

Overview



The Planetary Phase

Transitions

Scenarios

The Great Transition



Earthland

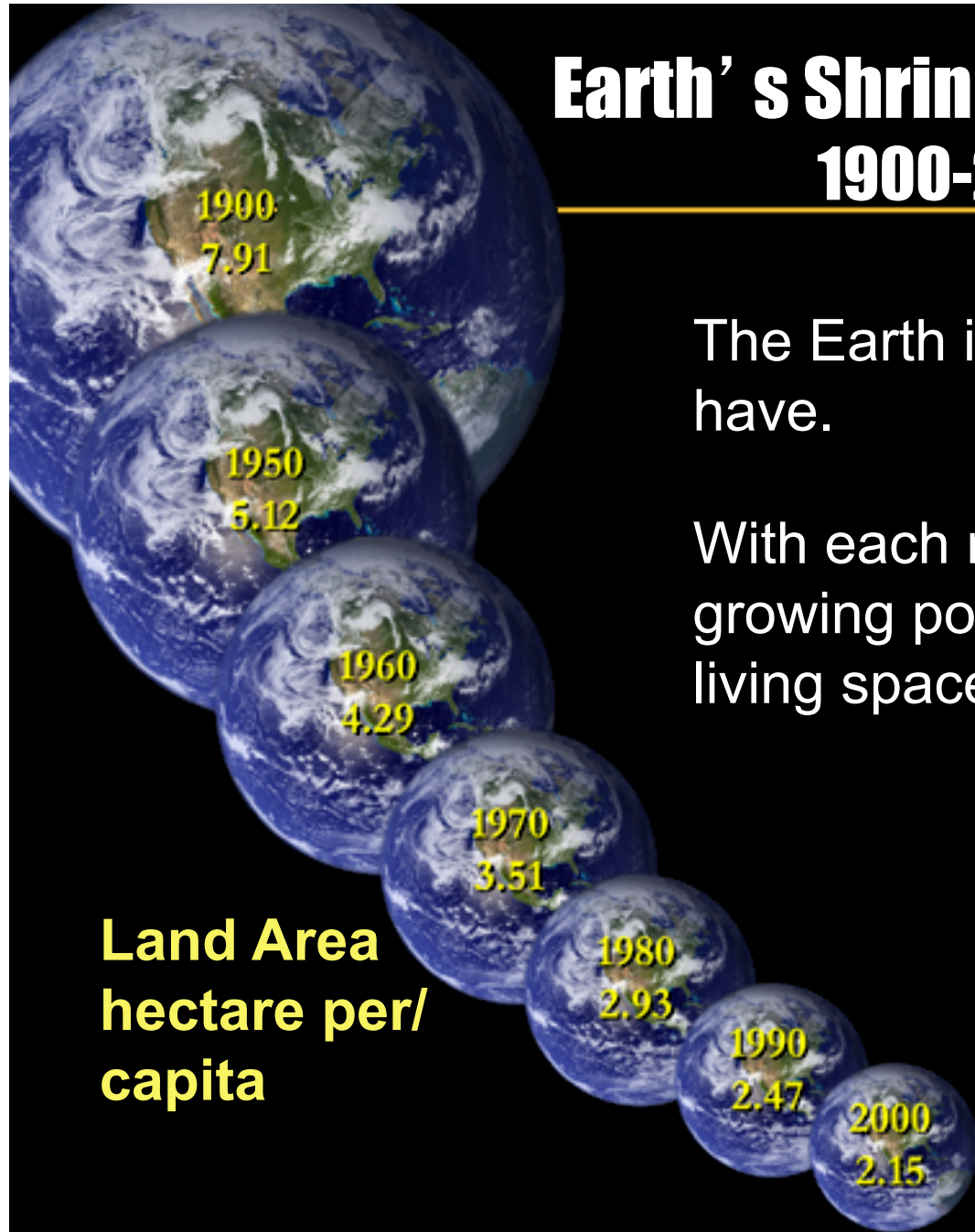
**THE WORLD AS A
SINGLE COUNTRY!**

**DUALISTIC, DIVERSE,
UNEQUAL, WEAKLY
GOVERNED, UNABLE
TO ACT COLLECTIVELY
EVEN IN THE FACE OF
CLEAR AND PRESENT
DANGER.**

**AND DANGERS THERE
ARE PLENTY!**



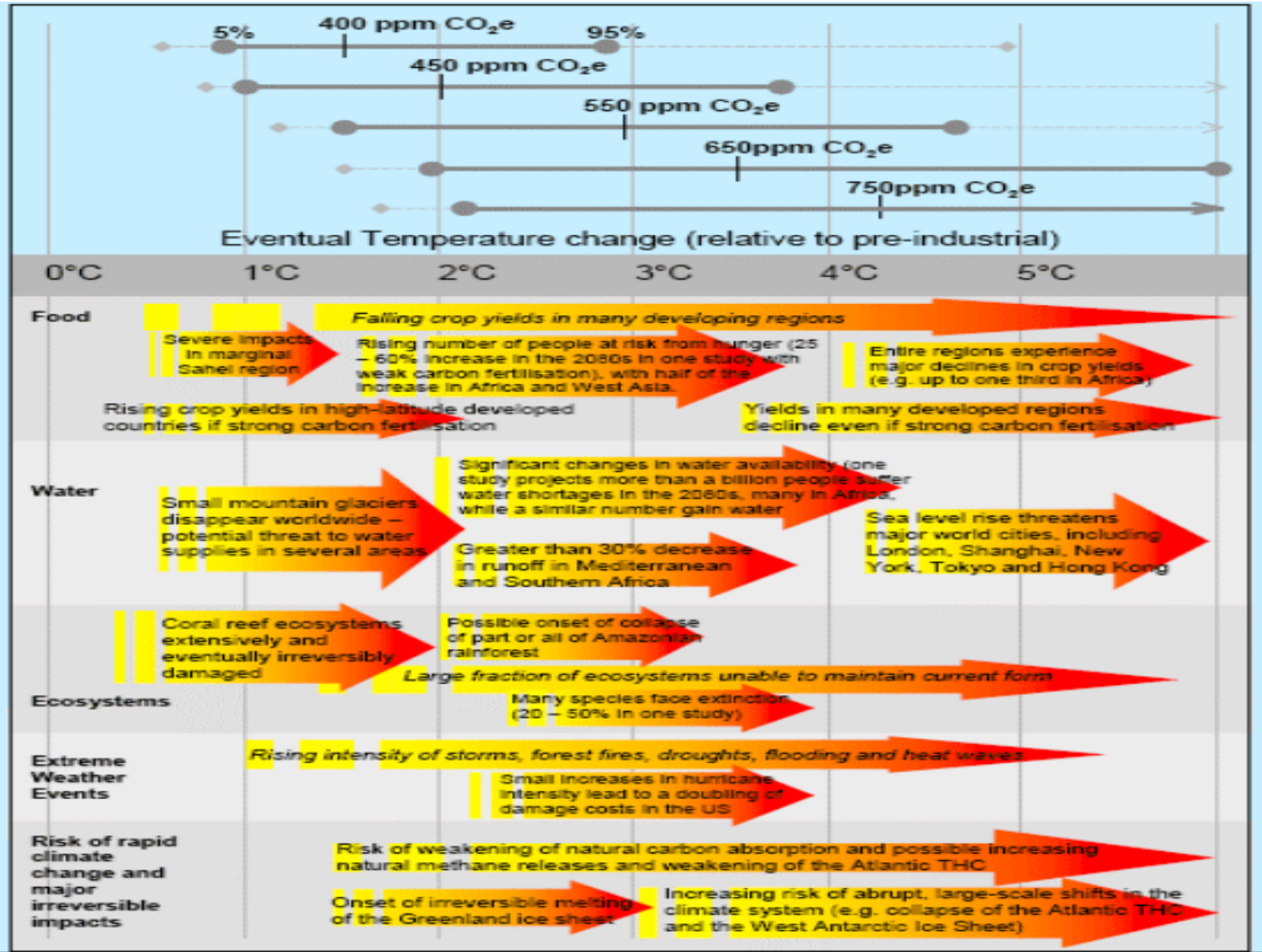
Earth's Shrinking Biosphere 1900-2000 AD



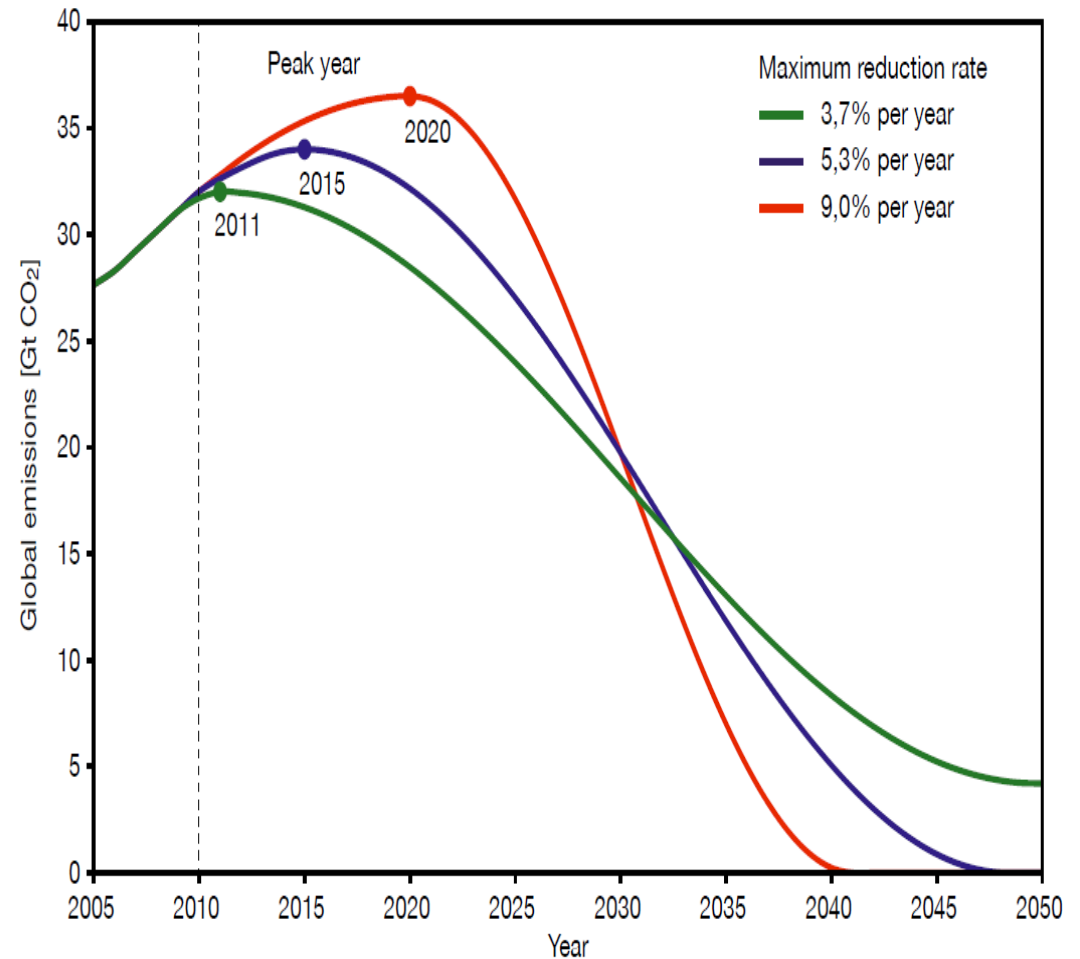
**Land Area
hectare per/
capita**

The Earth is the only home we have.

With each new person added to our growing population, the amount of our living space decreases.

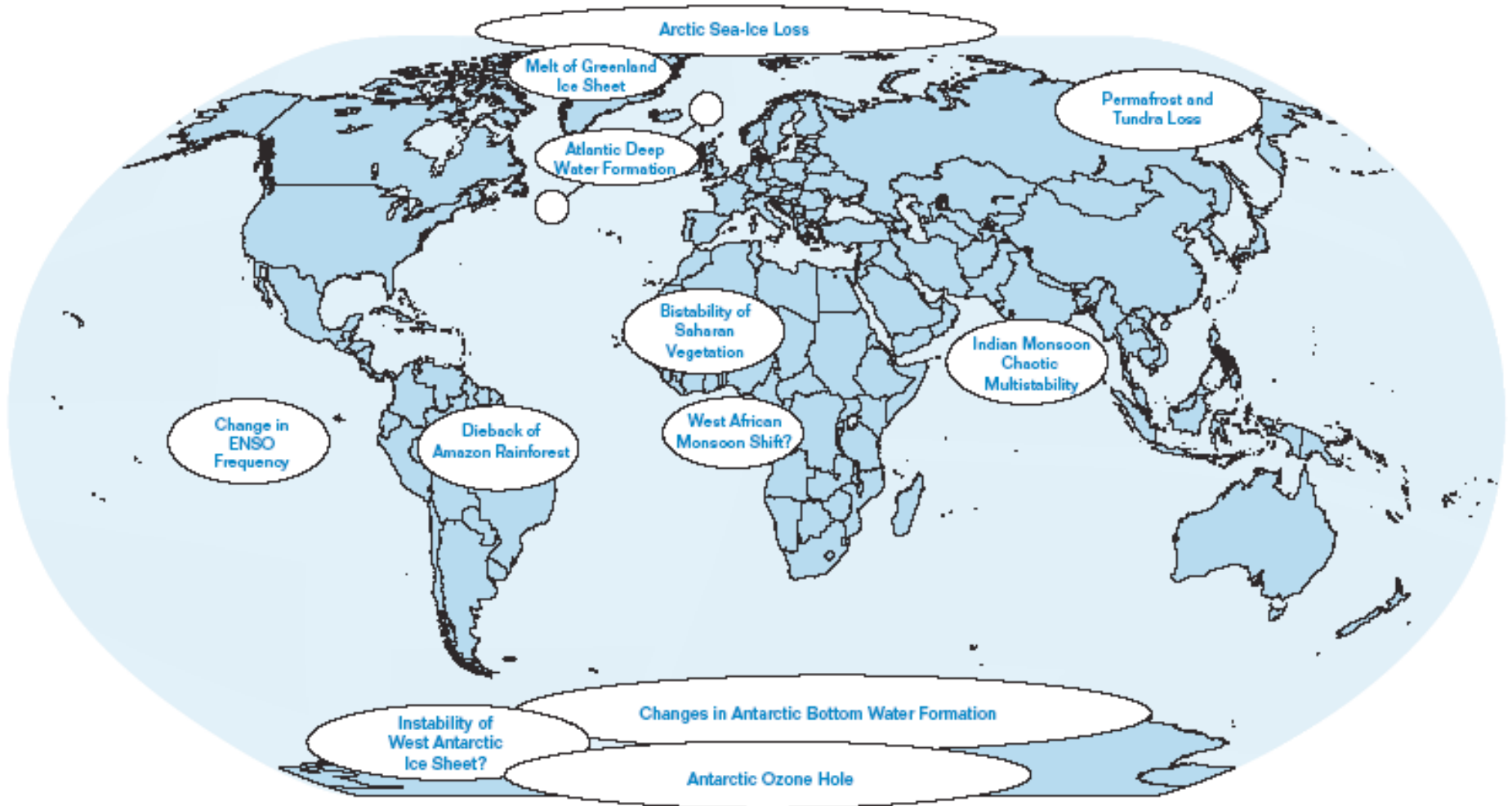


The Conventional Approach



Emission pathways for at least 67% probability of staying under 2 °C warming. The total “emissions budget” for 2010-50 is 750 Gt.

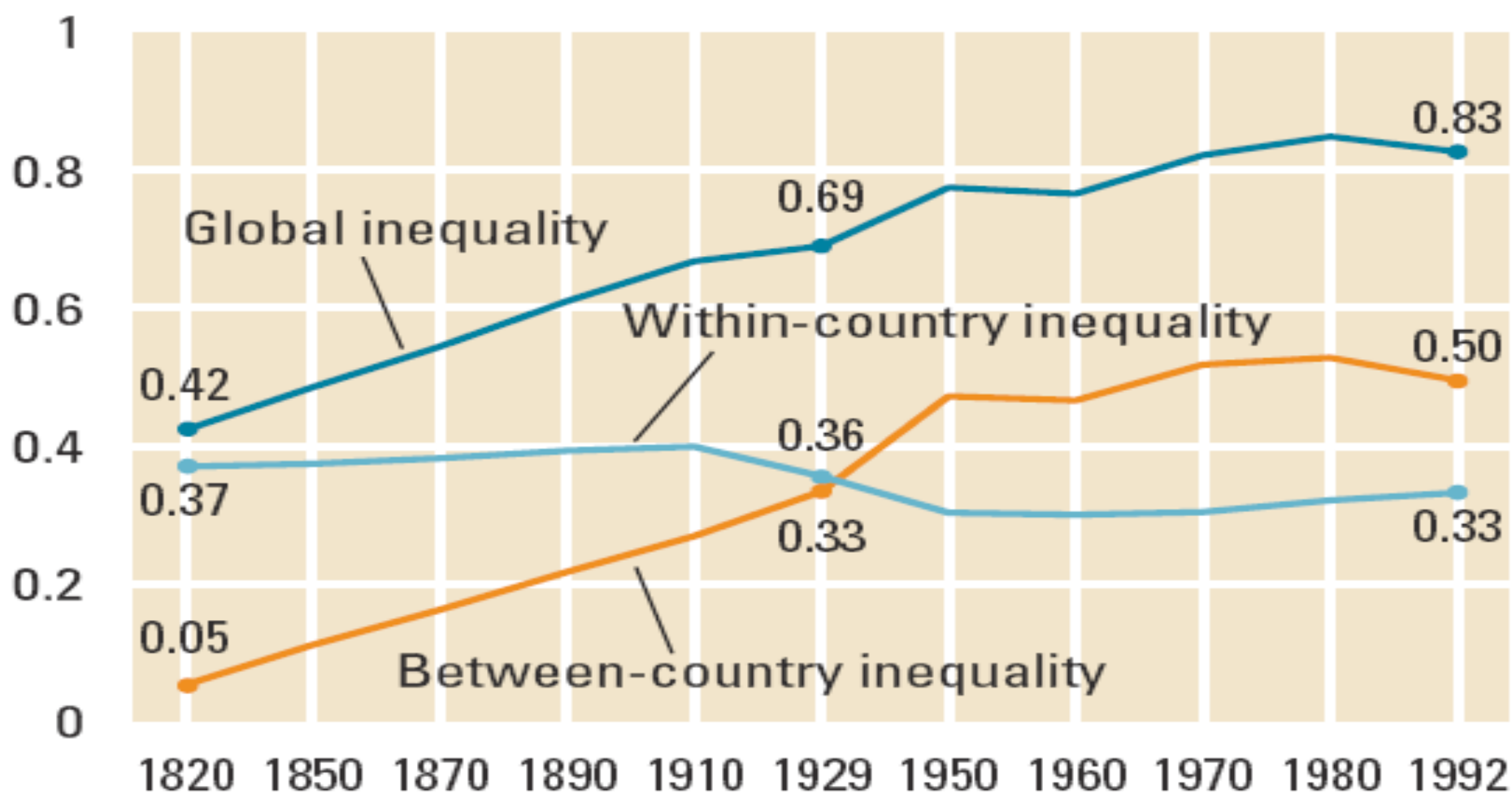
Tipping Points



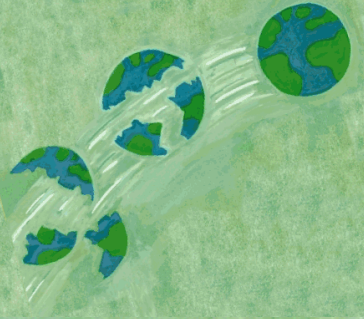
The Earth's "Tipping Points"

Figure 3.10 Inequality between countries became much more important over the long run

Mean log deviation



Source: Authors' manipulation of data from Bourguignon and Morrisson (2002).

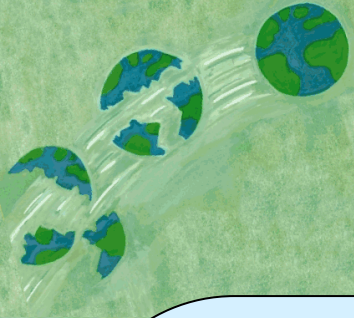


An Illustration

	South Africa		Earthland	
	White	Black	North	South
Share of Population (%)	19.1	80.9	15	81
Land Allocation	87	13		
Share of Income (%)	76	<20	77.2	20.52
Ratio of average earnings	14	1	20.5	1
Movement restrictions	No	yes	Few	Many
Ownership restrictions	No	yes	No	No
Right to due process	Yes	restricted	Yes	Hmmm.....

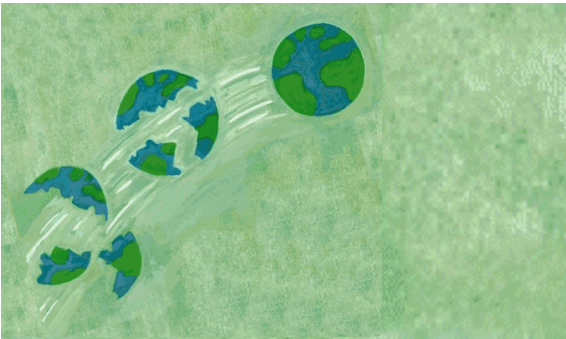


НЕ НА АПАРТЕЙДА



Growth or Catastrophe

- **WE DON'T KNOW HOW TO LIVE WITHOUT GROWTH:**
 - **IT IS OUR ONLY SURE RECIPE FOR OVERCOMING THE GROTESQUE GLOBAL INEQUALITY**
 - **NO COUNTRY, HOWSOEVER RICH, KNOWS HOW TO SURVIVE WITHOUT IT**
- **WE WILL NOT LIVE IF GROWTH CONTINUES ON ITS EXISTING PATTERN, BECAUSE IT LEADS TO ECOLOGICAL DESTRUCTION**



Eco-Communal Visions



"Remember how I said I was happiest when we had nothing?"



The South Commission

WERE ALL HUMANITY A SINGLE NATION-STATE, THE PRESENT NORTH-SOUTH DIVIDE WOULD MAKE IT AN UNVIABLE, SEMI-FEUDAL ENTITY, SPLIT BY INTERNAL CONFLICTS. ITS SMALL PART IS ADVANCED, PROSPEROUS, POWERFUL; ITS MUCH BIGGER PART IS UNDERDEVELOPED, POOR, POWERLESS. A NATION SO DIVIDED WITHIN ITSELF WOULD BE RECOGNIZED AS UNSTABLE. A WORLD SO DIVIDED SHOULD LIKEWISE BE RECOGNIZED AS UNSTABLE. AND THE POSITION IS WORSENING, NOT IMPROVING.



Six billion characters...

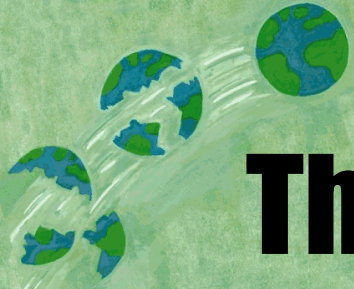
[FOR YOU] WHATEVER IS A REALITY TODAY, WHATEVER YOU TOUCH AND BELIEVE IN AND THAT SEEMS REAL FOR YOU TODAY, IS GOING TO BE – LIKE THE REALITY OF YESTERDAY – AN ILLUSION TOMORROW....

BUT [OUR REALITY] DOESN'T CHANGE! DO YOU SEE? THAT'S THE DIFFERENCE! OURS DOESN'T CHANGE, IT CAN'T CHANGE, IT CAN NEVER BE DIFFERENT, NEVER, BECAUSE IT IS ALREADY DETERMINED, LIKE THIS, FOR EVER, THAT'S WHAT'S SO TERRIBLE! WE ARE AN ETERNAL REALITY.



Earthland: Imagined Community

- **GLOBALIZATION AND NATIONALISM**
 - LANGUAGE, TRADE, TRAVEL
- **NATIONALISM AND IDENTITY**
 - FALK: STEWARDS, ACTIVISTS, ENTREPRENEURS, VISIONARIES
- **IN THE BEGINNING, THERE IS DEATH**



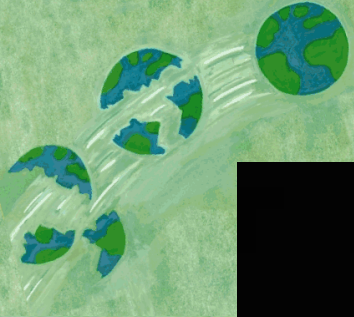
The beginning is like a god

- **SILENT SPRING 1962**
- **THIRTEEN DAYS 1962**
- **THE POPULATION BOMB 1968**
- **TRAGEDY OF THE COMMONS 1968**
- **THE CLOSING CIRCLE 1971**
- **LIMITS TO GROWTH 1972**
- **THE SHALLOW AND THE DEEP 1972**
- **STOCKHOLM UNCHE 1972**
- **FIRST POSTER OF THE BLUE PLANET 1972**

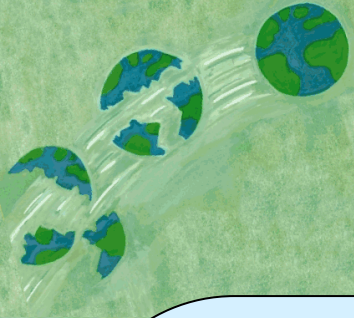
A close-up photograph of reddish-brown soil, likely from a desert or arid region. The soil is textured and uneven, with some darker patches and small roots visible. The lighting is bright, creating strong shadows and highlights. Overlaid on the center of the image is the text "Earth was the Ever Forgiving Mother" in a bold, white, sans-serif font.

Earth was the Ever Forgiving Mother

Now its the Unforgiving Child

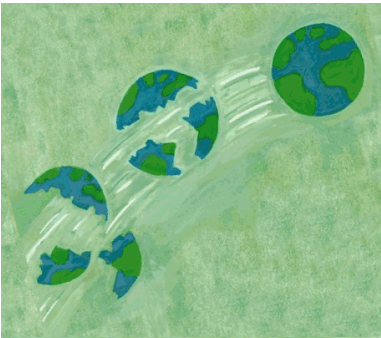


FOTOCERACH



But Some Haven't Heard Yet

- **IN 30,000 WORDS, ONLY 30 (THAT IS CORRECT, 30), RECOGNIZE THAT WE NOW LIVE IN A UNIFIED WORLD, “THERE IS NO LONGER DIVISION BETWEEN WHAT IS FOREIGN AND WHAT IS DOMESTIC—THE WORLD ECONOMY, THE WORLD ENVIRONMENT, THE WORLD AIDS CRISIS, THE WORLD ARMS RACE—THEY AFFECT US ALL”.**
- **“ENVIRONMENT” MENTIONED EXACTLY ONCE.**
- **A FEW REFERENCES (ALL AFTER 1992) TO TRADE AND TECHNOLOGY.**
- **EVERY PRESIDENT UNTIL JFK MENTIONS THE UN AS A HOPE FOR THE FUTURE – BUT NONE THEREAFTER.**
- **AID MENTIONED POSITIVELY IN HALF THE SPEECHES (GENERALLY AS CHARITY FROM A GREAT HEARTED NATION)**

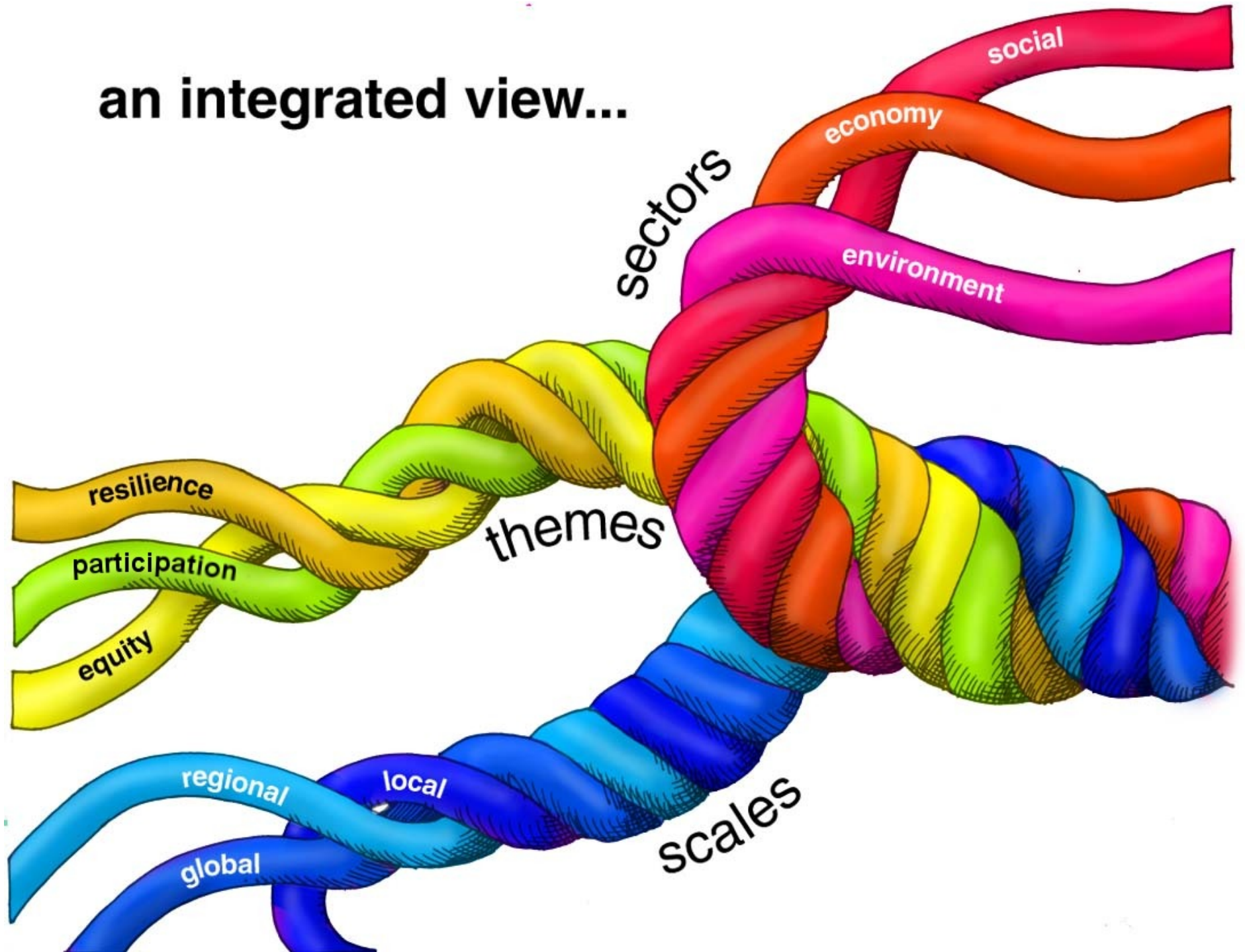


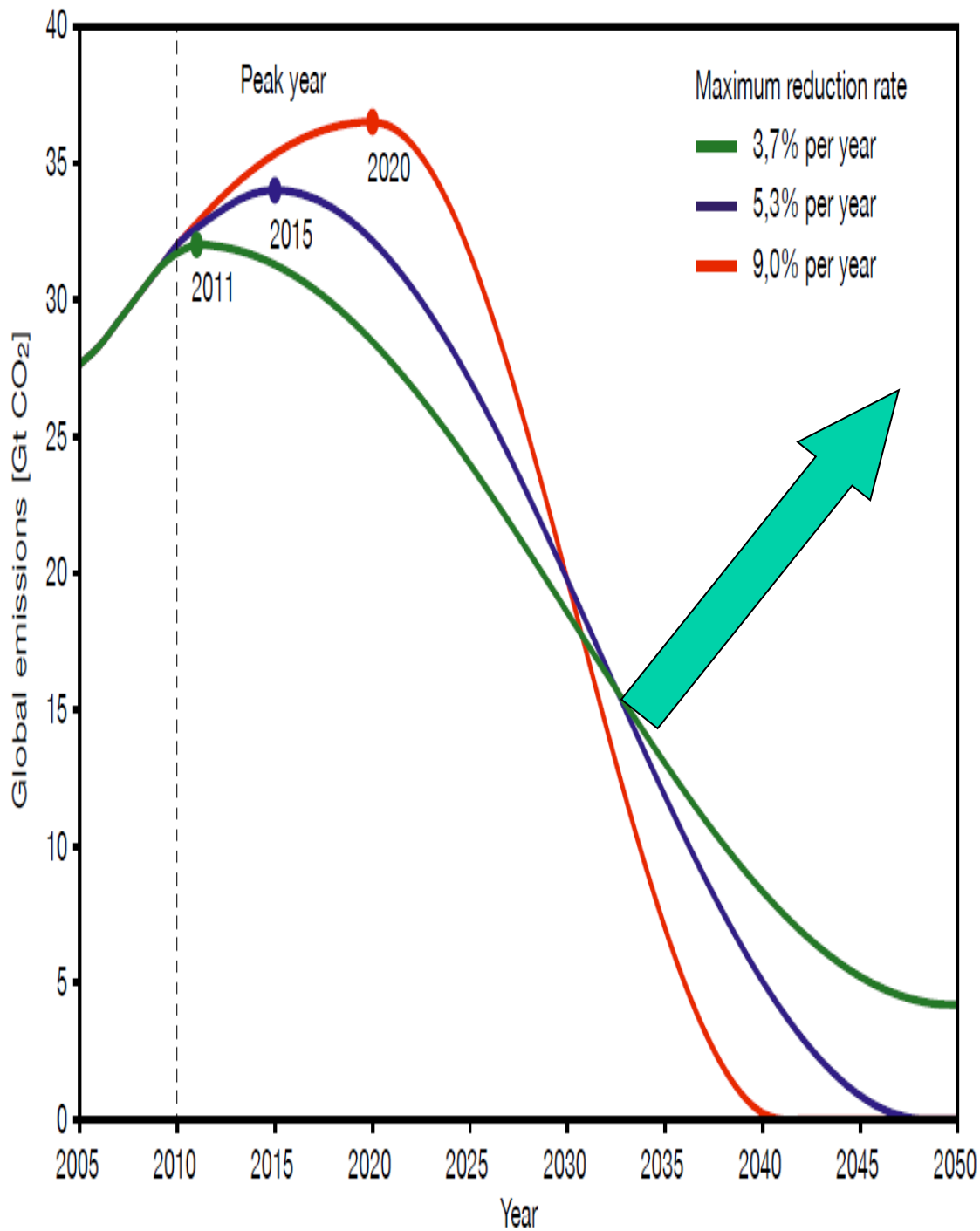
Can Developed Countries Provide Leadership



"Not now, Matthew. This is Daddy's quiet-desperation time."

an integrated view...



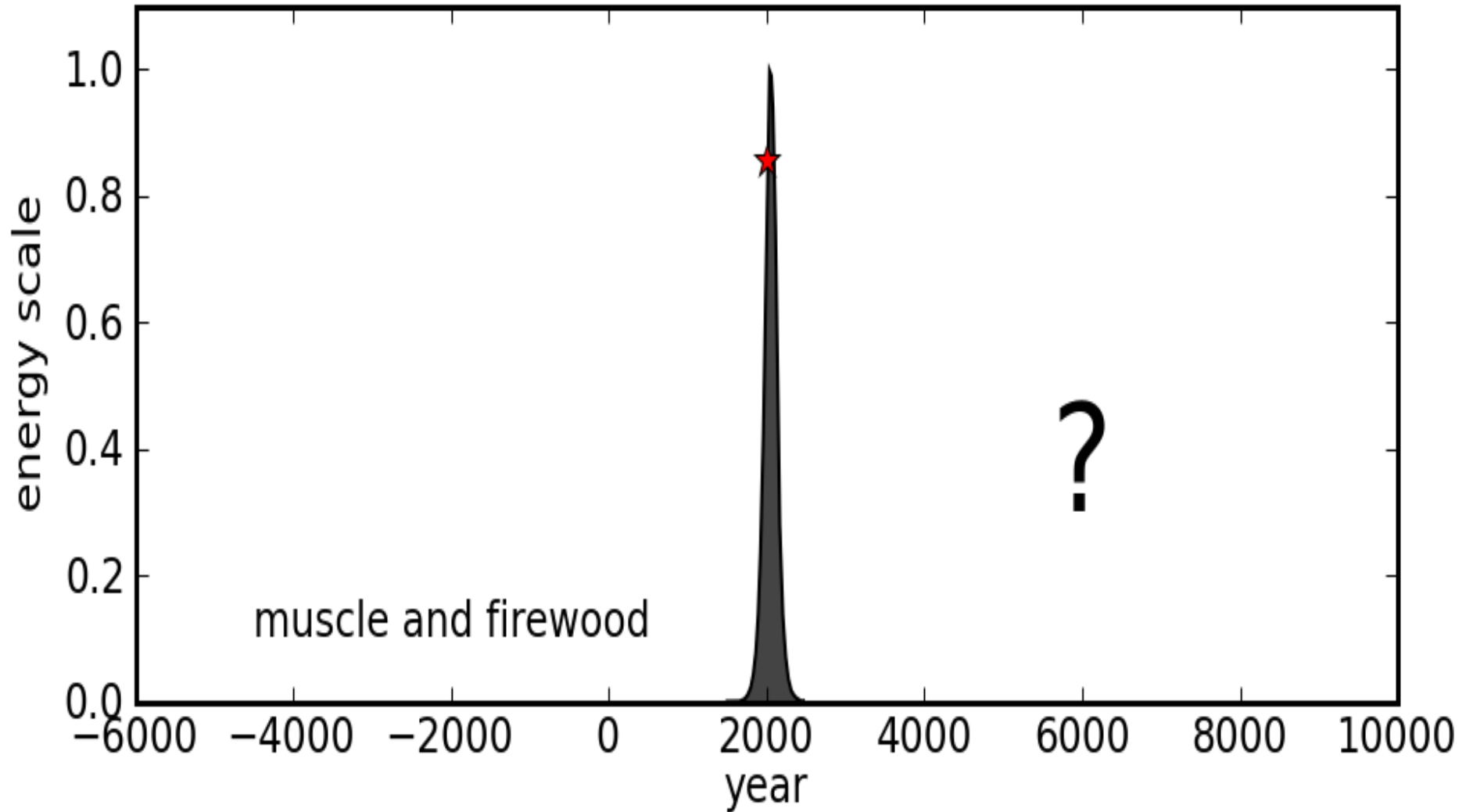


What about Energy?



"I'm right there in the room, and no one even acknowledges me."

Rethinking the Challenge

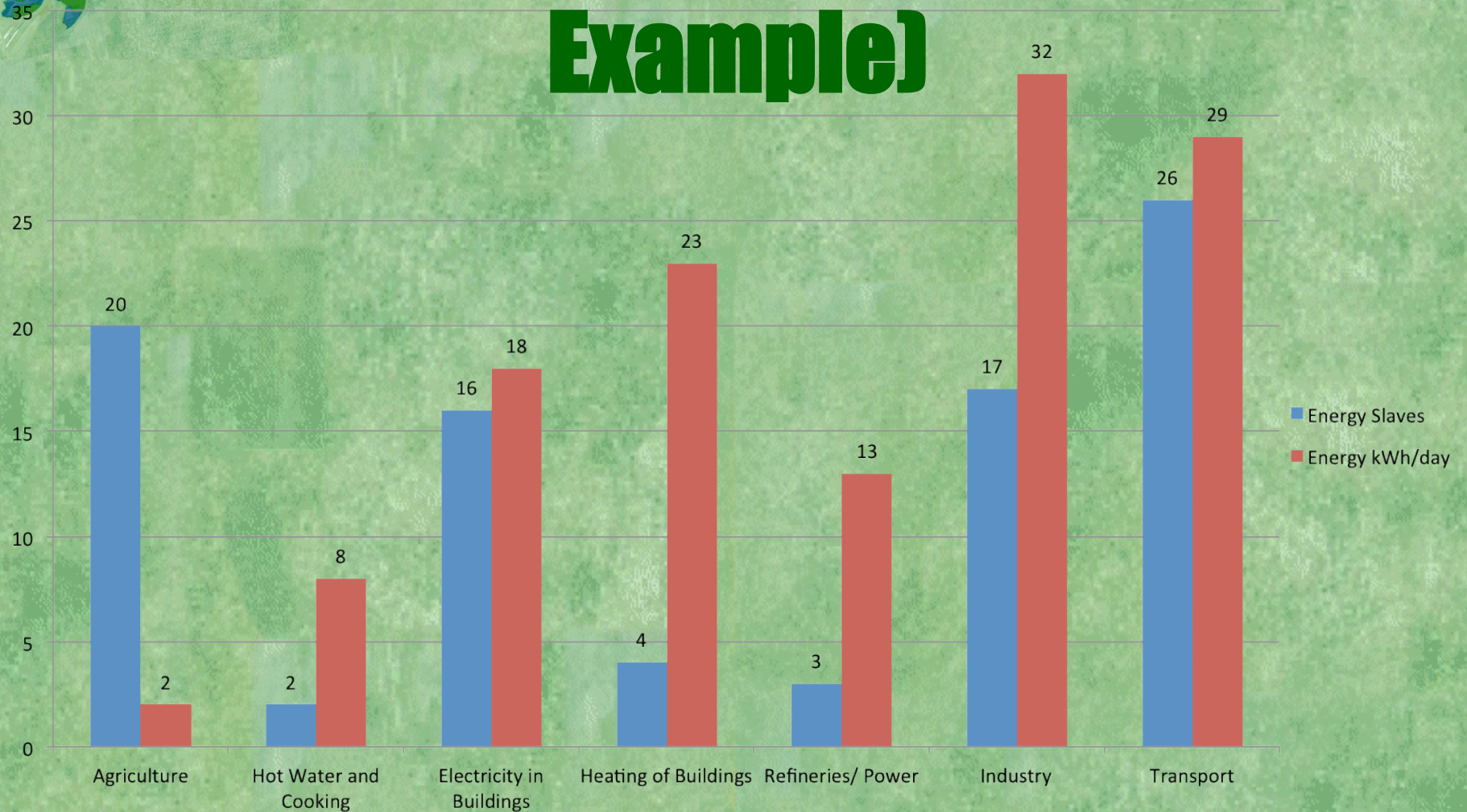




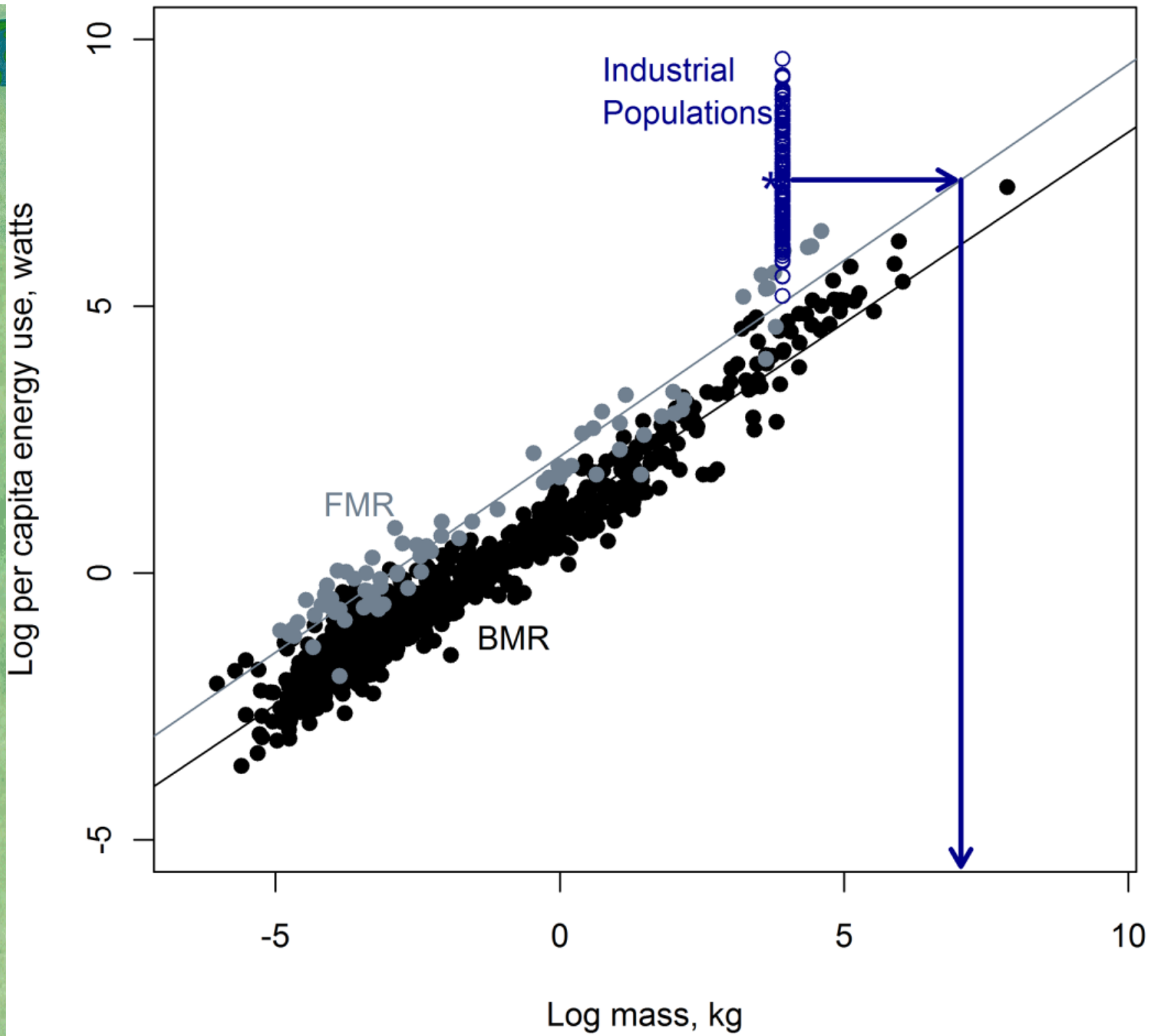
Industrial (and Energy) Revolution

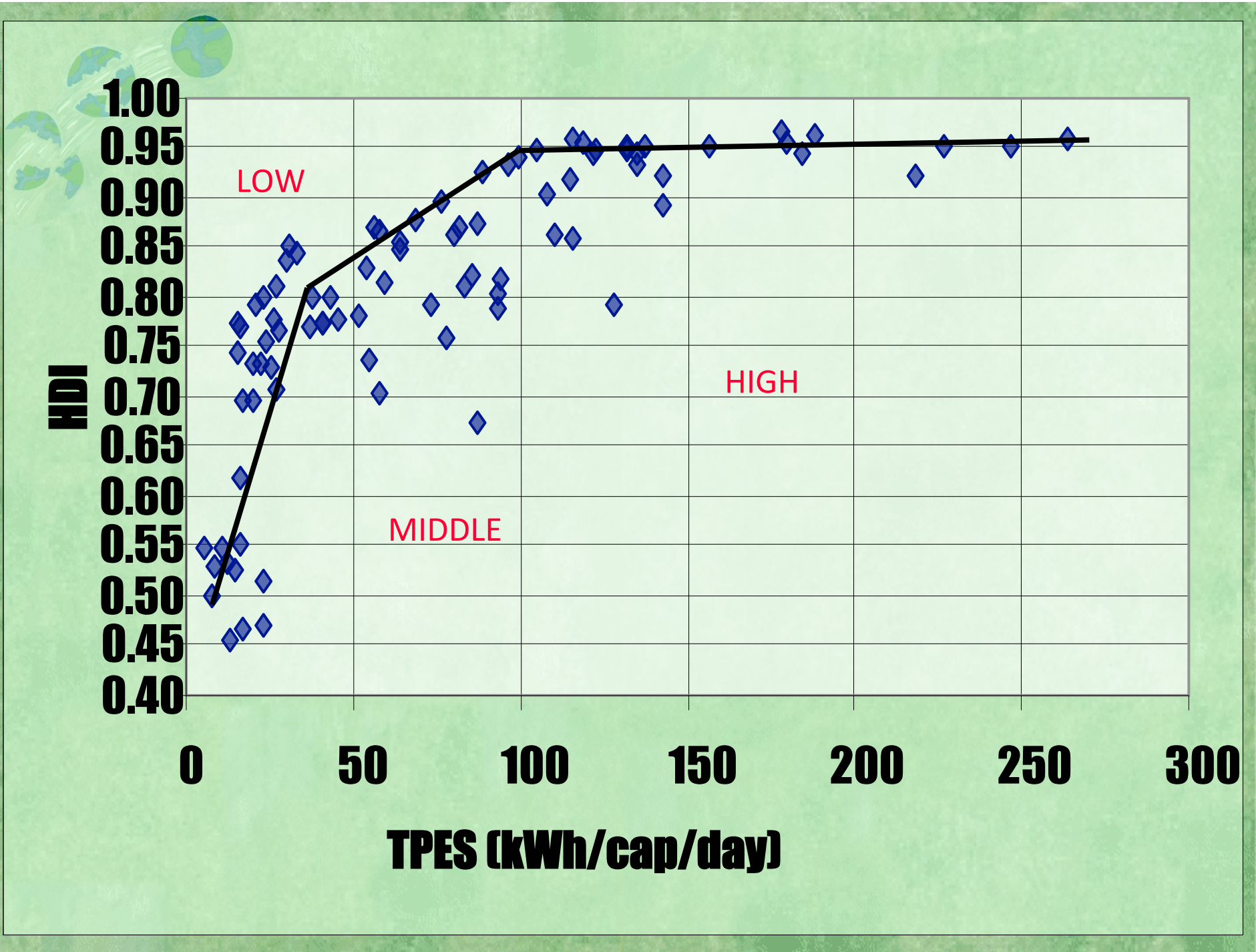
	1800	2000	Δf	2050	Δf
Population (billion)	1	6	x6	10	x1.6
GDP (trillion 1990 \$)	0.3	30	x100	85-110	<x3-x4
Primary energy (EJ)	13	420	x30	600-1,040	x1.5-x2.5
CO ₂ emissions (GtC)	0.3	6.4	x20	5-15	<x1-x3
Mobility (km/person/day)	0.04	40	x1,000	120-160	x3-x4

Energy Slaves (France Example)



Mammals: Mass-Energy Correlation (Basal & Field)

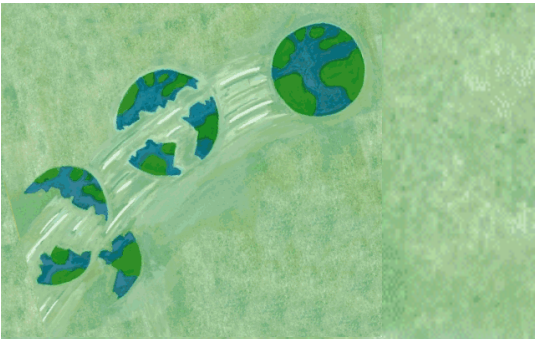






Peak Energy and its Discontents

	1970-80	2008-?
Social Concerns	Mining Safety, acid rain, dams, black lung, nuclear in DEVELOPED COUNTRIES	Mining safety, brown cloud, dams, climate change, nuclear GLOBALLY
Energy	Coal ↑2X↑4X, oil ↑4X, elec ↑3X	Oil ↑6X↓4X, Coal ↑2X↑4X, energy wars?
Food	↑1.5X	↑1.5X
Finance	Interest rates ↑5X, LA Debt Crisis, 3W Debt, Str Adj	Corporate/ MIC Debt, austerity vs bailout
Economy	Global stagflation, jobless growth, lost development decades	Global recession, but countercyclical impact of China



Where is Academia?

© Cartoonbank.com



"I'll be happy to give you innovative thinking. What are the guidelines?"

Scenarios are stories about the future with a logical plot and narrative governing the manner in which events unfold



Branch Points

← a time for choices →

Sources of Uncertainty

- *Ignorance*
- *Surprise*
- *Volition*

SCENARIOS

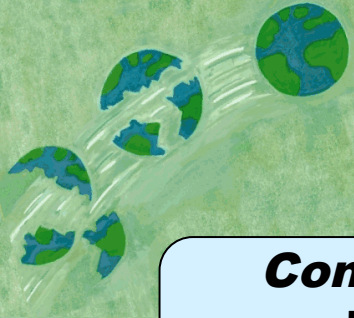




But Where are we Going?



- **From the Age of Plenty to the Age of Limits**
- **The political economy of limits**
- **Human solidarity and individual action**



Global Scenarios

Conventional Worlds



market forces



policy reform

Barbarization



fortress world



breakdown

Great Transitions



eco-communalism

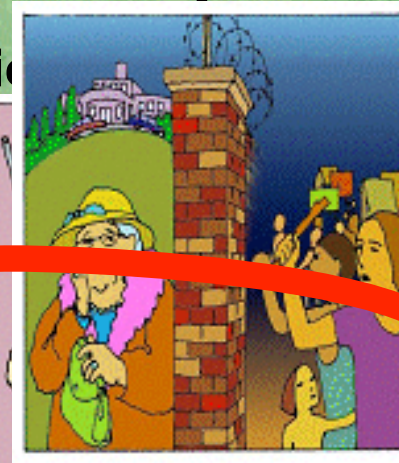


new sustainability



Barbarization

Xenophobia



Conflict



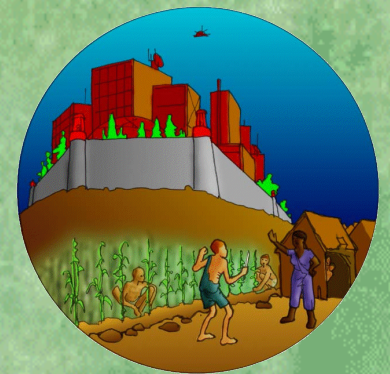
Resentment



Inequity



Environment

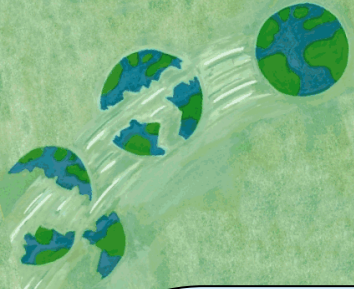




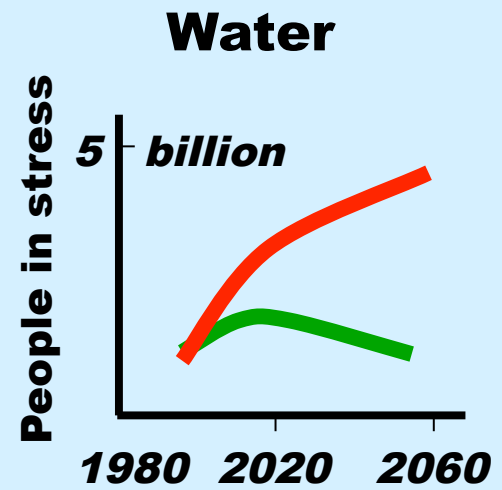
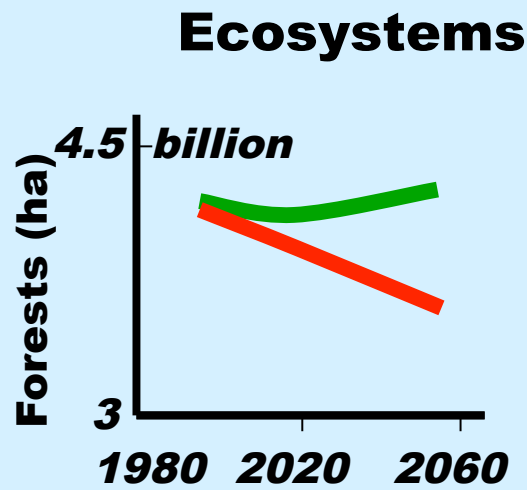
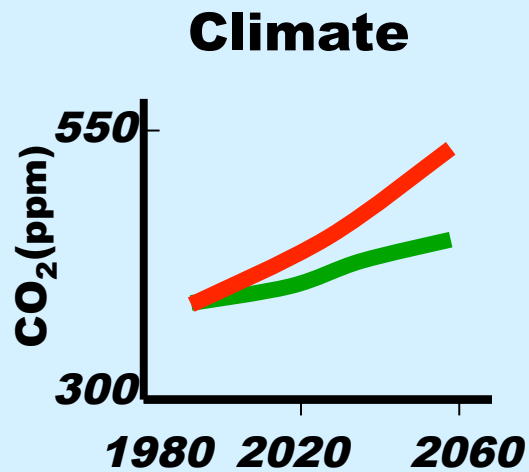
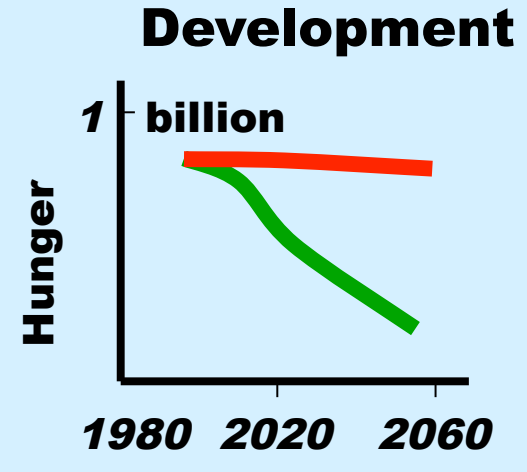
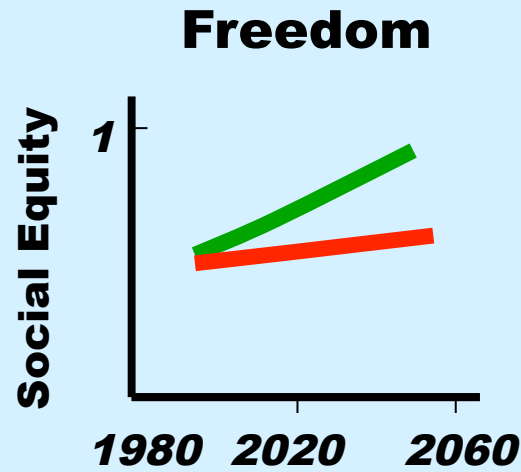
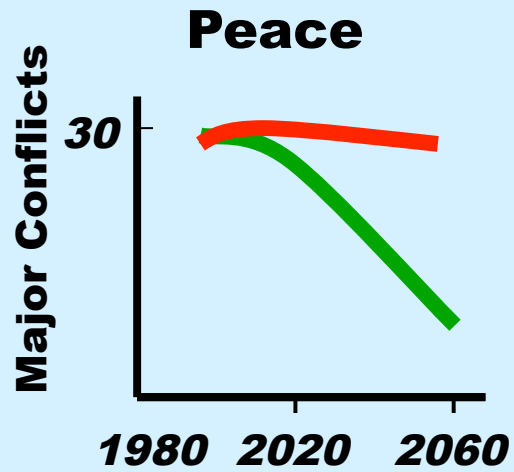
Fortress World



"The entire West Coast division must go. Make it look like an accident."

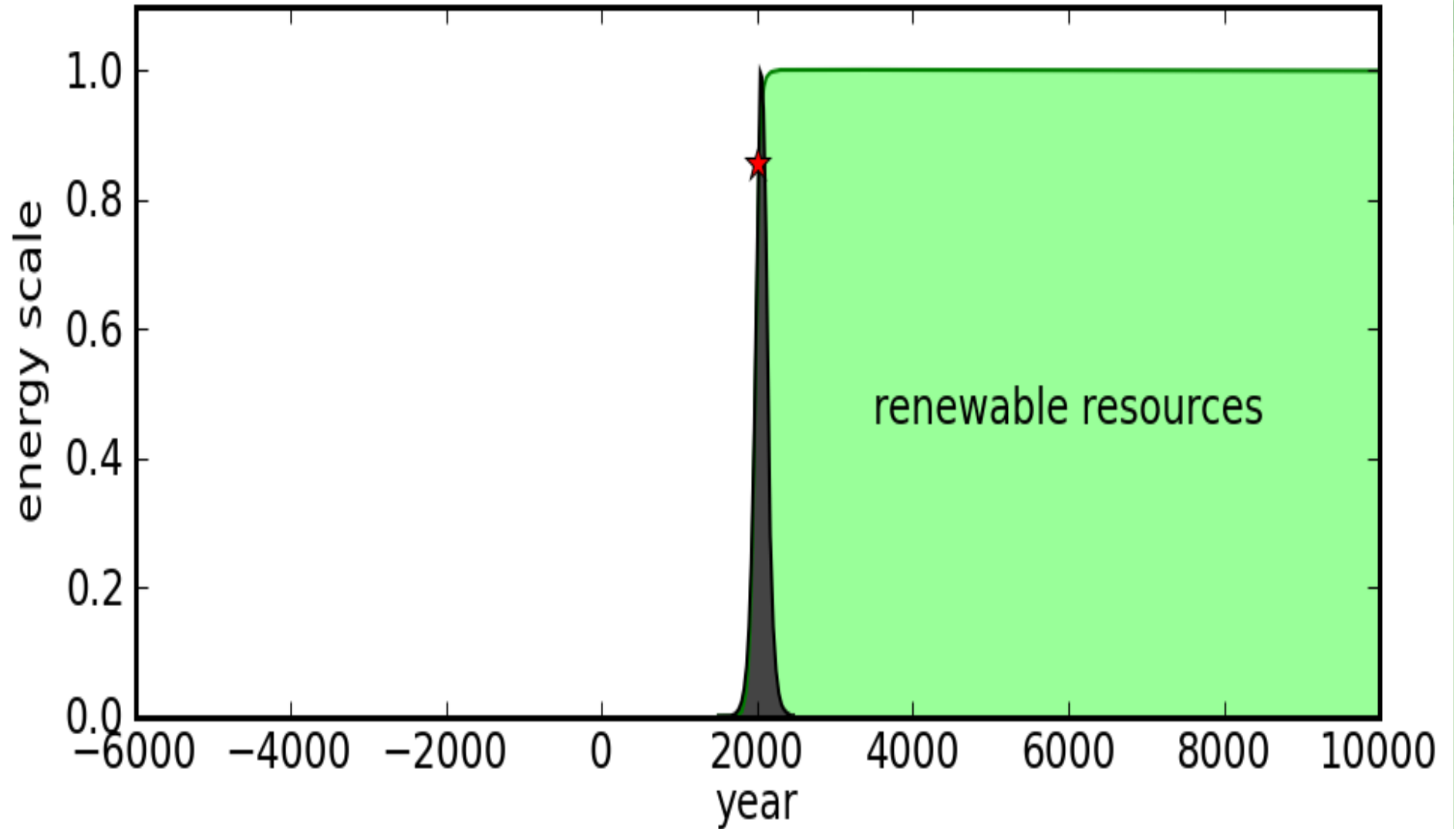


Bending the Curve





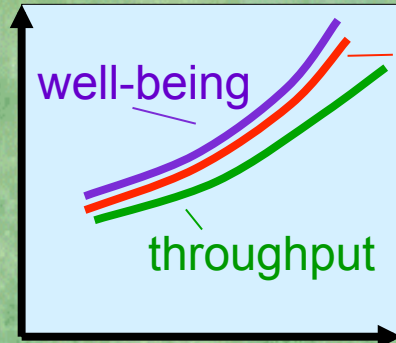
What Does this Tell Us?



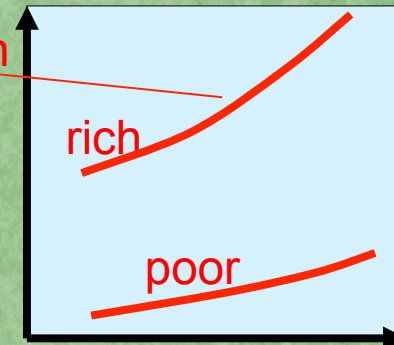


Tools for Transitions

Market Forces



consumption



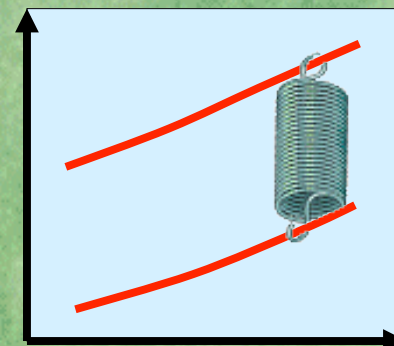
rich

poor

Policy Reform

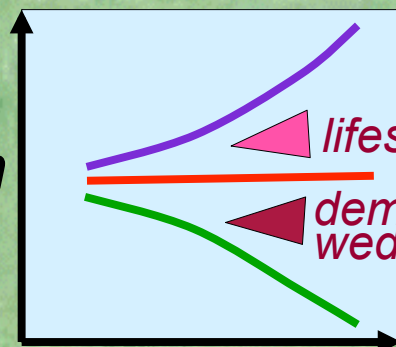


dematerialization wedge



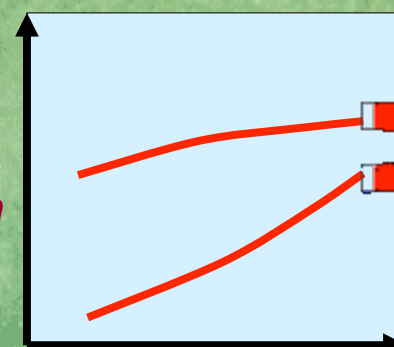
poverty spring

Great Transition

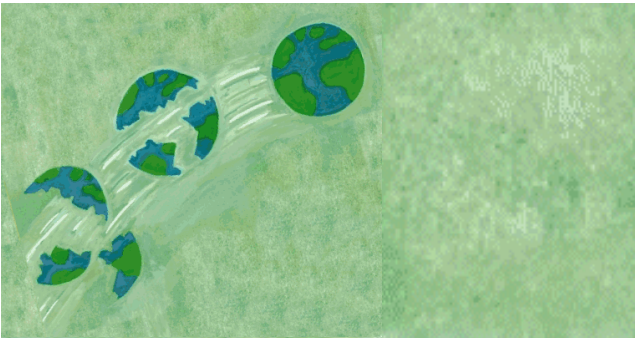


lifestyle wedge

dematerialization wedge



equity magnet



Political Community



"No one is making you do anything you don't want. I'm just saying we're all headed for Dodge City and we think you should come along."



Limits of the Reform Path

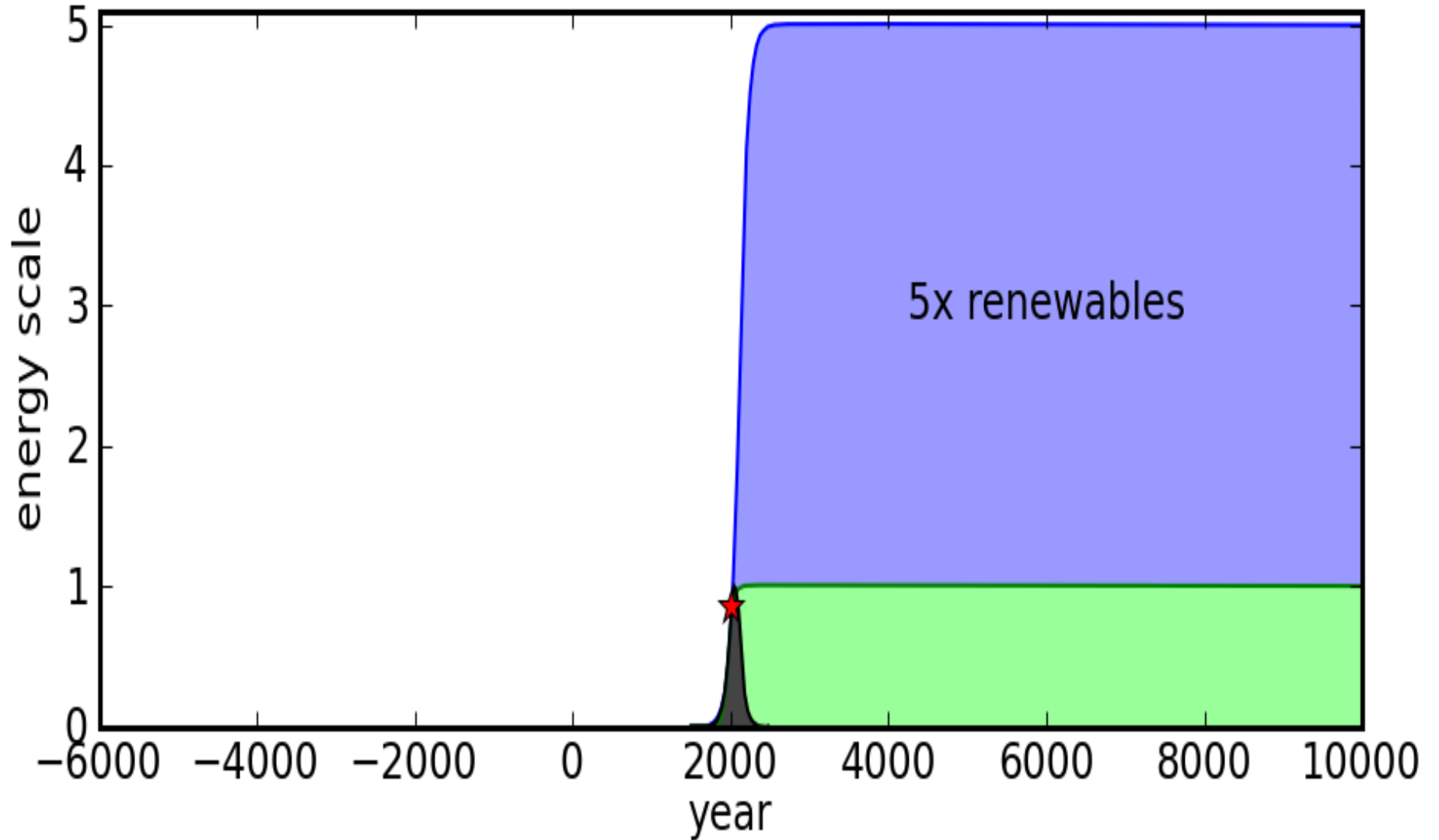
Policy Reform is feasible, in principle – the necessary technologies and policies are available

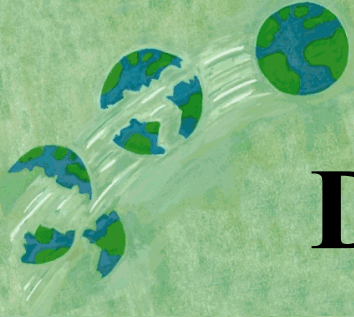
But daunting, in practice – gradually bending highly unsustainable trends imposes immense challenges

The critical uncertainty – where would the political will come from?

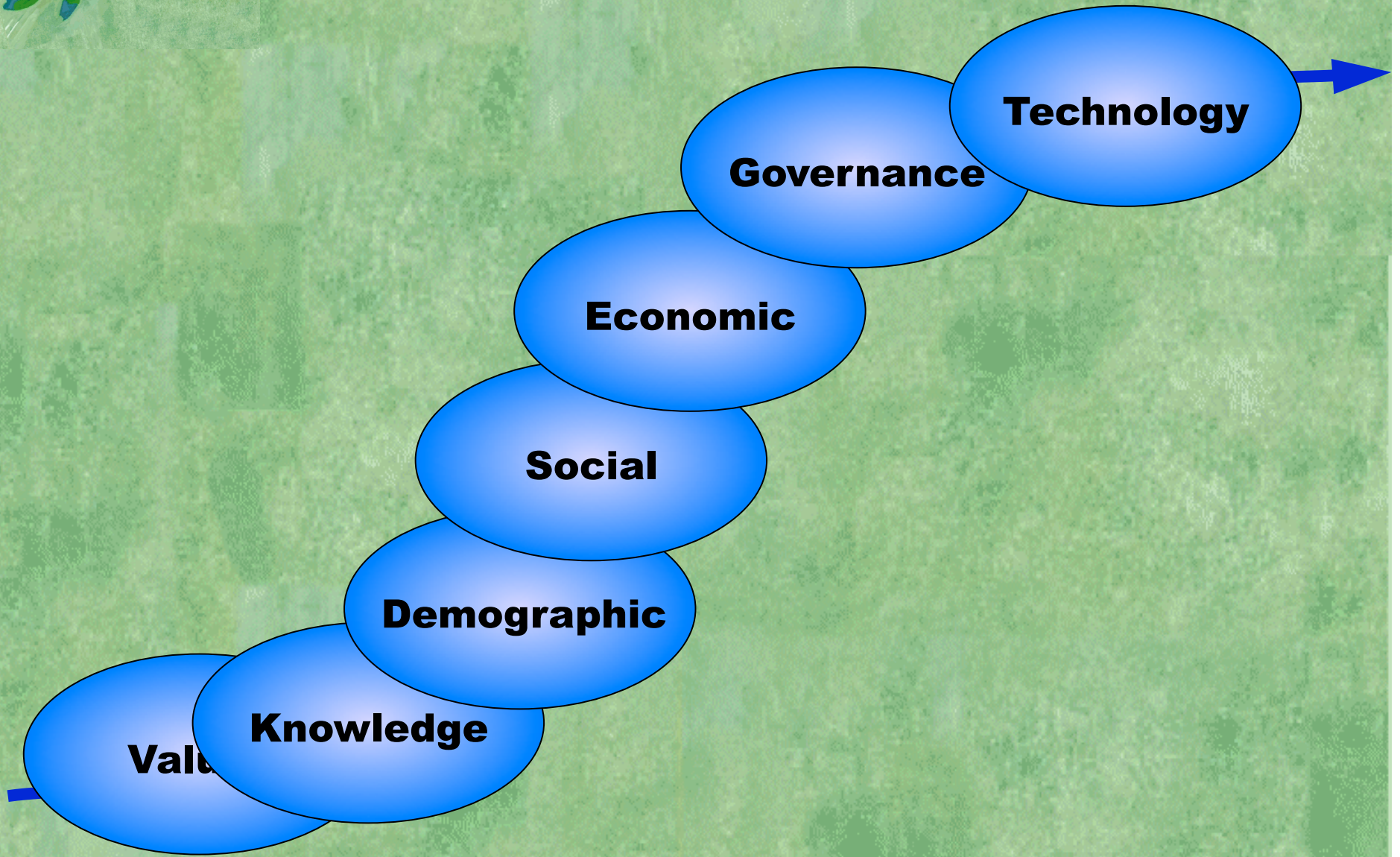
Reform may not be enough.....

The Real Challenge





Dimensions of Transition



Alternative: Make Climate History



"Enough storyboarding. Let's shoot something."

- Use Public Sector Investment as **Driver**: Enable developing countries to **leapfrog**—not “pollute first clean up later”.
- Set a Target: **\$1/W** Renewable Energy
 - How to lower costs
 - How to make renewable energy affordable
- Global **partnership** on RE