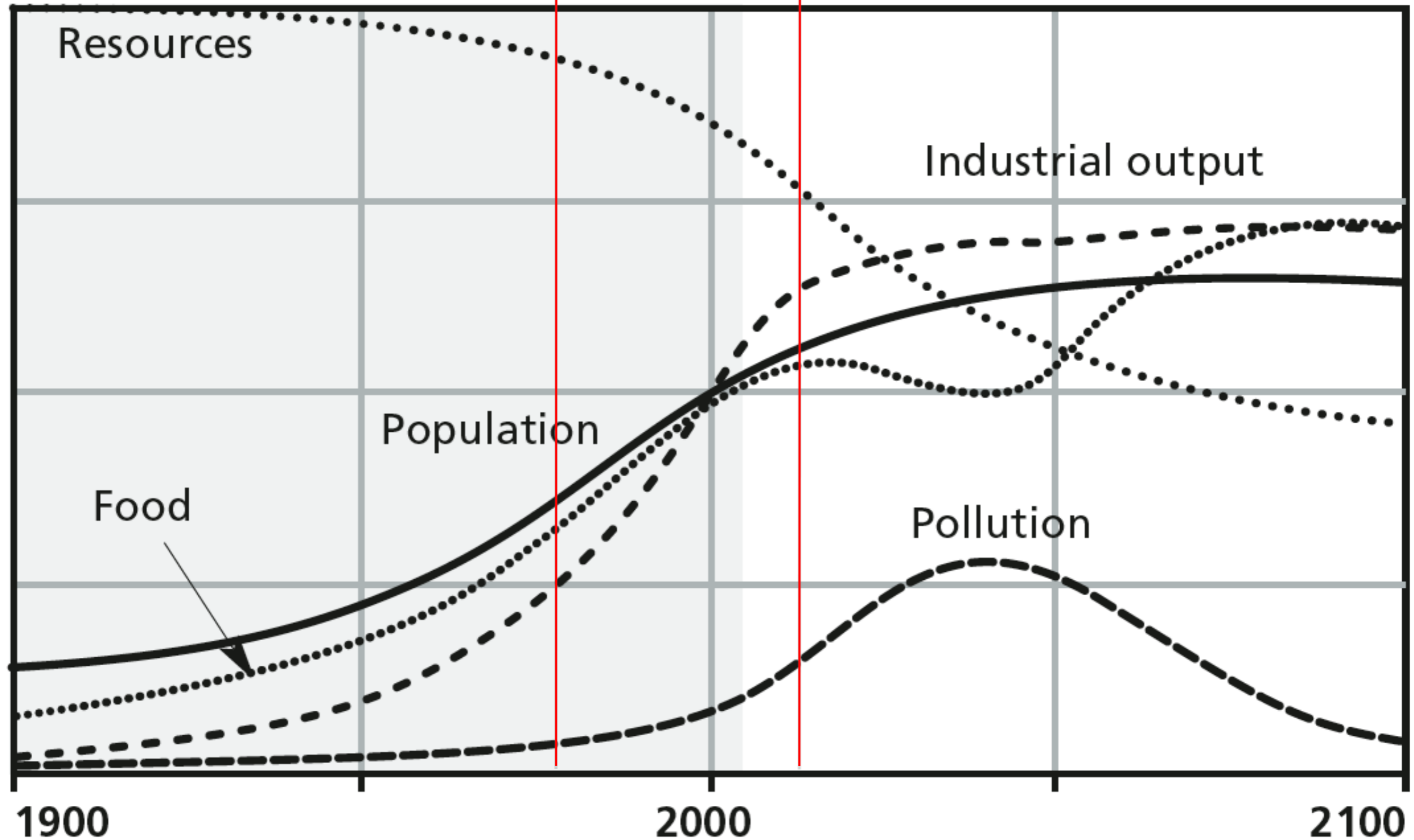
Scenario 1



Population and industrial output are limited. Technologies are added to abate pollution, conserve resources, increase land yield, and protect agricultural land. **The resulting society is sustainable.** 8 billion people live with high human welfare and a continuously declining ecological footprint.

State of the World

Scenario 12



George Mitchell



“I read the book *Limits to Growth* and it just impressed the hell out of me.”

Limits to Growth was “a first wakeup call.”

The Woodlands Conferences



Donella Meadows, lead author of the *Limits to Growth* report, gives her paper "The Trade-Off between Agricultural Growth and Equity in the Third World" at the 1975 Woodlands Conference.



Hazel Henderson, prominent futurist from Princeton University, speaks at the 1975 Woodlands Conference, giving a paper entitled "Beyond Economics: Energetics and the Conceptual Limits of Quantitative Methodology."



World Watch Institute president Lester Brown, member of the food limits panel at the 1975 Woodlands Conference, gives a paper called "Gaining Ground."



Alexander King, director of the Organization for Economic Cooperation and Development, and cofounder of the Club of Rome, moderates a plenary session at the 1977 Woodlands Conference.



Dennis Meadows, coauthor of *The Limits to Growth* and member of the Woodlands Conference board of directors, chairs a workshop entitled "Social Structures in a Sustainable State" at the 1977 Woodlands Conference.



Aurelio Peccei, Italian industrialist, scholar, and cofounder of the Club of Rome, chairs a workshop on "Modern Corporations in a Sustainable Society" at the 1977 Woodlands Conference.

The Woodlands Conferences



At the 1979 Woodlands Conference, George Mitchell (right) and Harlan Cleveland, of the Aspen Institute, sit on either side of Paul Ehrlich, first-place Mitchell Prize winner and population specialist from Stanford University.

The Woodlands Conferences

“After about two or three conferences I began to realize what we’re really seeking was the *nature of sustainable societies*.”

“How do we develop a technique for sustainable societies to exist?”

“How could you establish sustainable societies when you have a rapid population growth?”

- George Mitchell

The Woodlands Conferences

“Sustainable societies are those that are capable of reaching and then sustaining a decent quality of life for their citizens.

“To achieve sustainability in the world there must be a balance between things like environmental degradation, deforestation, desertification, and food availability and other resources for the amount of people we have.”

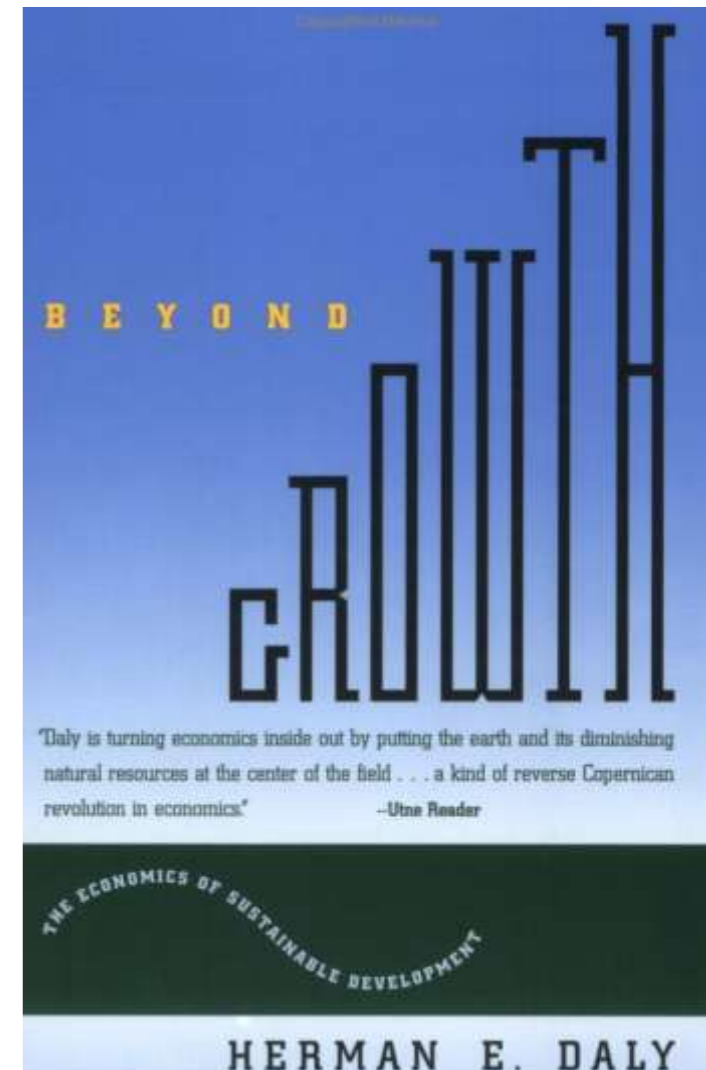
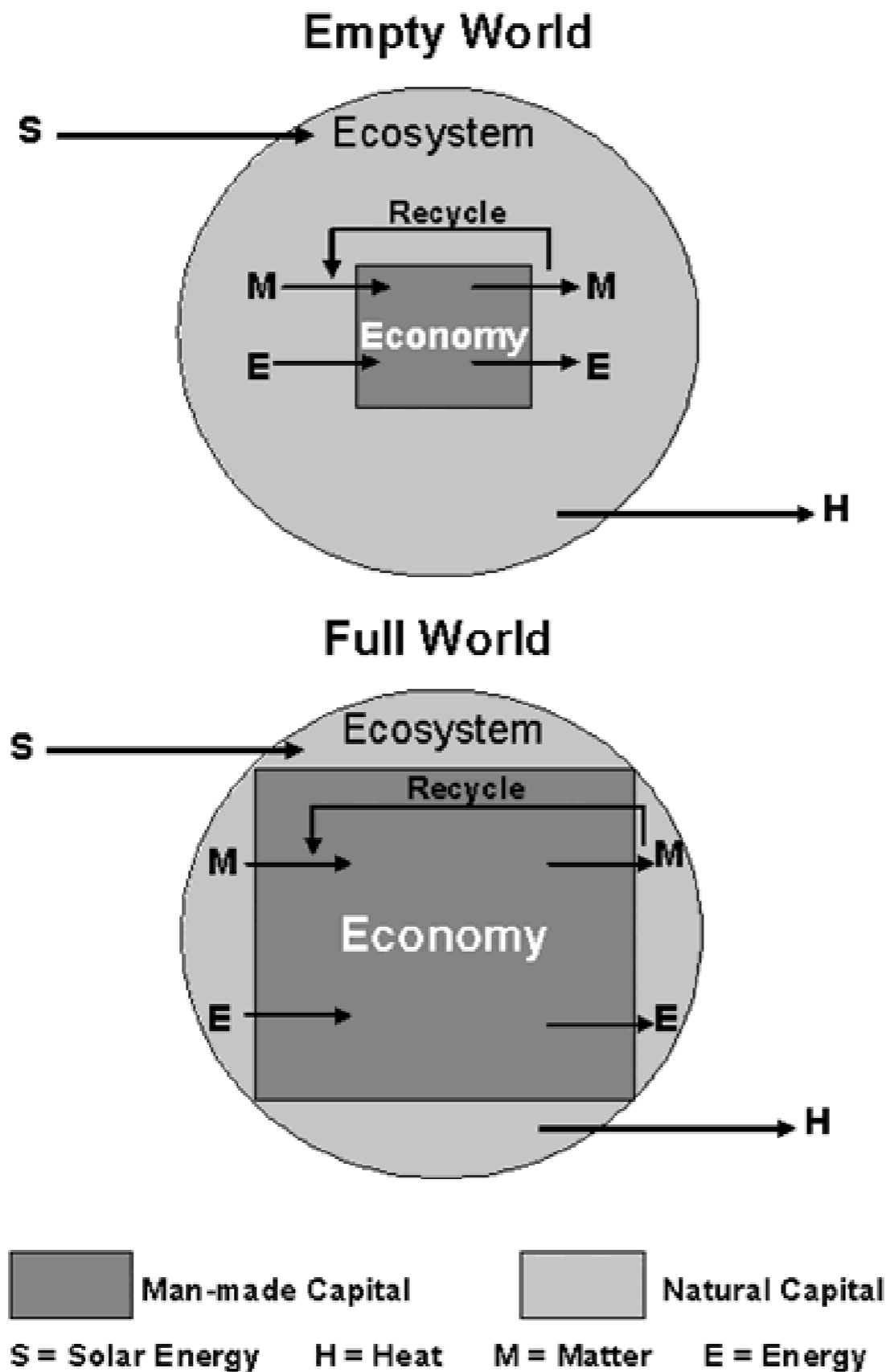
- George Mitchell

The Woodlands Conferences

“How well humankind manages earth’s resources, environment, and population will determine whether civilization advances or dies in coming years.”

- George Mitchell

Herman Daly



1987 - Brundtland Commission

(World Commission of Environment and Development)

Sustainable Development

definition:

Meet the needs of the present generation without compromising the ability of future generations to meet their needs

key concepts:

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

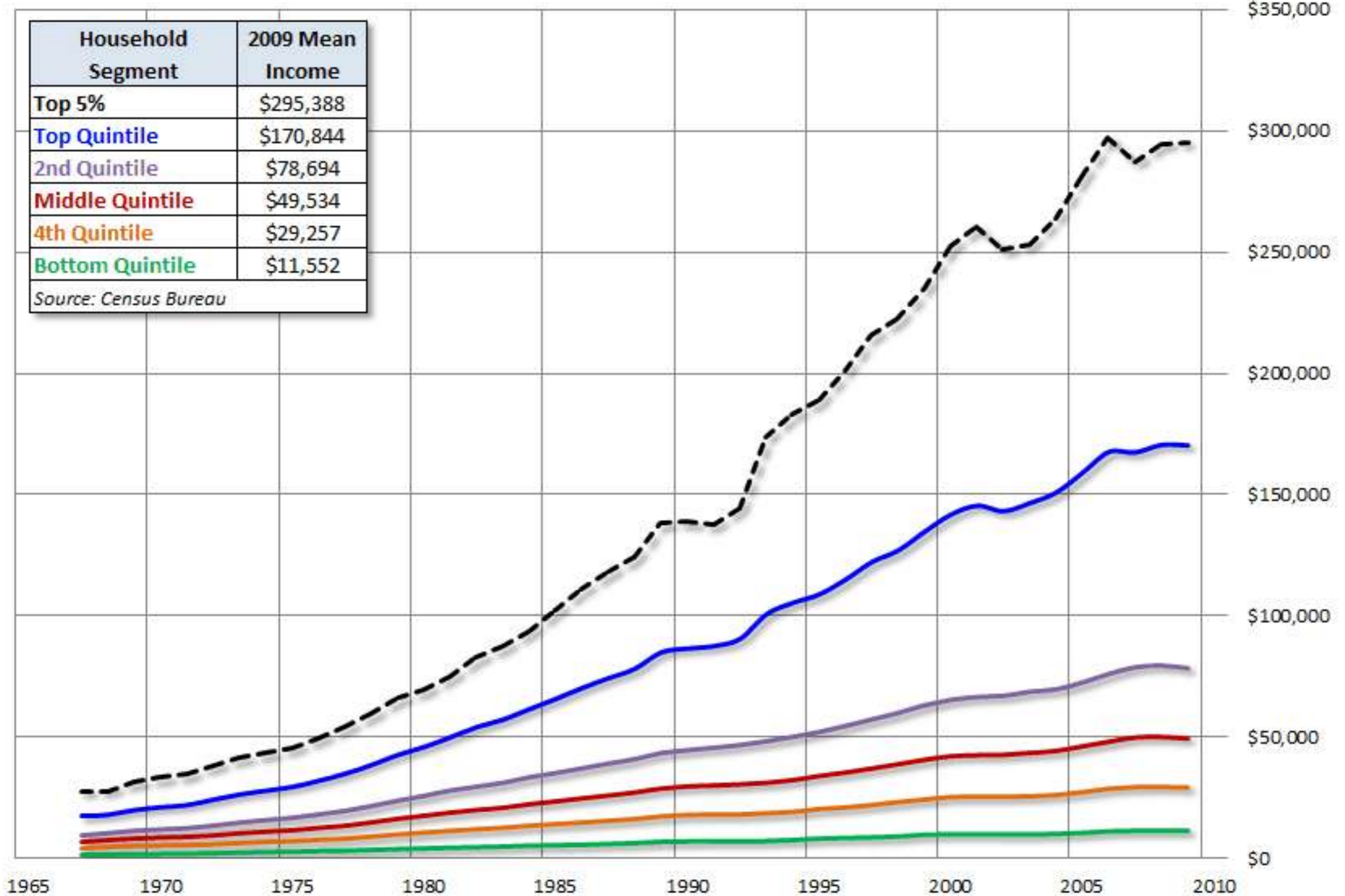


Gro Harlem Brundtland

Source: Census Bureau
Data from 1967-2009

Mean (Average) Household Income By Quintile and Top 5%

dshort.com



Sustainable Development

*Great Law of Peace of the Six Nations
of the Iroquois Confederacy:*

*Chiefs must consider the impact of their
decisions on the seventh generation to
come.*

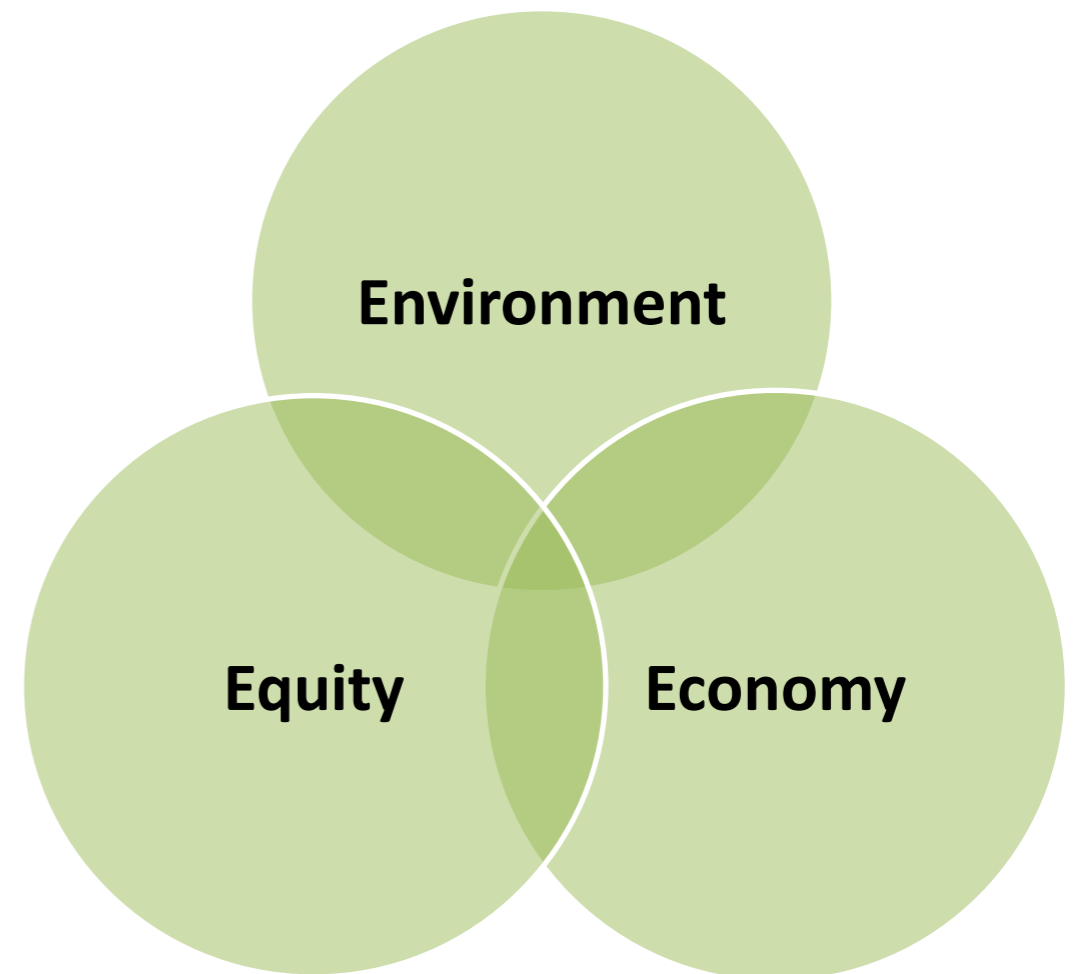
Sustainable Development

Must consider simultaneously

Economy

Equity

Environment



Economy:

Thrifty management of money, materials, etc.

Management of resources of a community, country, etc.

Originally meant “homeowner”, then “estate manager”, then “care of resources”.

Best care of resources uses as little as possible.

Economy implies frugality.

Need

Air

Water

Food

Shelter?

Mobility?

Clothing?

I-Pod?

4,000-square-foot house?

Want

3.5-ton truck (SUV)?

Basics for sustainability:

air water food soil

Already a
problem

Quantity, quality
threatened

Threatened:
supply, quality

Farmland
threatened, topsoil
going





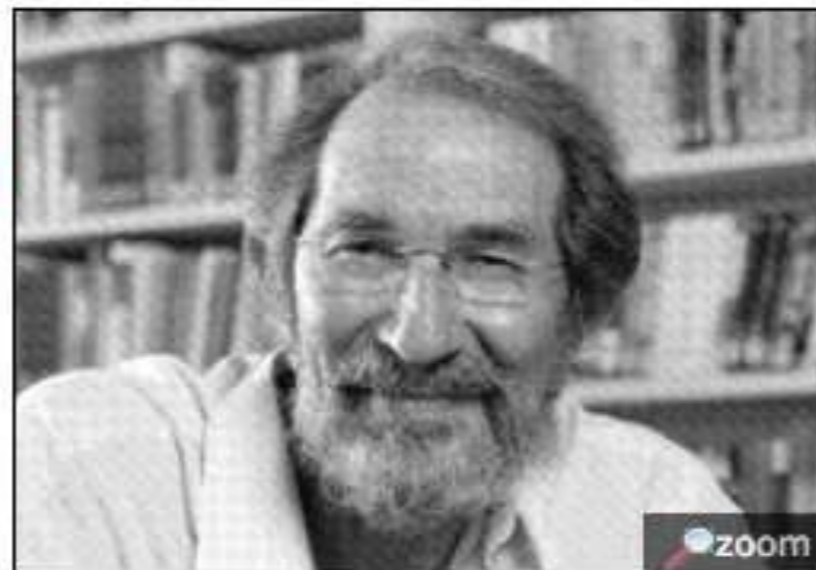
arabianbusiness.com/542705-the-end-of-the-world-is-nigh

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The end of the world is nigh

by Kat Slowe on Monday, 05 January 2009

Will greed spell the end of the human race? Scientist and one of Time magazine's 100 most influential men Geoffrey West tells Katherine Slowe how new biological research points to mankind's imminent destruction.



"There is a simple formula by which, if you are sitting at the top of a cliff and looking out at the ocean, you can derive how far away the horizon is," claims Geoffrey West, president of the prestigious Santa Fe Institute, with simple joy.

"I used to stare at the horizon from the chalk cliffs near my home and I'd see these ships go down over it. I'd find it absolutely

seedmagazine.com/news/2009/02/urban_paradox.php

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Business Confidence Survey

Travel Survey 2008

WORLD WATCH

Volume 22, Number 2

Vision for a Sustainable World

March/April 2009

“This is a moment of great volatility and instability in the world system. We need urgently to do what we can to avoid **deep collapse.**”

-C.S. Holling

**Our Panarchic Future:
Complexity—
and Collapse?**

- 
- ▶ Transport Carbon Emissions
 - ▶ Water: Right or Commodity?
 - ▶ Ocean Dumping of Mine Wastes

No American newspaper
or television station
reported this story.

“We are basically looking now at a future
climate beyond anything we’ve
considered seriously in climate model
situations.”



Christopher Field

*Carnegie Institution for Science, Co-
chair, Working Group II of the IPCC,
testifying before the Senate,
Committee on Environment and Public
Works*

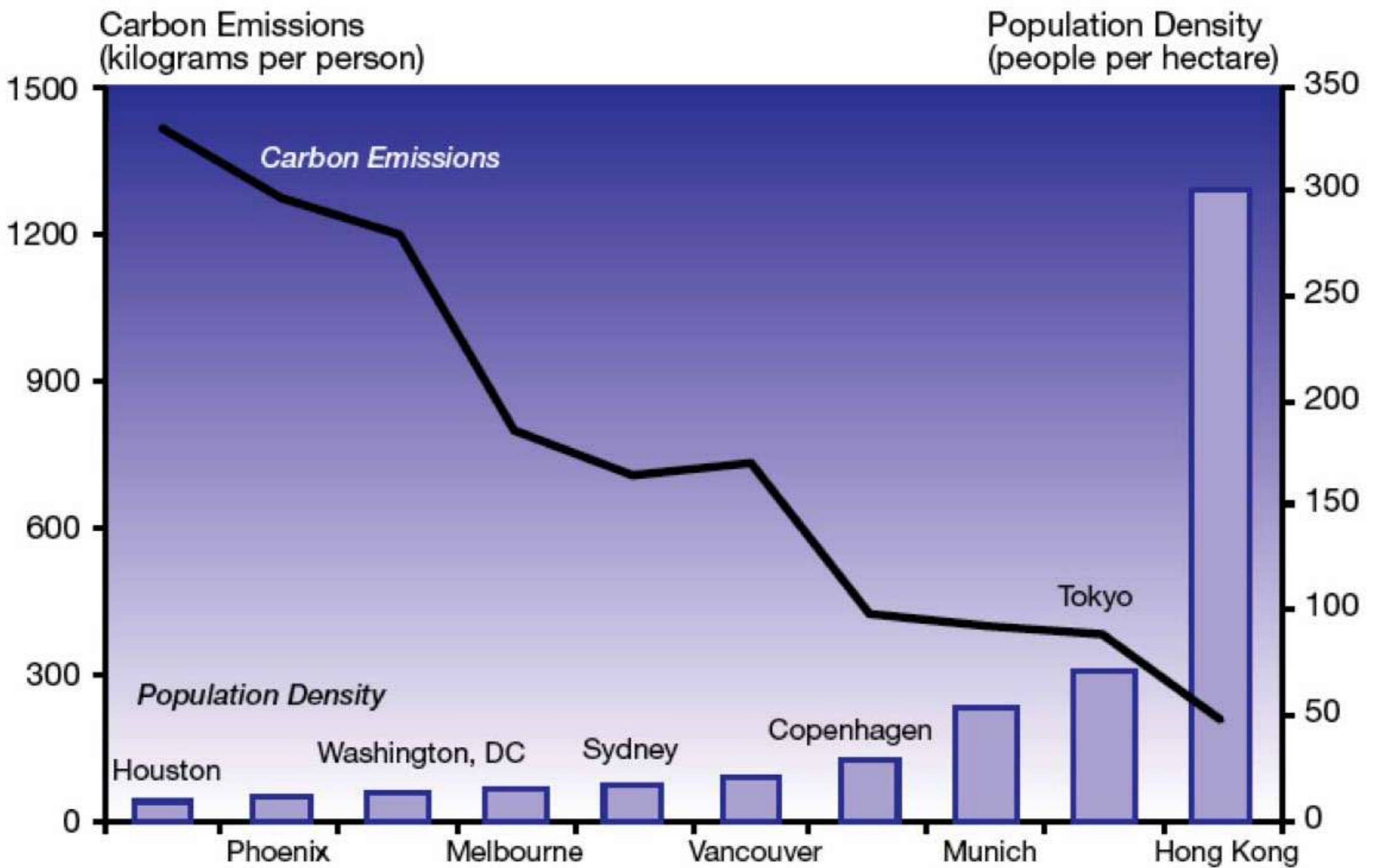


Democracy Now, February 26, 2009

The Precautionary Principle:

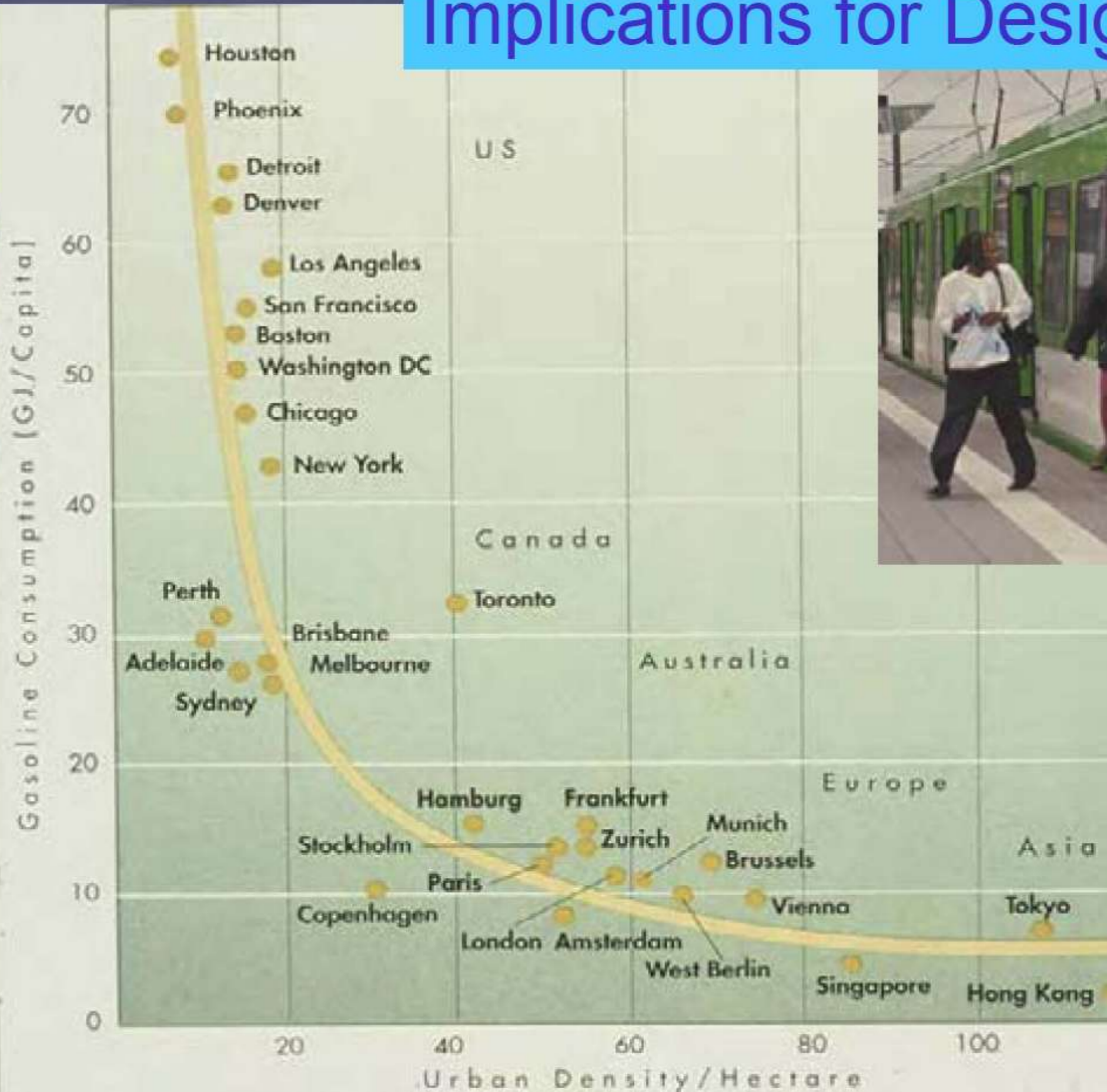
- When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof.
- 1) When we have a reasonable suspicion of harm, and
- 2) scientific uncertainty about cause and effect, then
- 3) we have a duty to take action to prevent harm.

Pop. density vs carbon from transportation, 1990

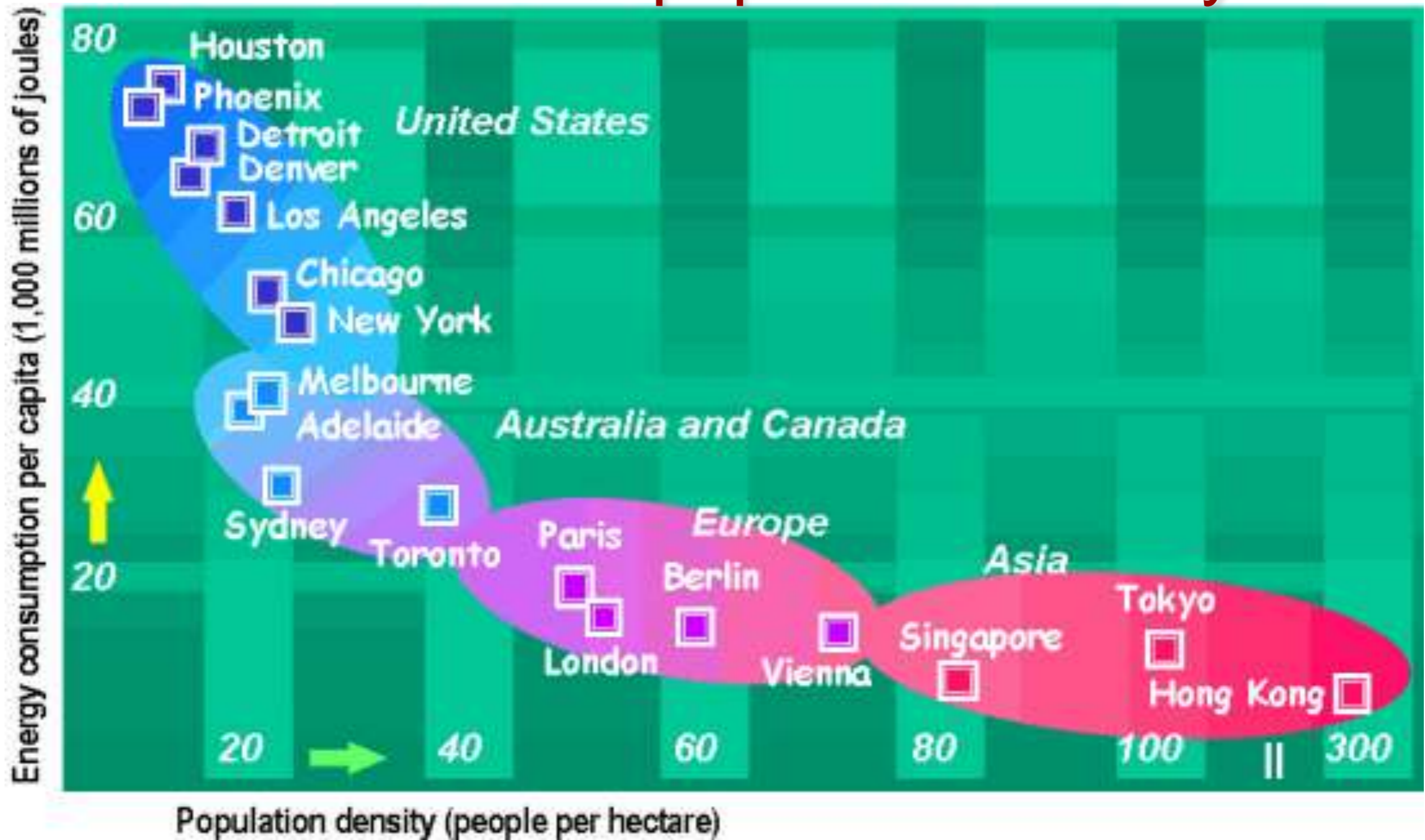


Source: Jeffrey Kenworthy et al., *An International Sourcebook of Automobile Dependence in Cities* (University Press of Colorado, 1999).

Implications for Designing Cities?



Energy consumption vs. population density

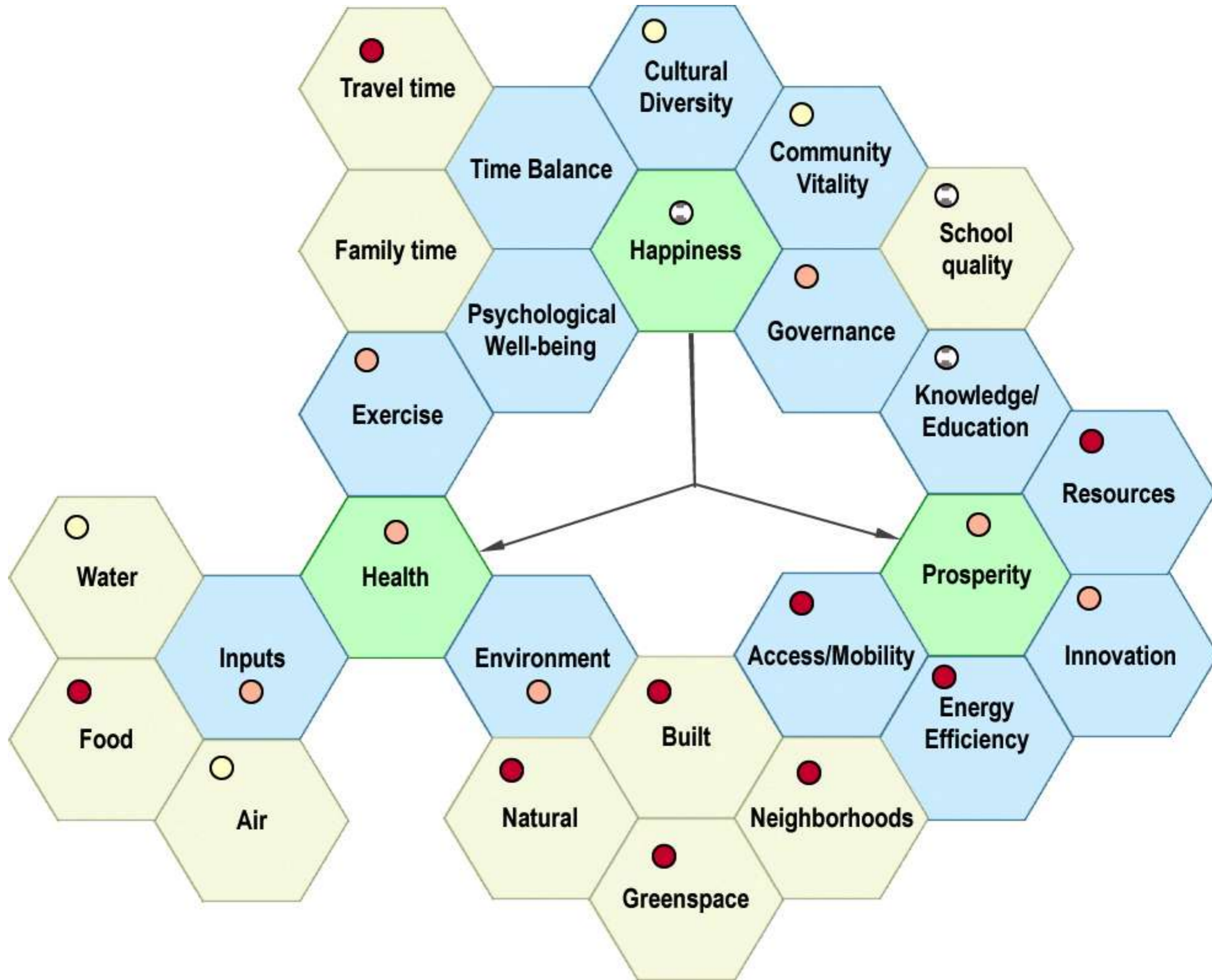


Source: adapted from Newman, P. and J. Kenworthy (1999) Sustainability and Cities

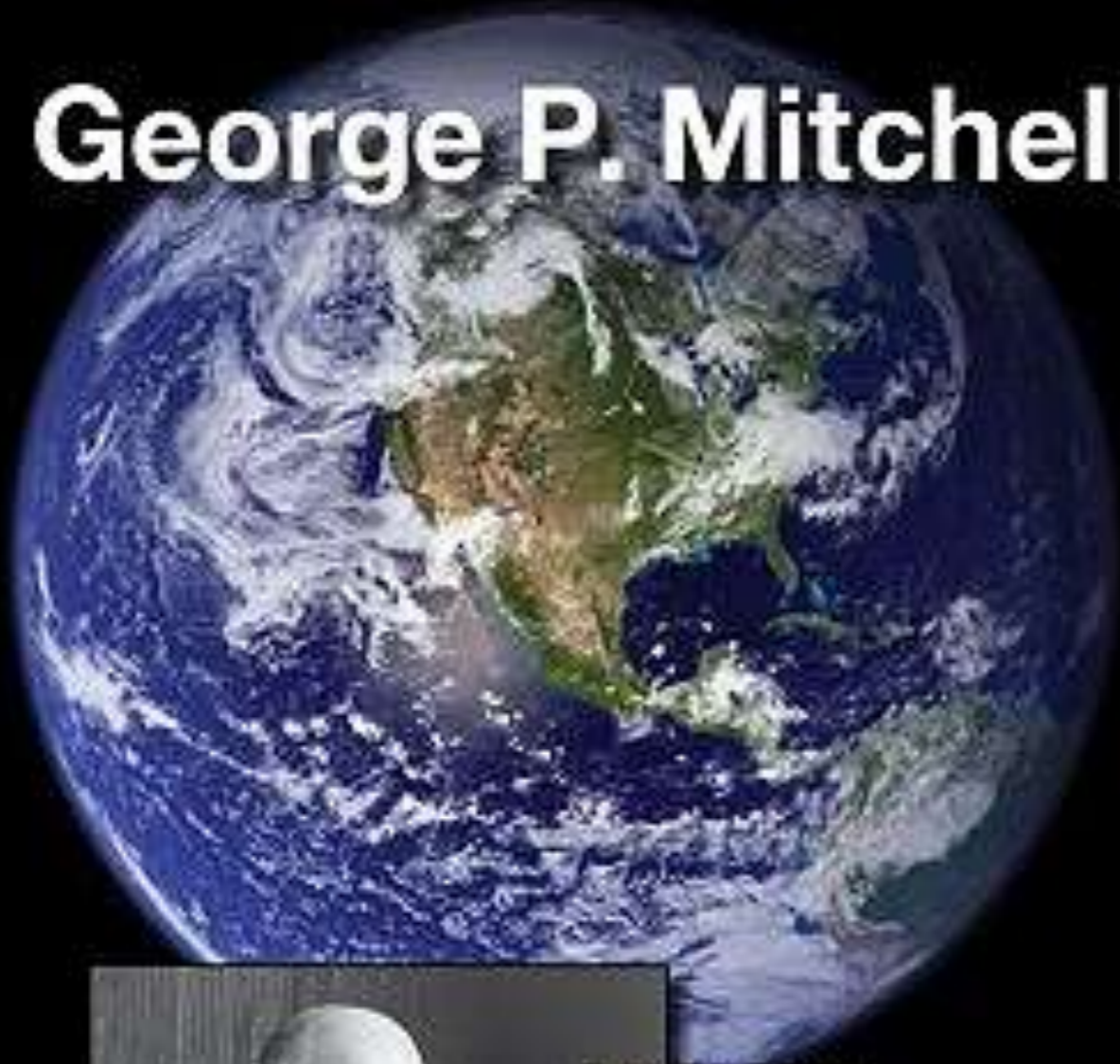


The observed historical data for 1970-2000 most closely matches the simulated results of the LtG “standard run” scenario for almost all the outputs reported; this scenario results in global collapse before the middle of this century.

A Comparison of the Limits to Growth with 30 Years of Reality - Graham Turner, Commonwealth Scientific and Industrial Research Organisation, Australia



George P. Mitchell



**AND THE
IDEA OF
SUSTAINABILITY**

Jurgen Schmandt

Suggested
reading