

Enough Is Enough

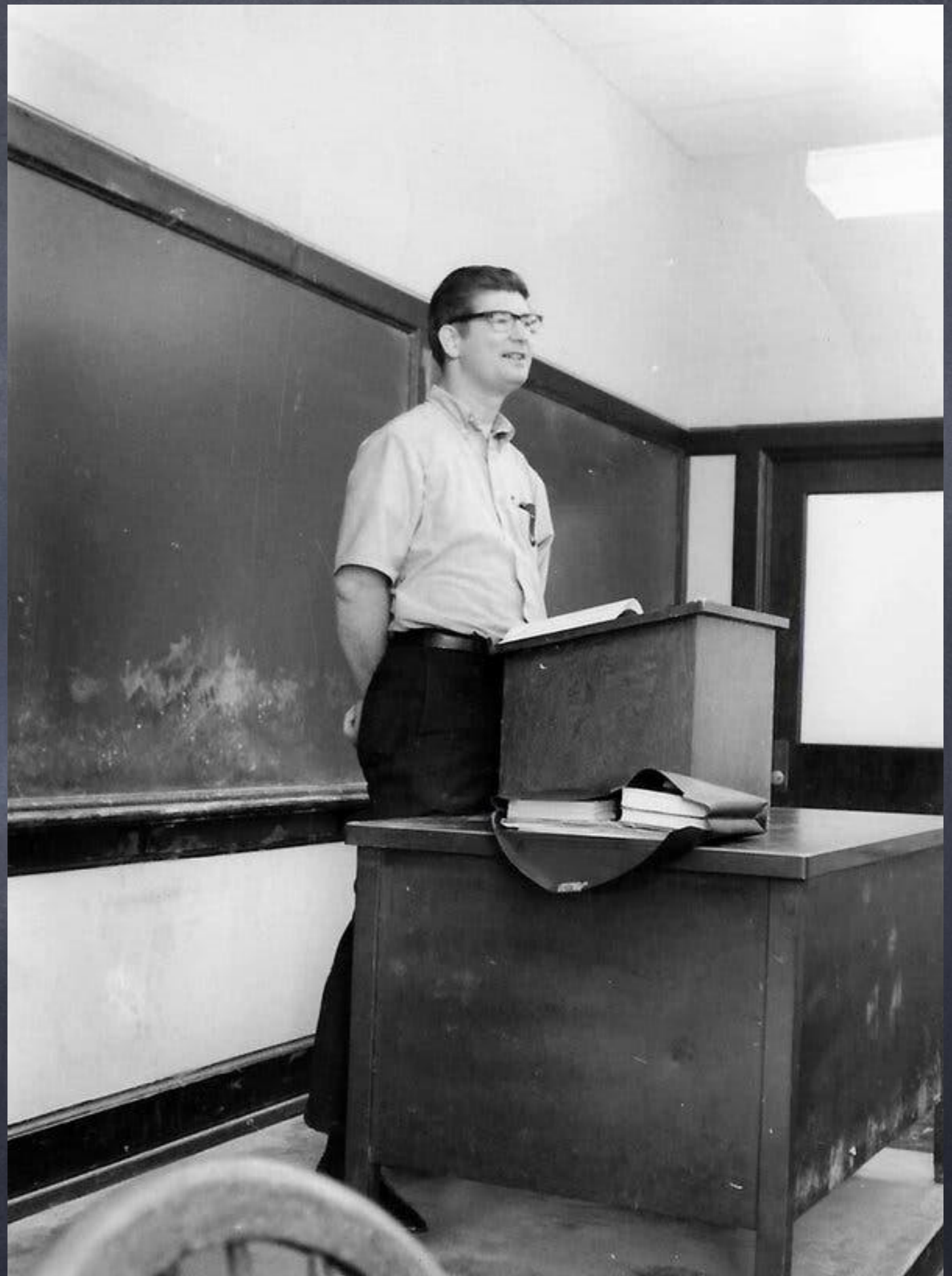
**BUILDING A SUSTAINABLE
ECONOMY IN A WORLD
OF FINITE RESOURCES**



post carbon institute



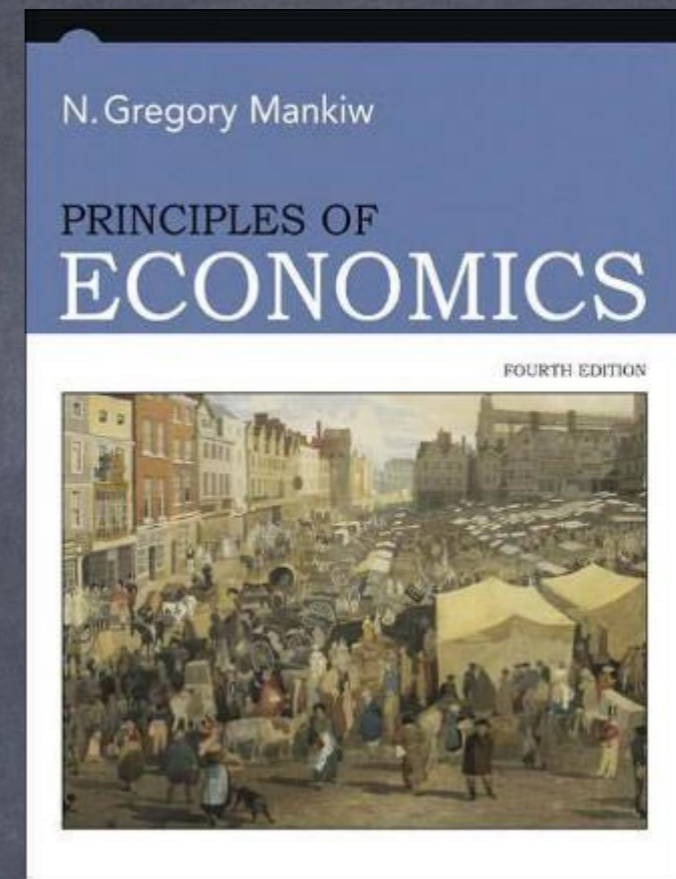
Dedicated to
Herman Daly
(1938 – 2022)



Part 1.
Economics
and the
Environment
(A Tale of Two Majors)

ECON 101

- Supply and Demand
- Production and Utility
- Firms and Consumers
- Marginal Cost and Revenue
- Elasticity
- International Trade
- Perfect Competition
- Labor and Capital
- Savings and Investment
- Monetary Policy
- Costs and Benefits



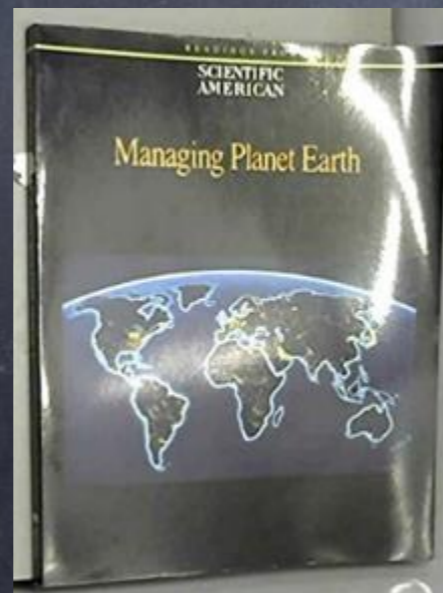


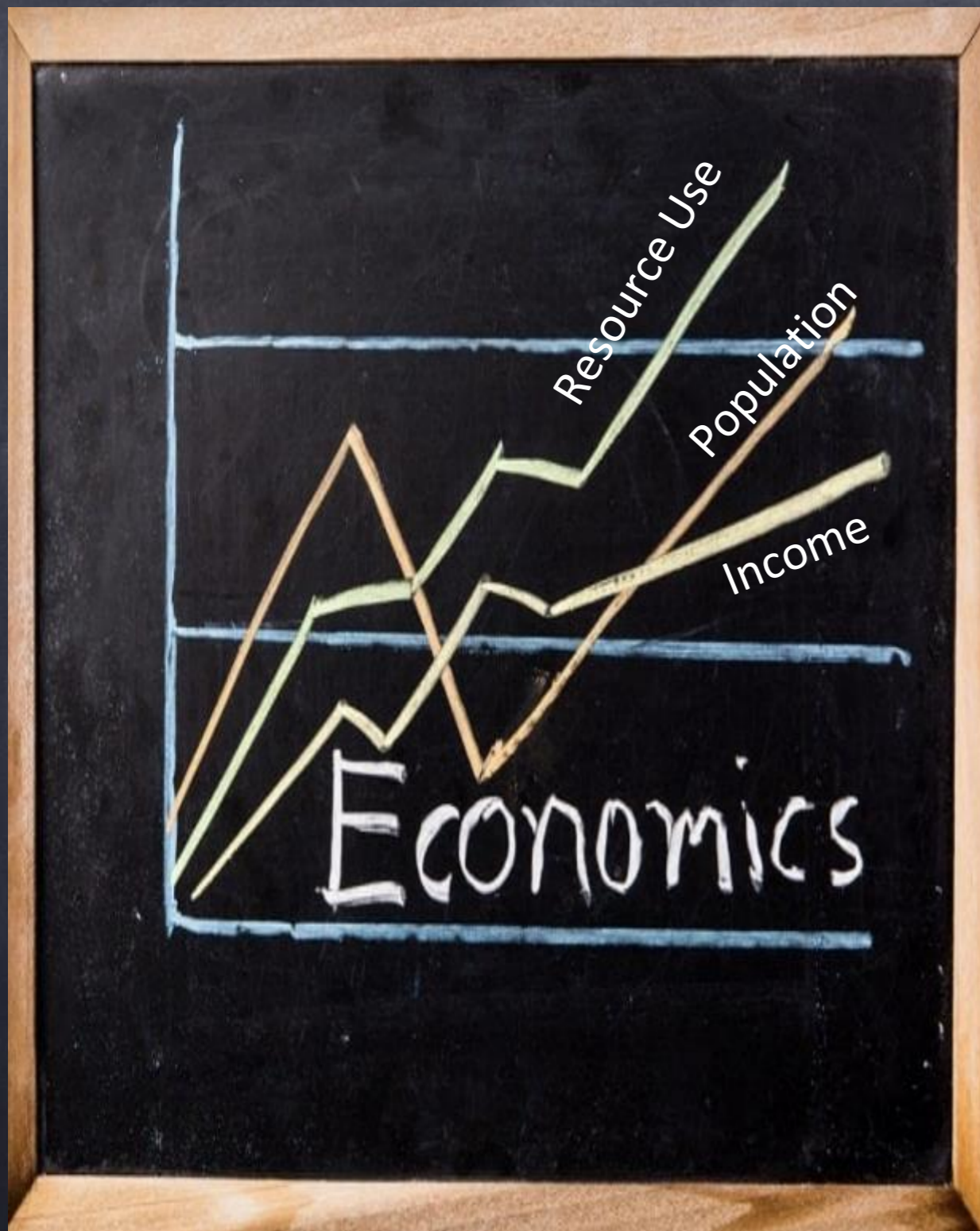


I Hate Econ!

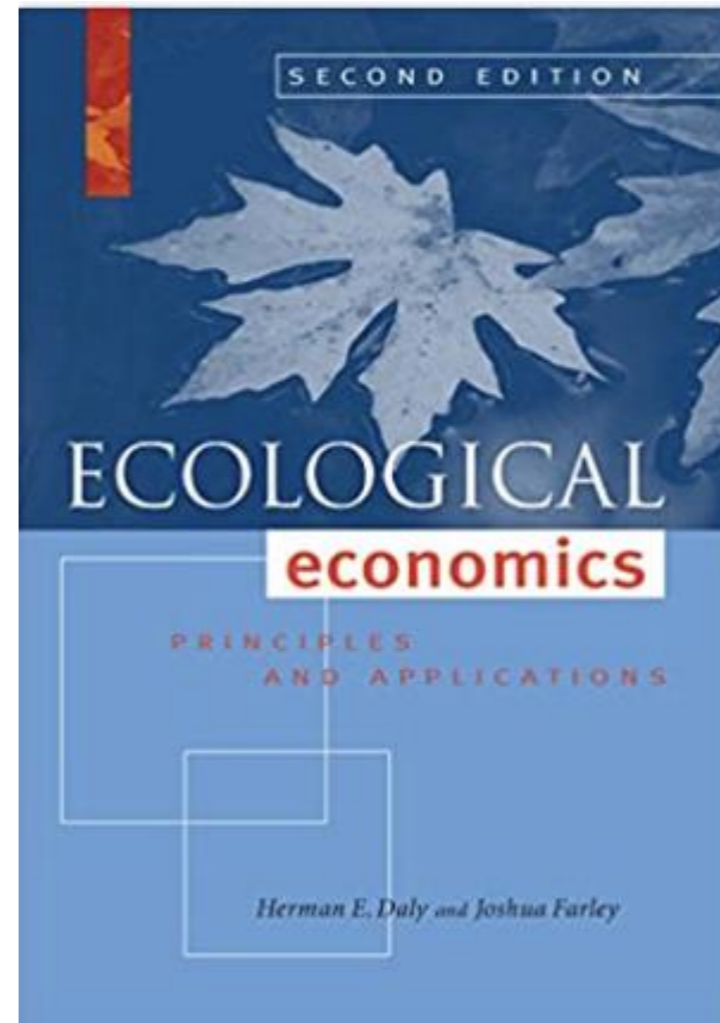
ENV ST 101

- Rising Human Population
- Resource Consumption
- Climate Change
- Habitat and Biodiversity Loss
- Ecosystem Degradation
- Pollution
- Topsoil Erosion
- Deforestation
- Wetland Loss
- Desertification
- Groundwater Depletion





Ecological Economics



Steadystate.org

Part 2.
Economic
Growth

GROSS DOMESTIC PRODUCT (GDP)



ECONOMIC GROWTH



POPULATION



CONSUMPTION

**AVERAGE ANNUAL GDP
GROWTH RATE IN THE U.S. = 3.13% (DOUBLING TIME
FROM 1948 TO 2022 OF 22 YEARS)**

2036

2014

1992

1970

1948



**Abu Dhabi,
United Arab
Emirates**

**Fifty Years of
Exponential
Growth**





Energy Literacy: Try the Car Test





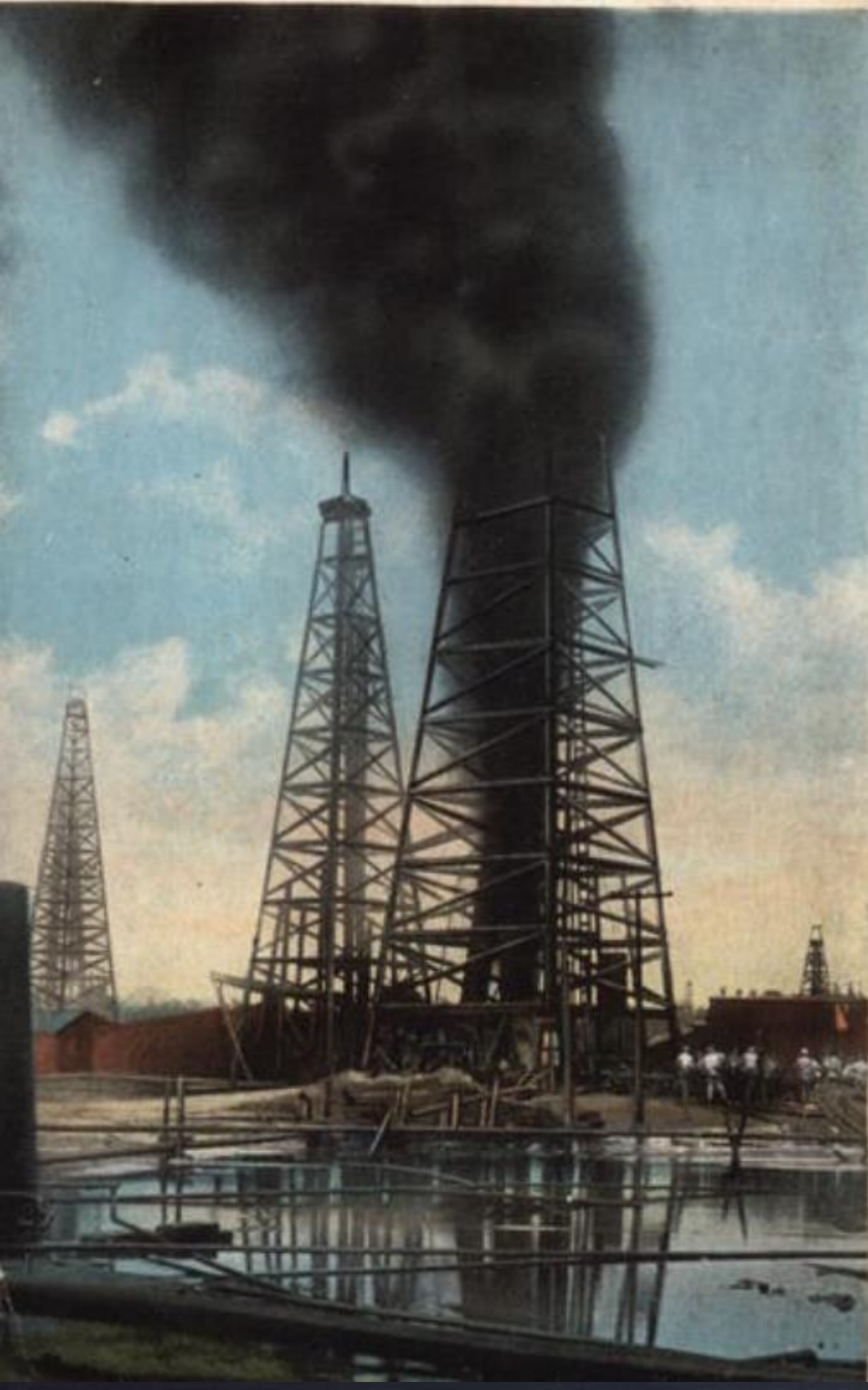
1 BARREL =
25,000 LABOR HOURS =
500,000 DOLLARS



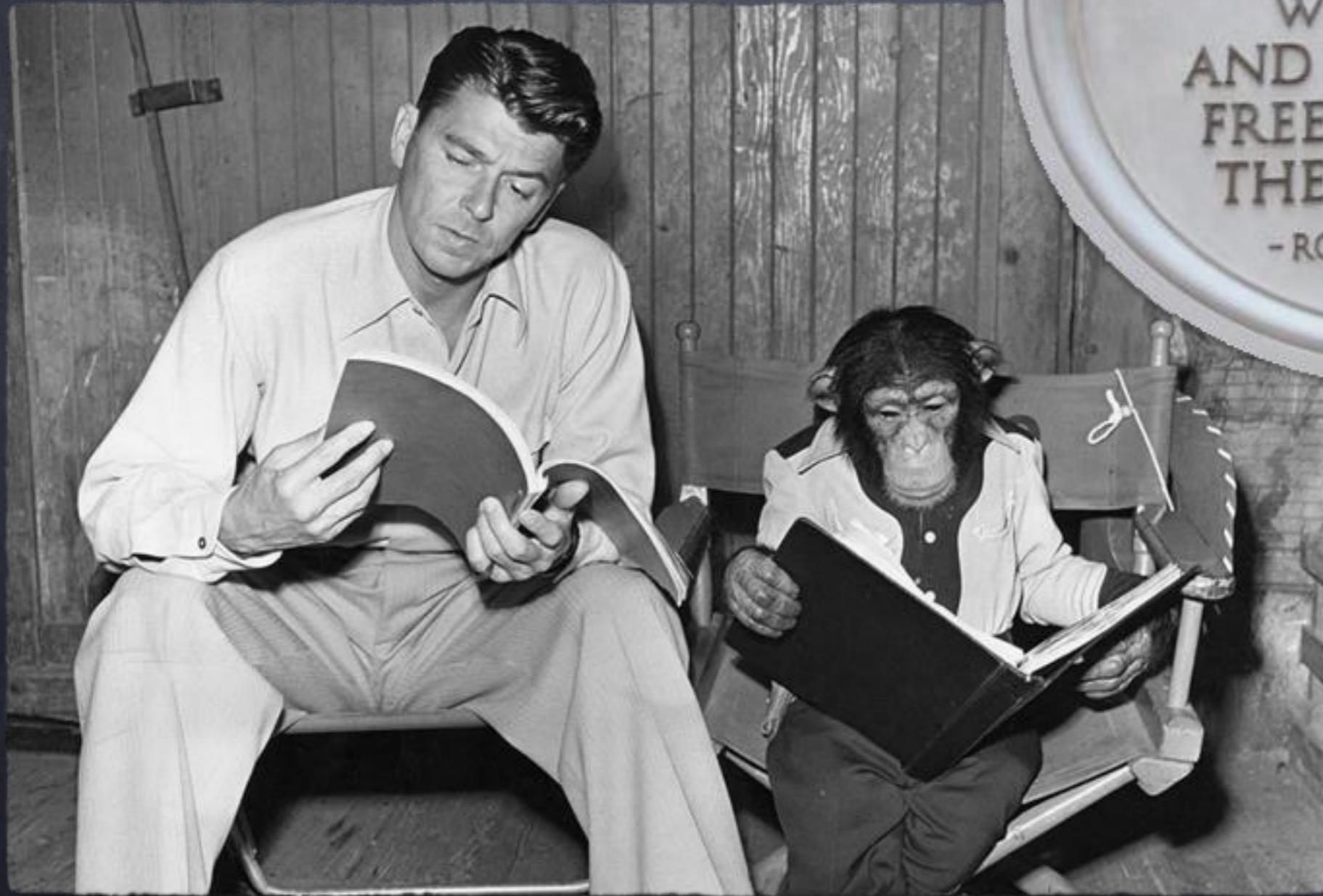


Energy Return on Investment (EROI)





The CULTure of Growth



THERE ARE
NO LIMITS TO
GROWTH AND
HUMAN PROGRESS
WHEN MEN
AND WOMEN ARE
FREE TO FOLLOW
THEIR DREAMS.

- RONALD REAGAN



Fiscal policy is the use of government spending and taxation to influence the economy. Governments typically use fiscal policy to promote strong and sustainable growth and reduce poverty.

THE CLUB FOR
GROWTH[®]

**Fighting for Economic
Growth, Together.**



“We’ve already created, with your help, 800,000 good-paying manufacturing jobs, the fastest growth in 40 years.”

“And by the way, when we do all of these things, we increase productivity. We increase economic growth.”

Part 3. Uneconomic Growth and Overshoot

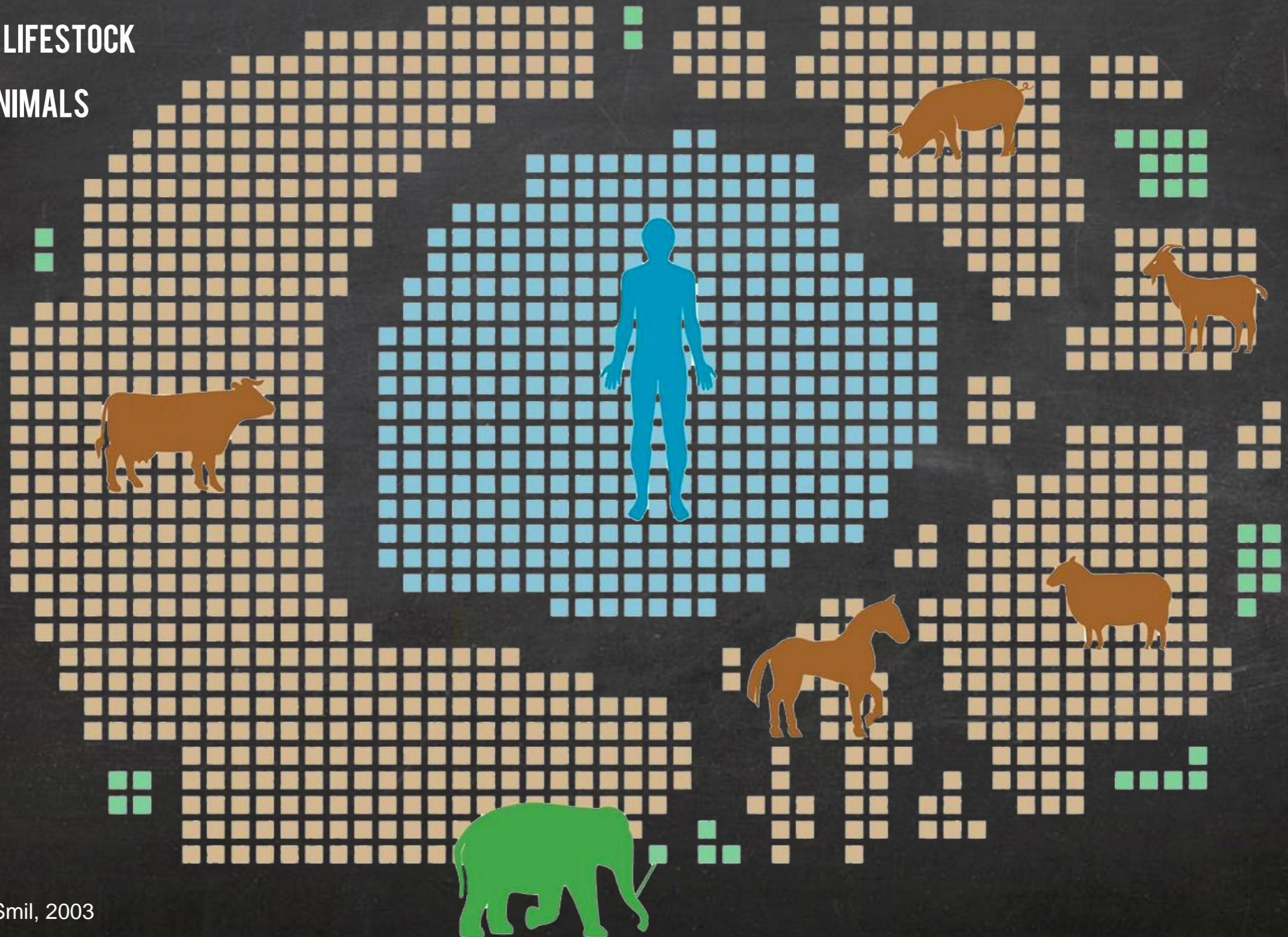
**Growth
comes with
benefits
AND
costs!**



Earth's Land Mammals by Weight

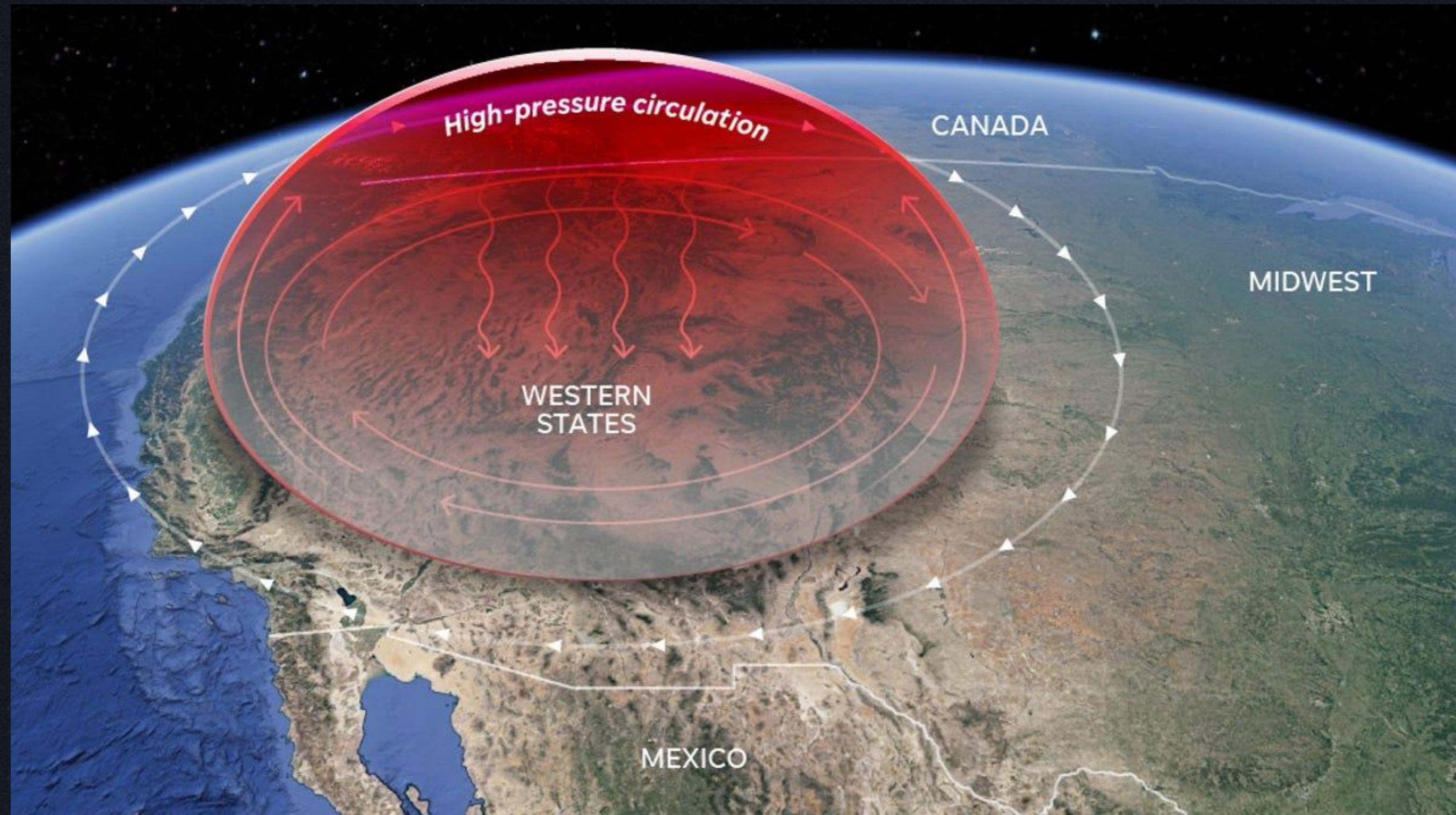
(EACH SQUARE IS 1 MILLION TONS)

-  HUMANS
-  PETS & LIVESTOCK
-  WILD ANIMALS



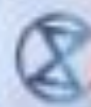
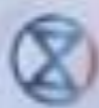


Heat Dome





WE ARE
NATURE
DEFENDING
ITSELF



How many Earths does it take?

(GLOBAL PRODUCTIVE HECTARES PER CAPITA)



Equitable distribution within nature's limits

1.67 GHA



European standards of living

4.5 GHA



U.S. standards of living

6.8 GHA

The CULTure of Growth (Revisited)



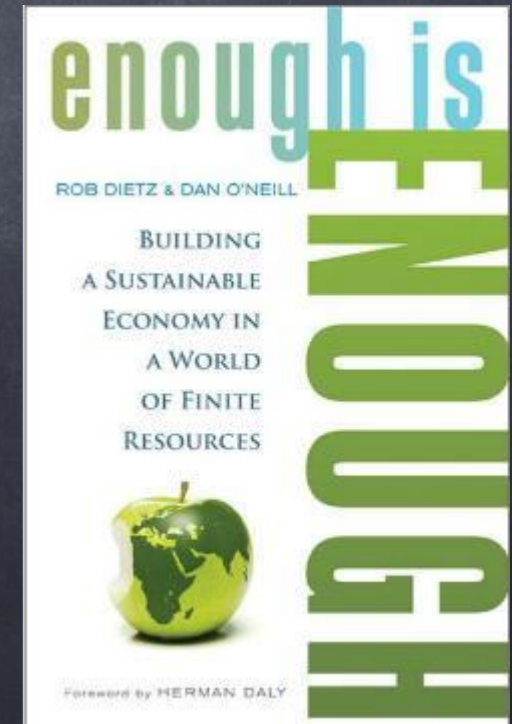
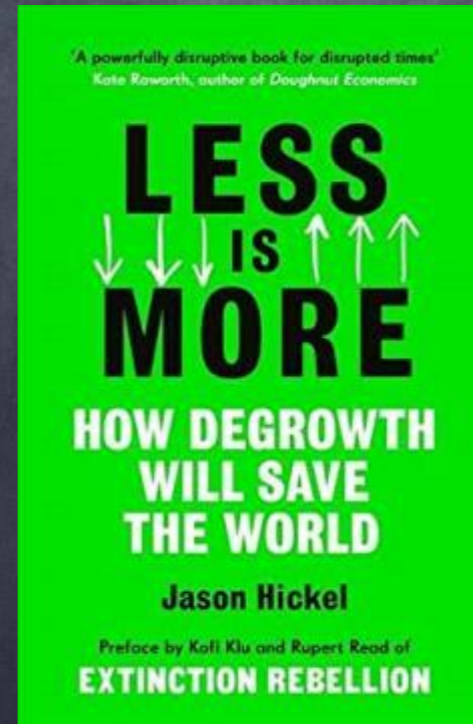
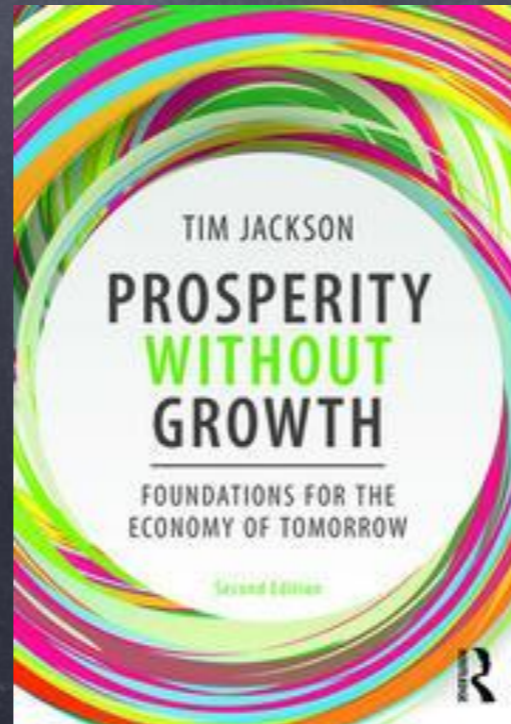
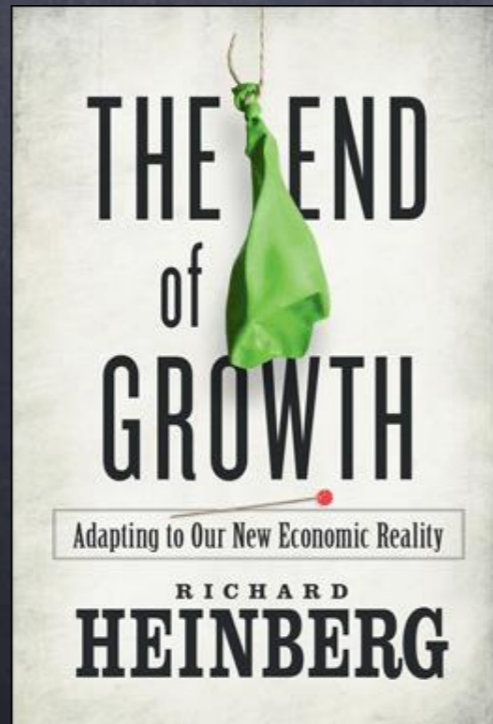
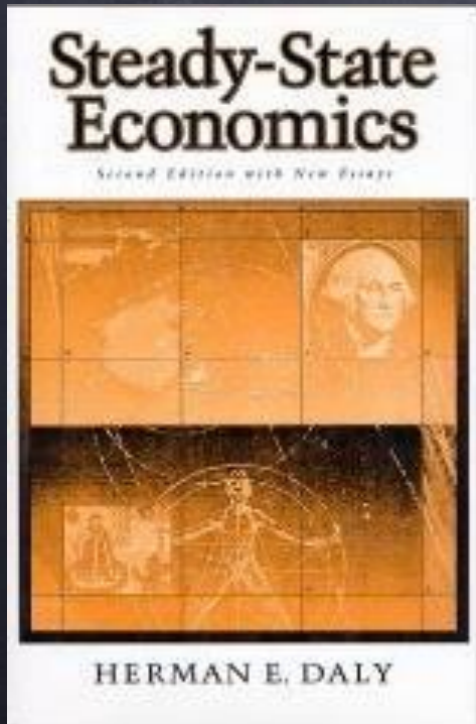
Organisation for Economic Co-operation and Development (OECD)

Mission: To promote policies that will improve the economic and social well-being of people around the world.

Angel Gurría, OECD Secretary-General

“At the OECD, we believe that it is possible to tackle climate change and grow the economy. Our bottom line is that green and growth are compatible. We can and must have them together.”

Part 4. Economy of Enough



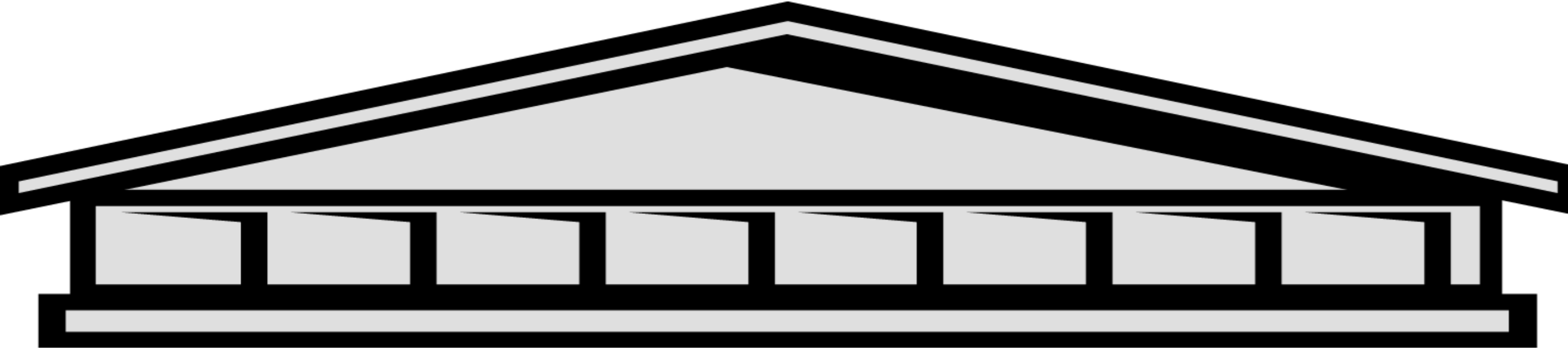
- **Sustainable scale**
- **Fair distribution of wealth**
- **Efficient allocation of resources**
- **High quality of life**



FEATURES

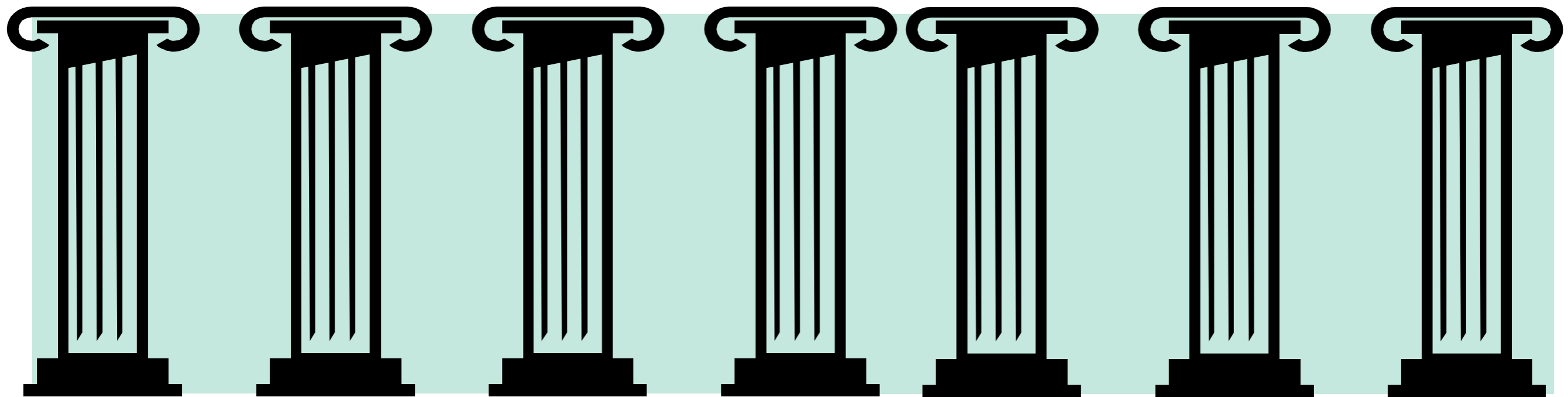
- **Constant (or mildly fluctuating) population**
- **Constant (or mildly fluctuating) per capita consumption**
- **Sustainable flow of energy and materials**





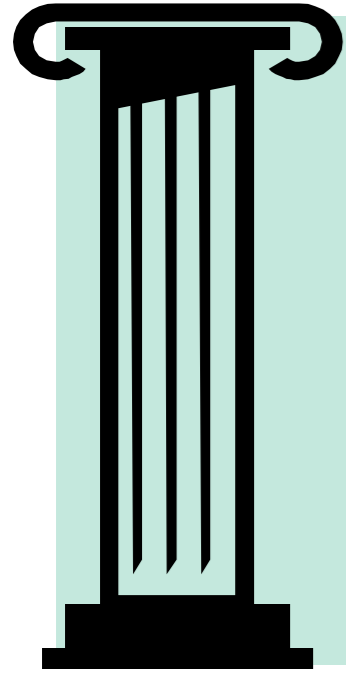
Roof: goal of sustainable and equitable well-being

Pillars: support structure of new policies and institutions

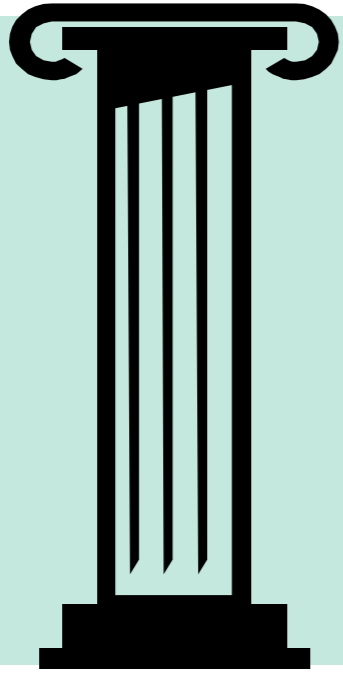


Foundation: changing awareness from more to enough

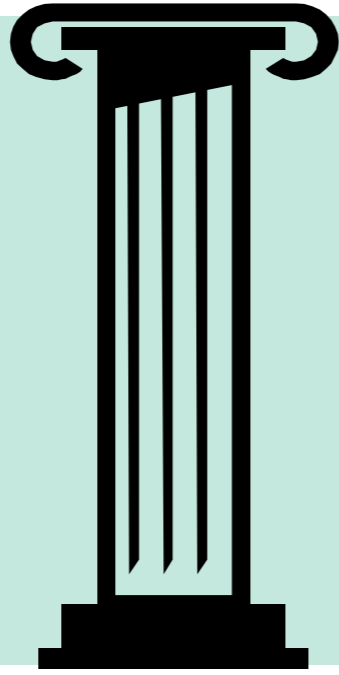




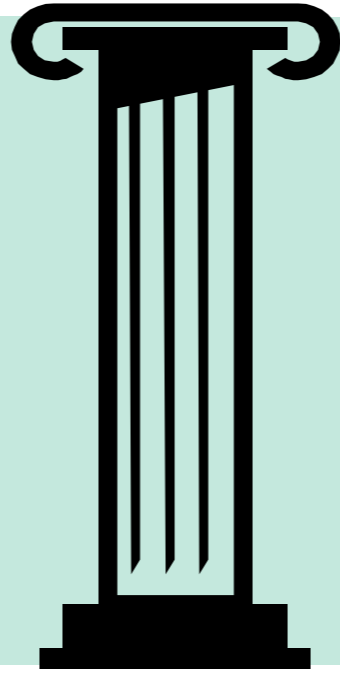
1. Limit materials and energy



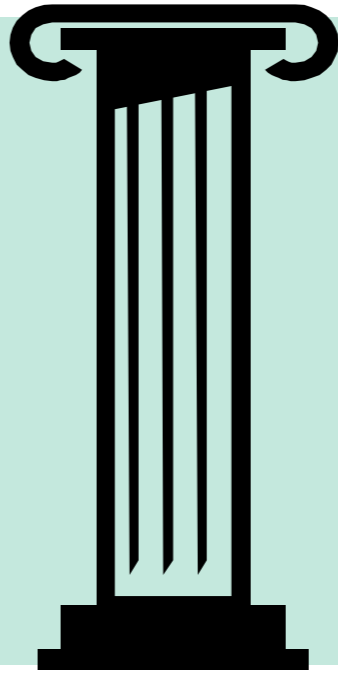
2. Stabilize population



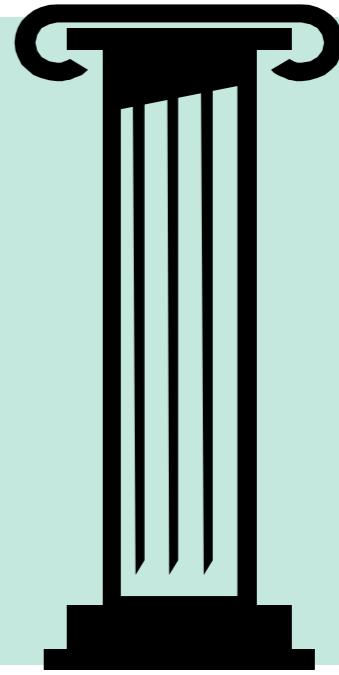
3. Achieve fair income distribution



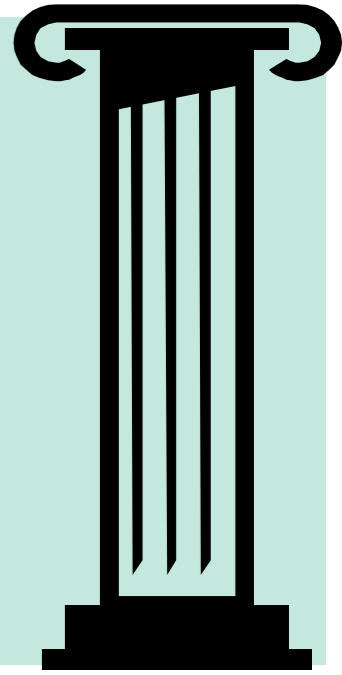
4. Reform the financial system



5. Use measures of real progress

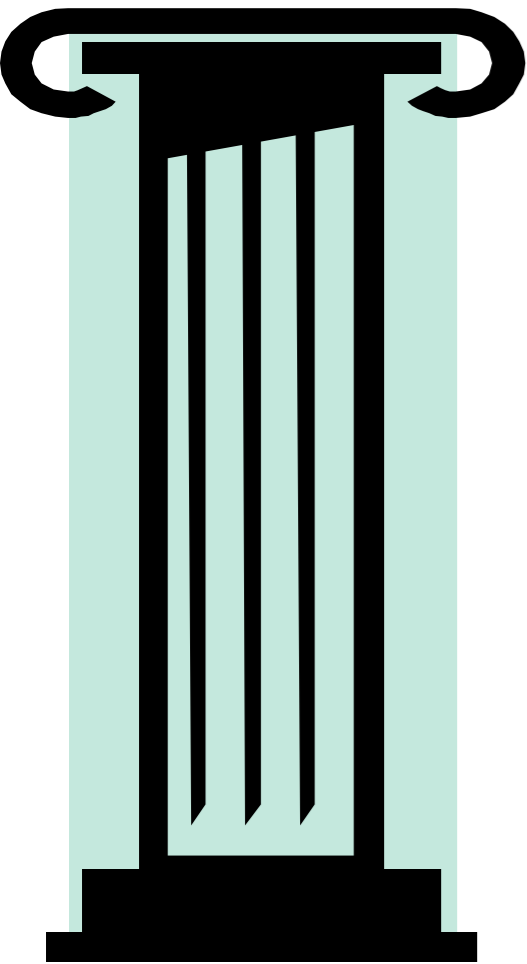


6. Secure meaningful jobs



7. Change business practices

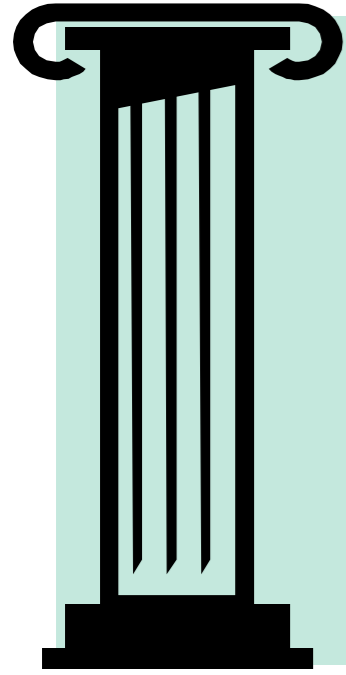
Three Questions for Each Pillar



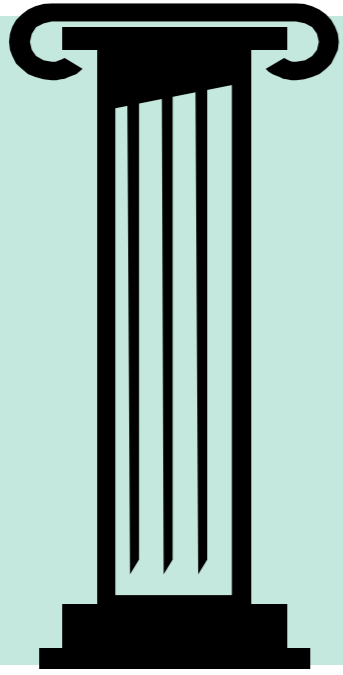
What are we doing?

What could we do instead?

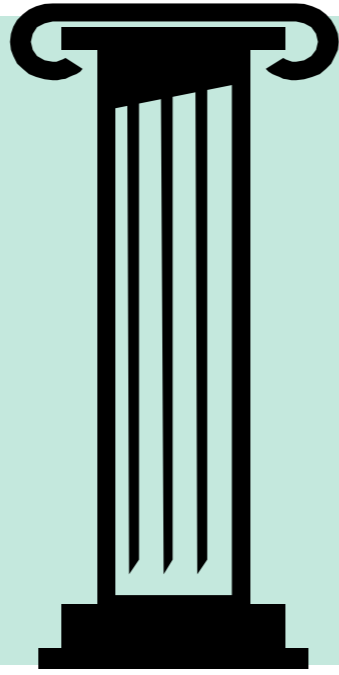
Where do we go from here?



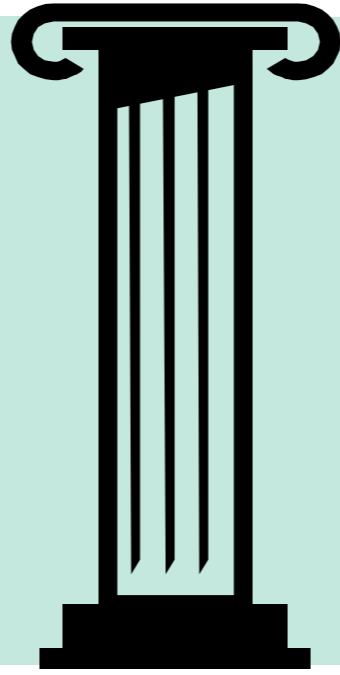
1. Limit materials and energy



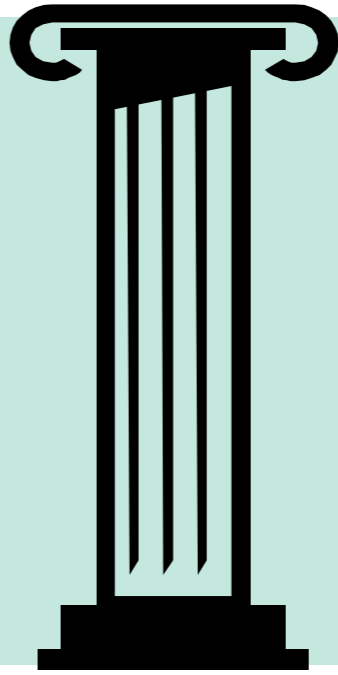
2. Stabilize population



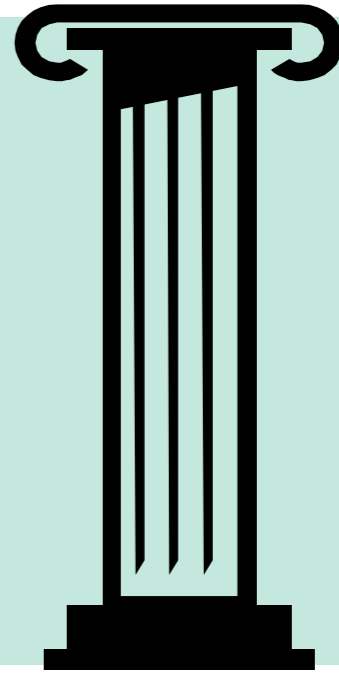
3. Achieve fair income distribution



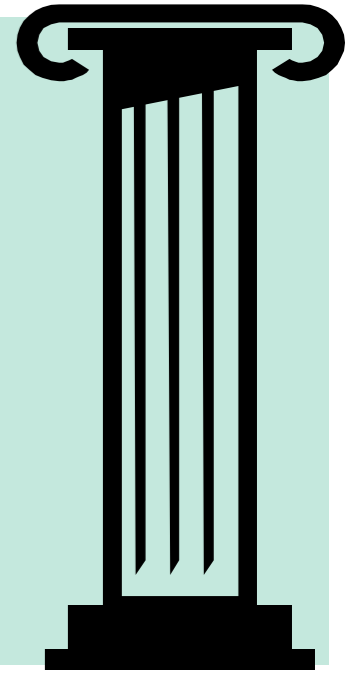
4. Reform the financial system



5. Use measures of real progress



6. Secure meaningful jobs



7. Change business practices

Happy Planet Index



HAPPY
PLANET
INDEX



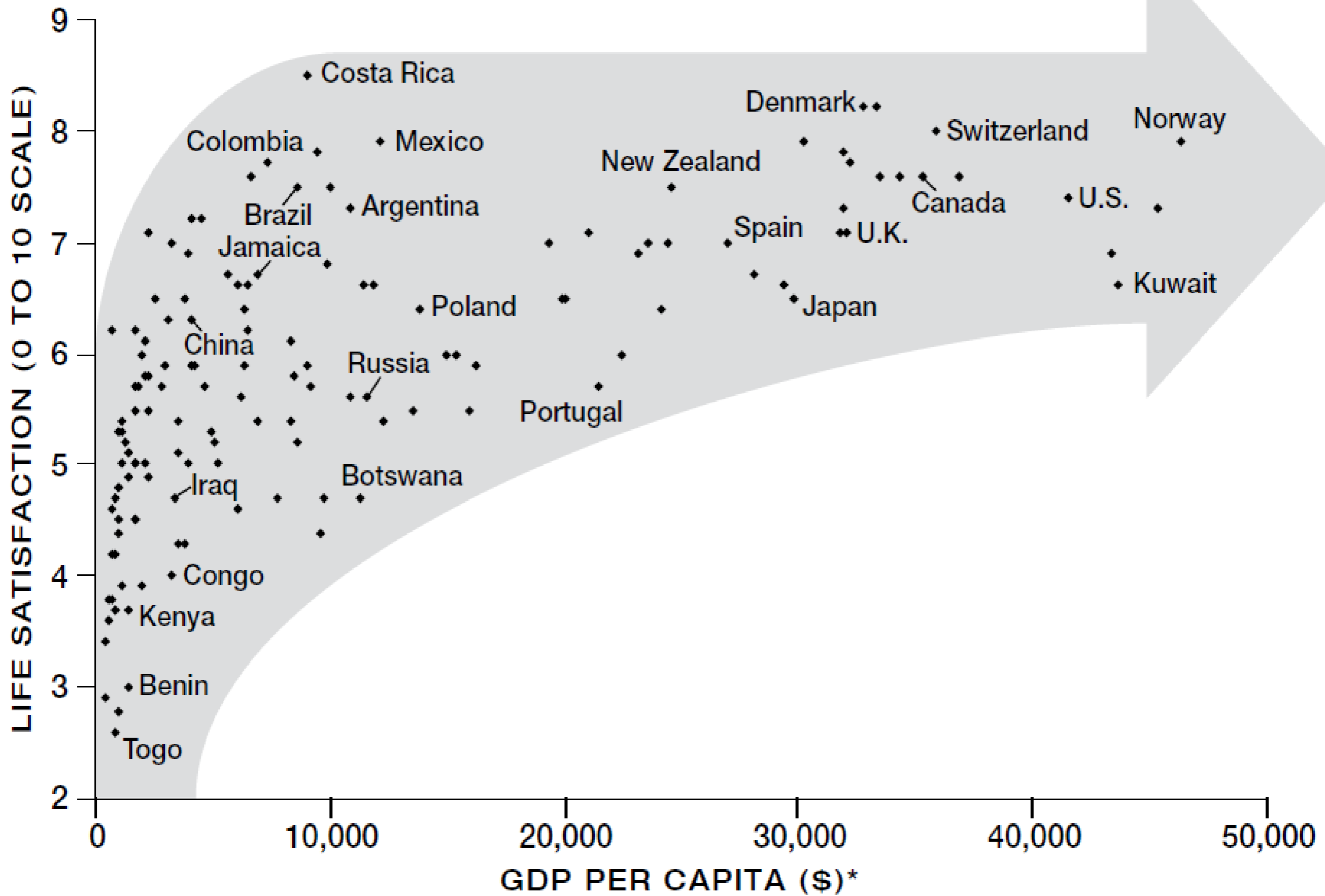
LIFE EXPECTANCY x EXPERIENCED WELLBEING

ECOLOGICAL FOOTPRINT

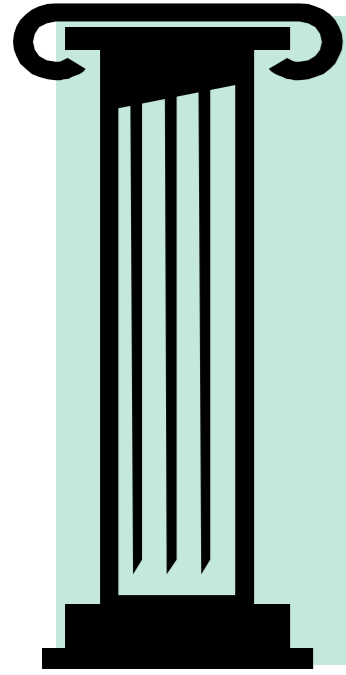
LIFE EXPECTANCY	WELLBEING <small>(Ladder of life)</small>	ECOLOGICAL FOOTPRINT
Less than 65 years	Less than 5/10	Below or at per capita biocapacity (1.56 gha for 2019)
65 - 75 years	5/10 - 6/10	Between per capita biocapacity and 2 times that value (1.56-3.12 gha for 2019)
75 years or more	6/10 or more	More than 2 times per capita biocapacity (3.12 gha or more for 2019)

Selection of Nations Ranked by Happy Planet Index

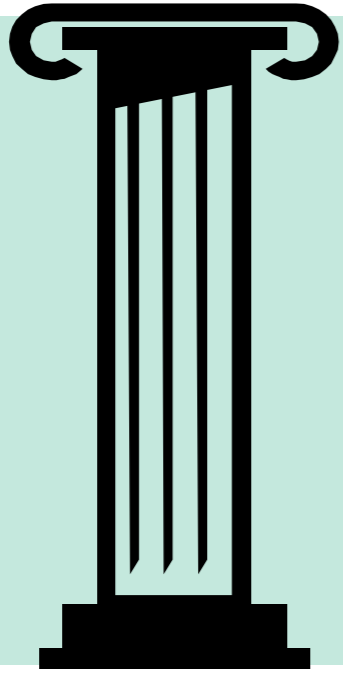
Ranking	Nation	HPI Score (avg = 43)
1.	Costa Rica	62.1
2.	Vanuatu	60.4
3.	Colombia	60.2
4.	Switzerland	60.1
5.	Ecuador	58.8
6.	Panama	57.9
7.	Jamaica	57.9
8.	Guatemala	34.3
9.	Honduras	34.3
10.	Uruguay	29.8
11.	New Zealand	29.2
94.	China	41.9
122.	United States	37.4
124.	Tanzania	37.0
131.	Russia	34.9
152.	Qatar	24.3



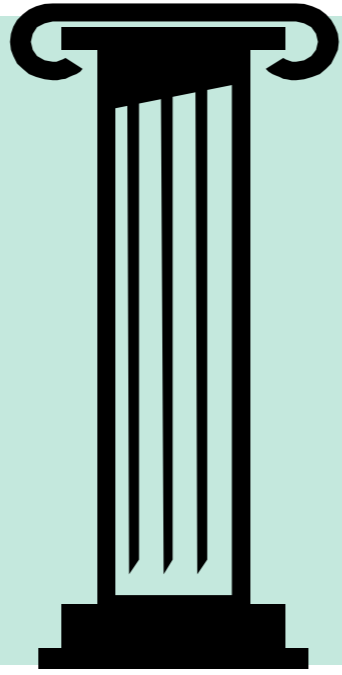
Sources: Veenhoven "World Database of Happiness" and World Bank "World Development Indicators."



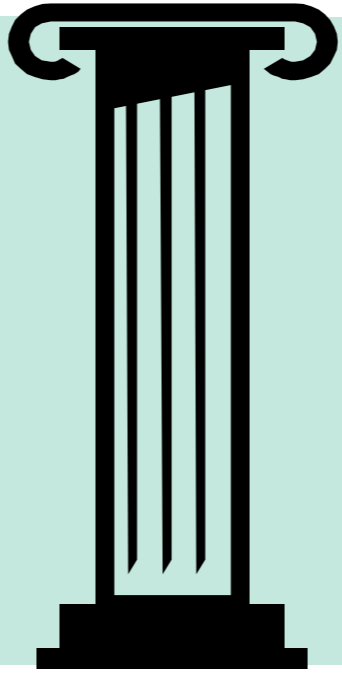
1. Limit materials and energy



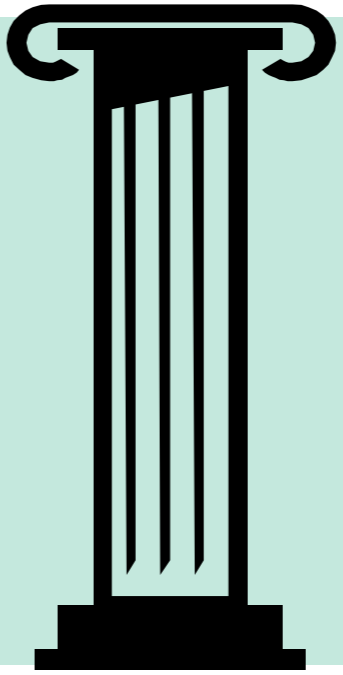
2. Stabilize population



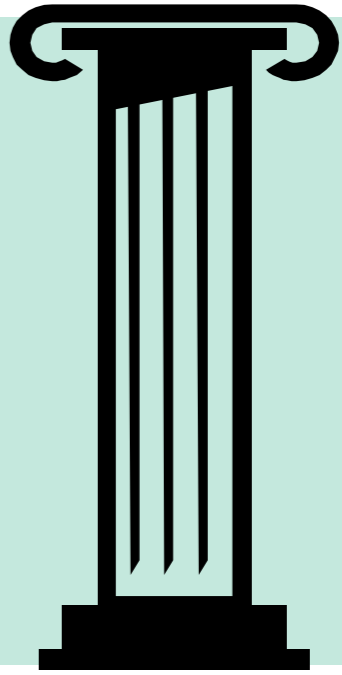
3. Achieve fair income distribution



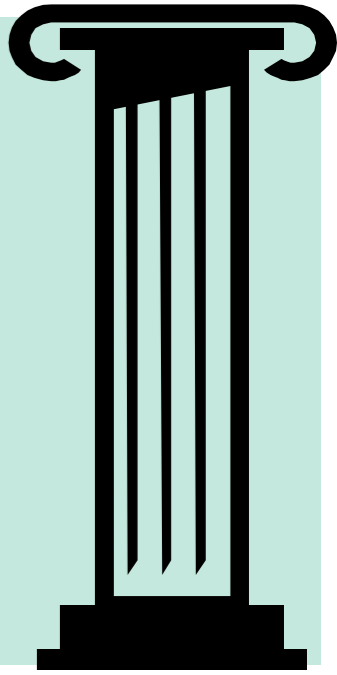
4. Reform the financial system



5. Use measures of real progress



6. Secure meaningful jobs



7. Change business practices

Property Rights and the Commons



“Logical” Outcome with Private Property Rights



Outcome with Commons (Ownership by All)



- Managed by a trust that upholds ecological values.
- Limited logging that allows forest recovery.
- Rent paid by loggers to the trust.
- Dividends to all owners of the commons.





Car-free Sundays? IEA sets out 10-point plan to reduce global oil demand

Energy watchdog says measures could help cut oil usage by 2.7m barrels a day within four months.



1. Reduce highway speed limits.
2. Work from home (eliminate commutes).
3. Go car-free on Sundays.
4. Make public transport cheaper.
5. Alternate private car access to city roads.
6. Increase car sharing.
7. Promote efficient freight truck driving.
8. Use trains.
9. Avoid business air travel.
10. Adopt electric and more efficient vehicles.

The Redd Food Hub









post carbon institute

POSTCARBON.org

RESILIENCE.org

Rob Dietz
rob@postcarbon.org

