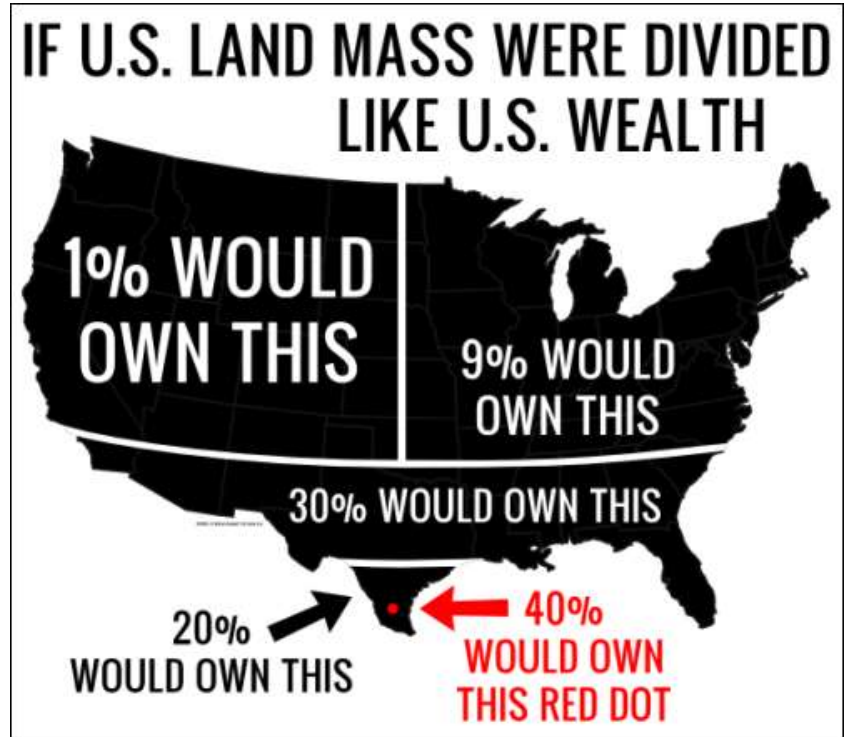


# Regenerative & Distributive Design

Addressing social/economic inequalities & environmental degradation  
through equitable resource distribution & ecological regeneration



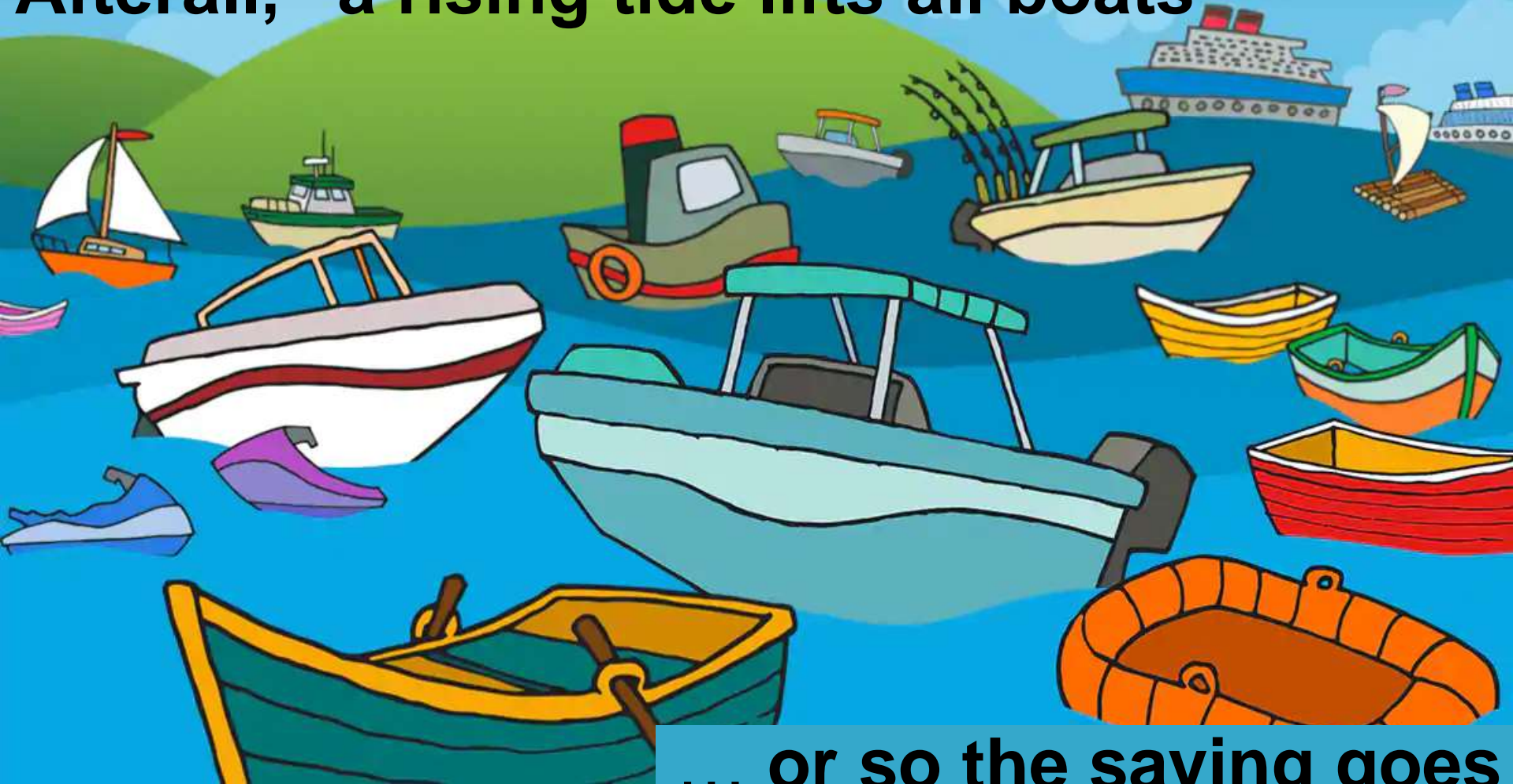
Social inequities exacerbate and perpetuate social and economic inequalities



How have we historically addressed wealth (and income) inequality as a nation?

By using **economic growth** as a *substitute* for **economic equity**

After all, “a rising tide lifts all boats”



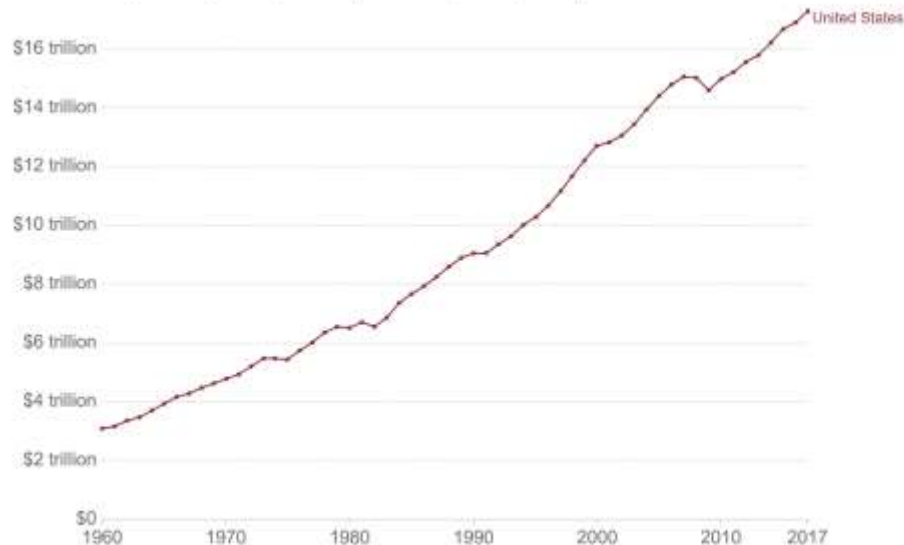
... or so the saying goes

# And, the tide is certainly rising...

## Gross Domestic Product, 1960 to 2017

Gross domestic product adjusted for price changes over time (inflation) and expressed in US-Dollars.

Our World  
in Data



Source: World Bank

OurWorldInData.org/economic-growth • CC BY

## GDP per capita, 1960 to 2017

GDP per capita adjusted for price changes over time (inflation) and price differences between countries – it is measured in international-\$ in 2011 prices.

Our World  
in Data



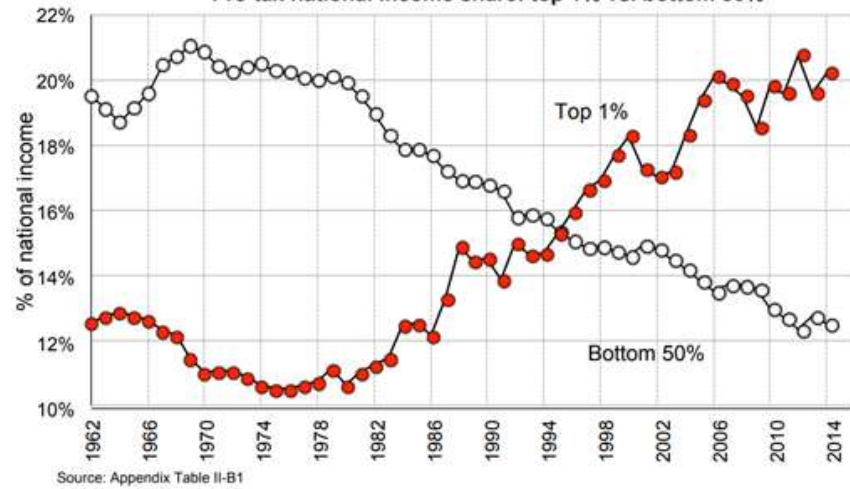
Source: Maddison Project Database 2020 (Bolt and van Zanden (2020))

OurWorldInData.org/economic-growth • CC BY

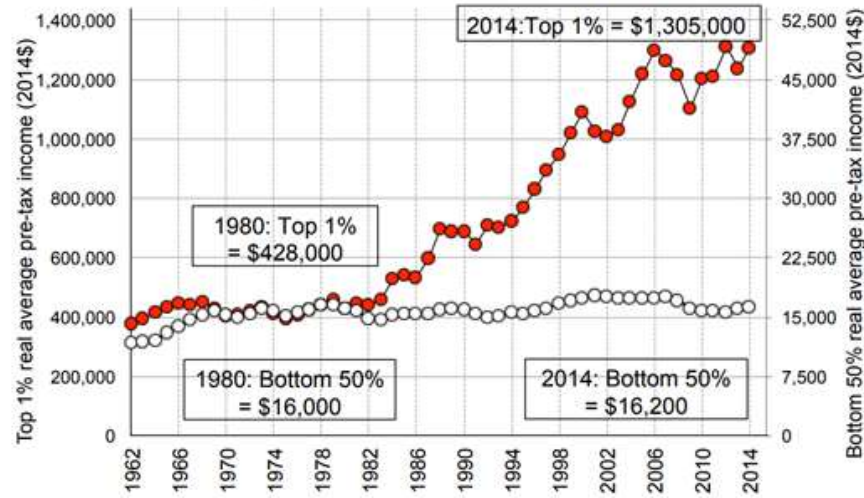
... but what about the boats?

# Income Inequality in the U.S.

Pre-tax national income share: top 1% vs. bottom 50%

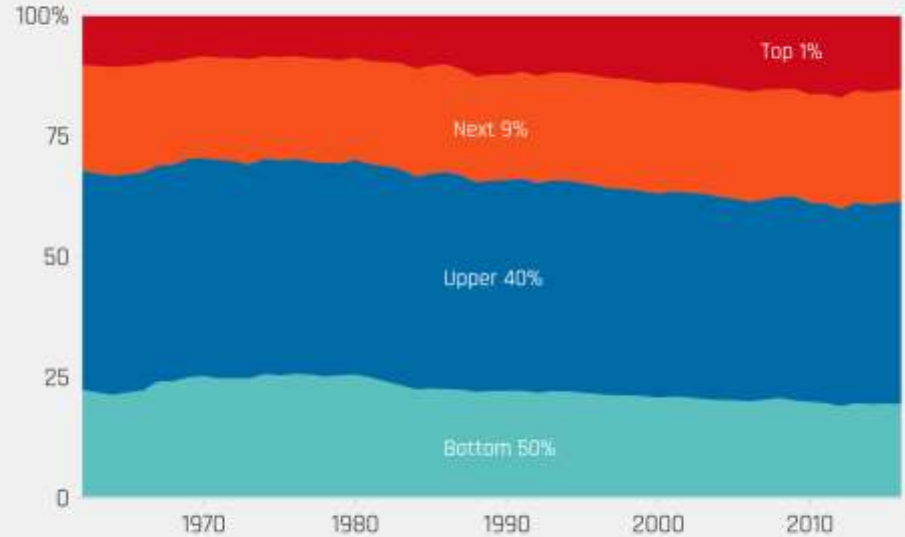


Real average pre-tax income of bottom 50% and top 1% adults



The top 10%'s share of all income has risen by 6 points since 1963

Percent of post-tax U.S. national income earned by each income group, 1963-2016



Source: "Appendix table II: distributional series," available at <http://gabriel-zucman.eu/usdina/> [last accessed April 2019].

# The top 1% have seen a nearly 300% increase in wealth since 1989

Cumulative wealth growth in the United States between 1989-2018, adjusted to 2019 dollars using the GDP Price Index



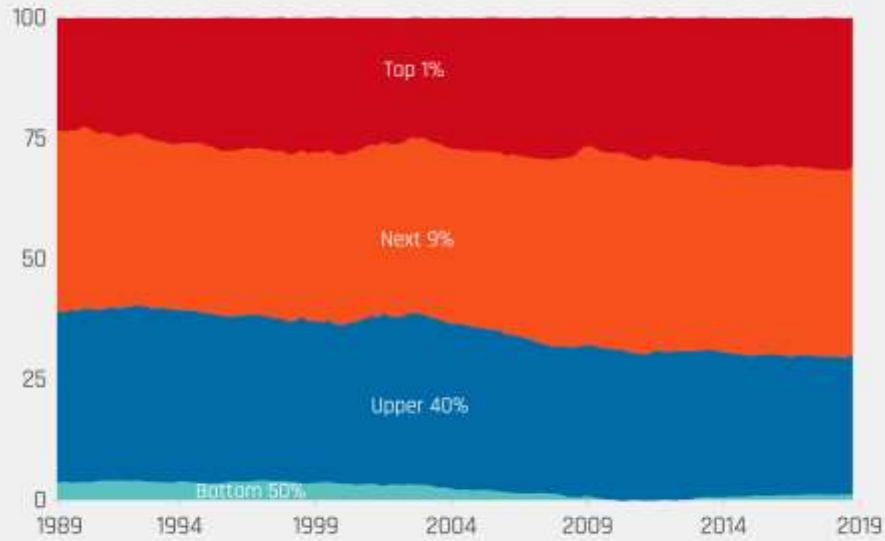
Source: "Distributional Financial Accounts: Levels of Wealth by Wealth Percentile Groups," available at: <https://www.federalreserve.gov/releases/efa/efa-distributional-financial-accounts.htm> [last accessed August 8, 2019].



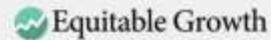
# Wealth Inequality in the U.S.

## The majority of all wealth in the U.S. is controlled by the top 10%

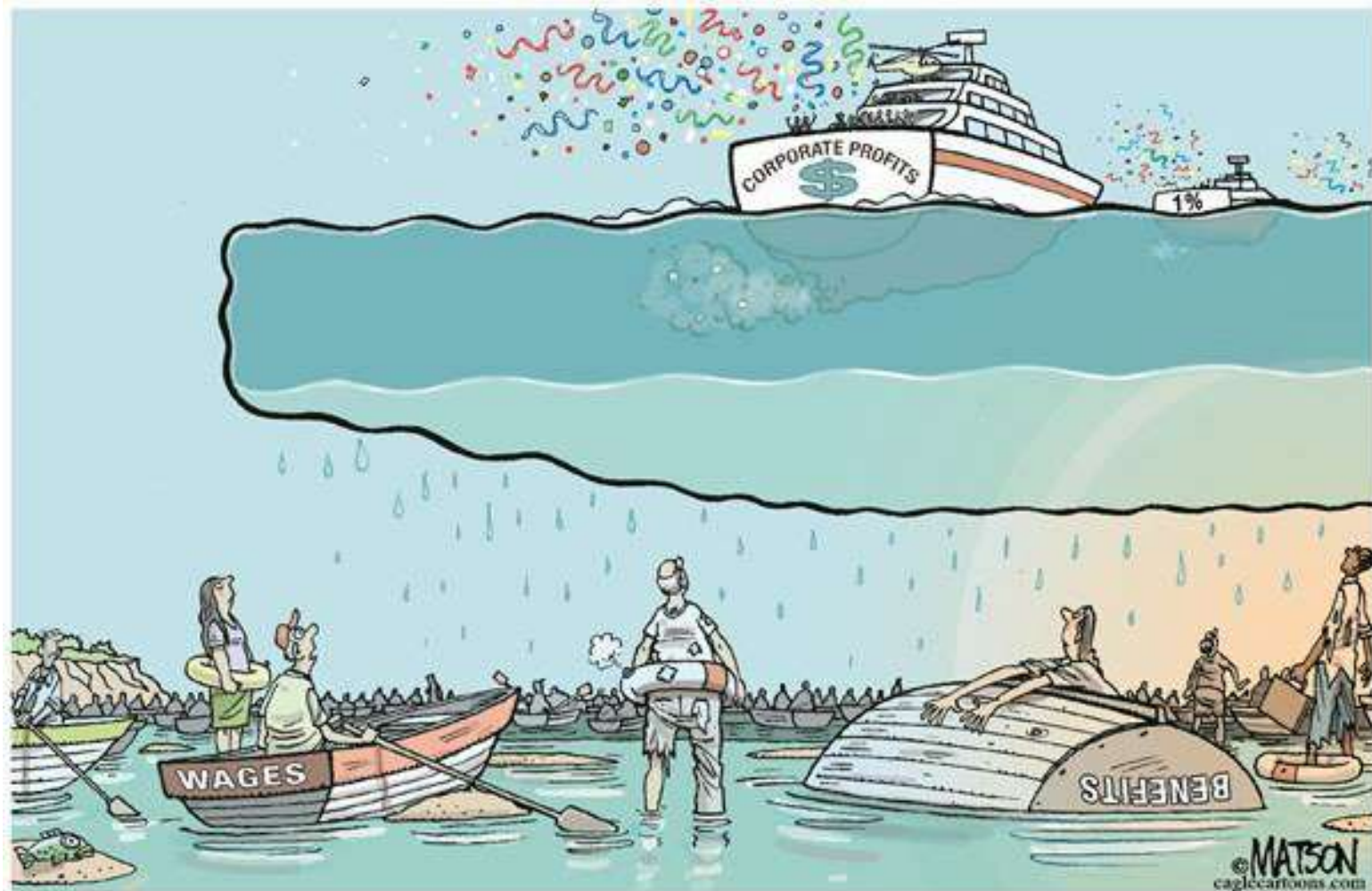
Percent of U.S. wealth earned by each wealth group, 1989-2018



Source: "Distributional Financial Accounts: Levels of Wealth by Wealth Percentile Groups," available at: <https://www.federalreserve.gov/releases/efa/efa-distributional-financial-accounts.htm> [last accessed August 12, 2019].



Figures from: <https://equitablegrowth.org/the-federal-reserves-new-distributional-financial-accounts-provide-telling-data-on-growing-u-s-wealth-and-income-inequality/>



**"A RISING TIDE LIFTS SOME BOATS..."**



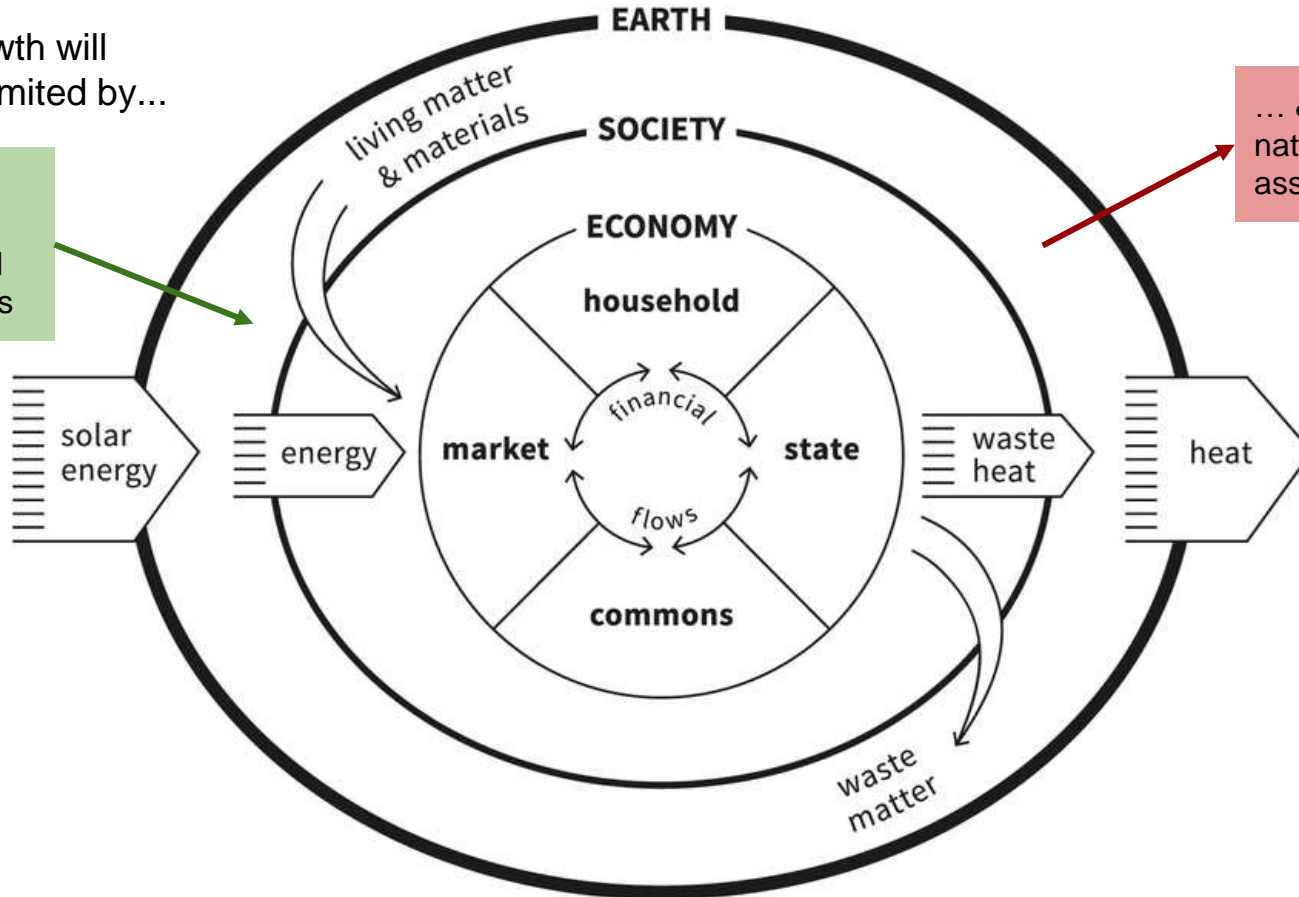
Even if economic growth did 'lift all boats', we'd still have a problem!



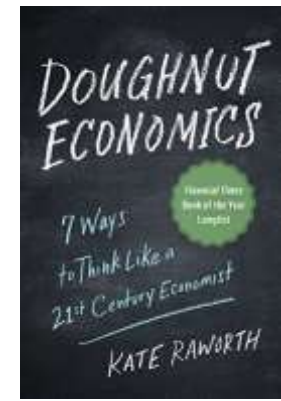
# Our economy is **embedded** within Earth's systems

Economic growth will ultimately be limited by...

... the size & regeneration rates of natural resource stocks

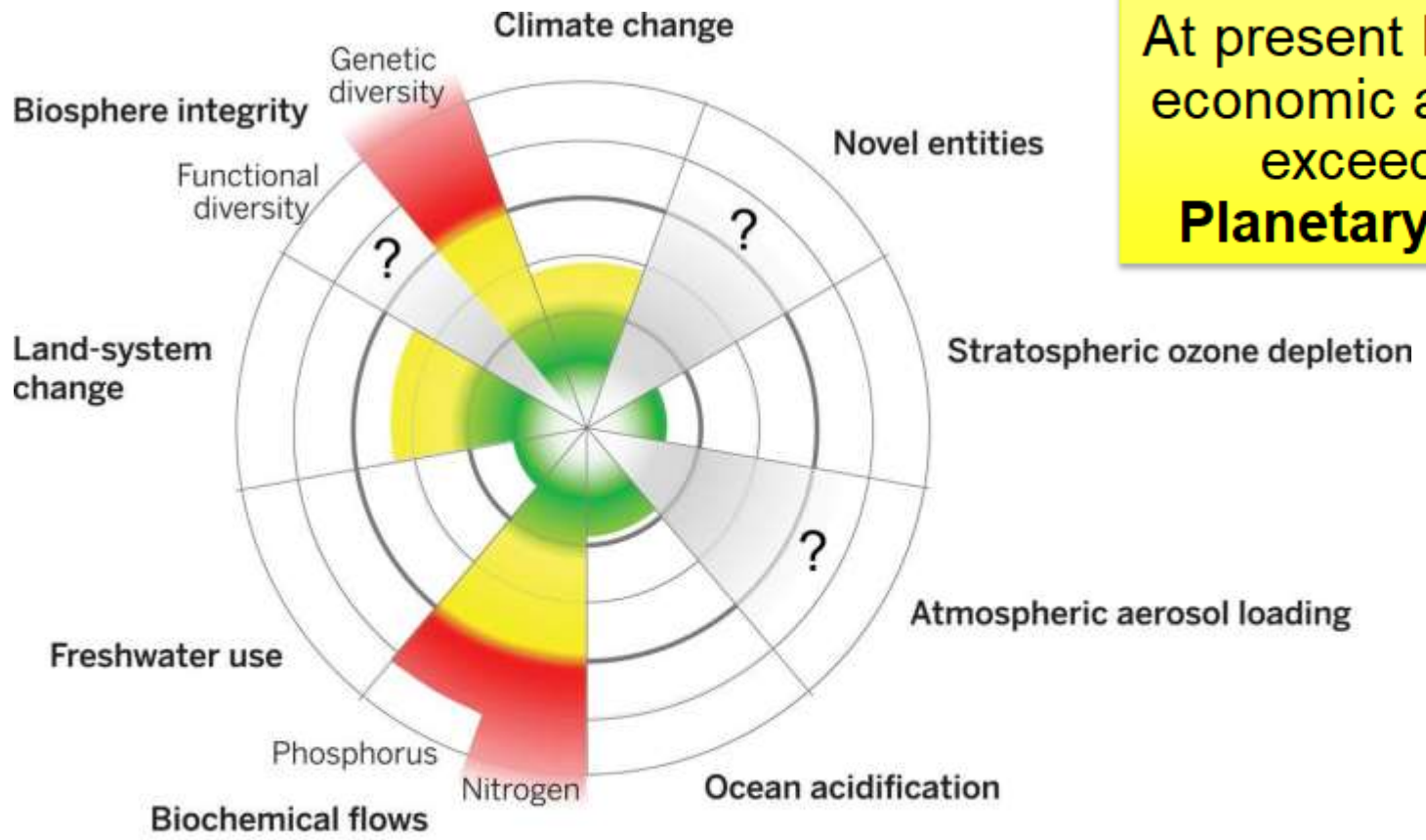






... & the rate at which natural systems can assimilate our waste



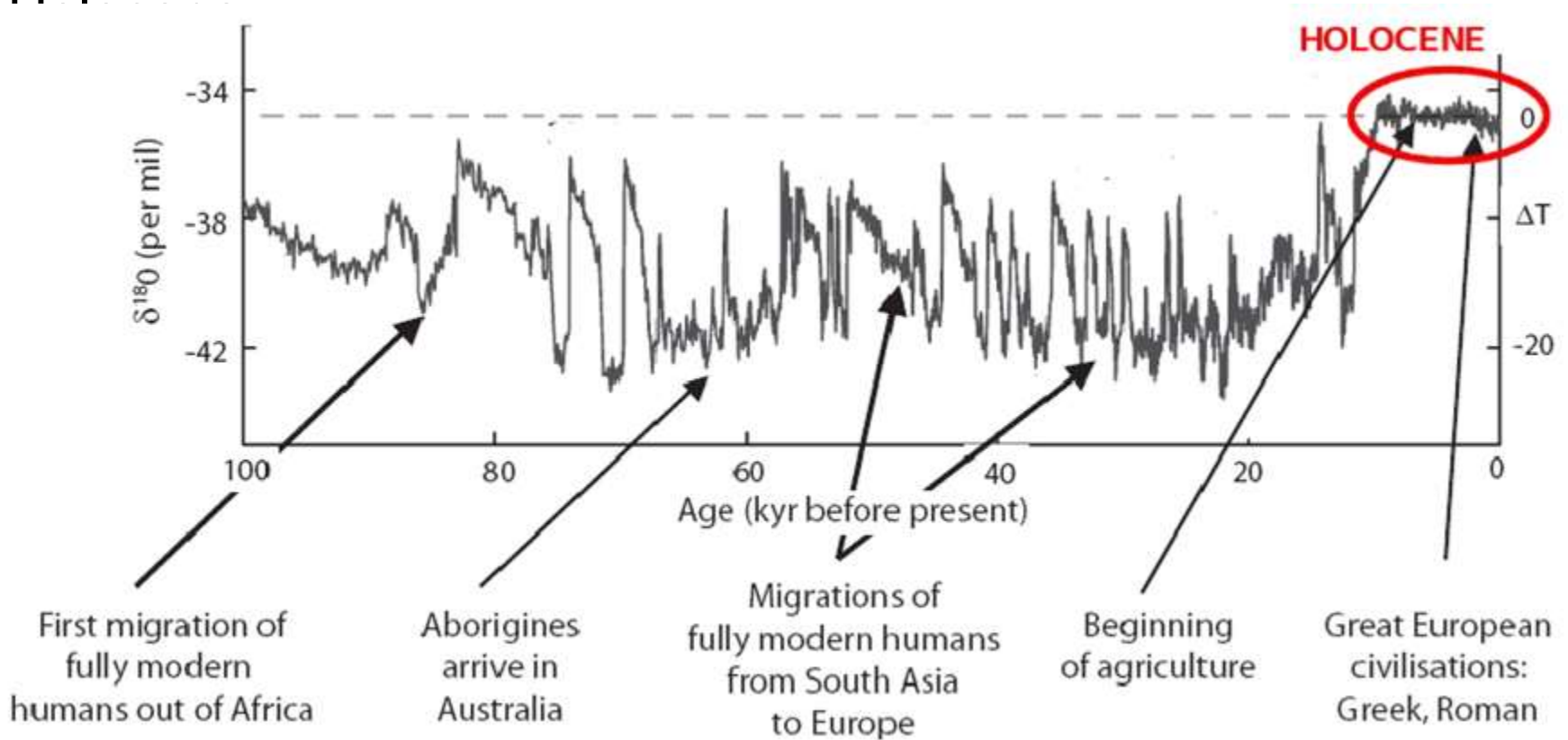
At present levels of global economic activity, we are exceeding 4 of 9 Planetary Boundaries

**Planetary Boundaries**



 Beyond zone of uncertainty (high risk)	 Below boundary (safe)
 In zone of uncertainty (increasing risk)	 Boundary not yet quantified

# Exceeding planetary boundaries could 'tip' us out of the



**Fig. 1.** The last glacial cycle of  $18\text{O}$  (an indicator of temperature) and selected events in human history. The Holocene is the last 10 000 years. Adapted from Young and Steffen (2009).

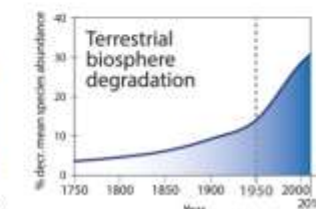
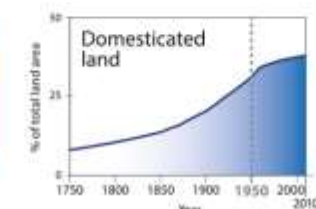
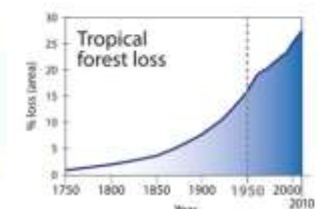
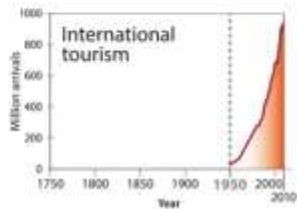
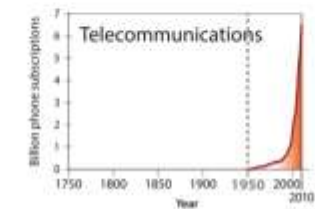
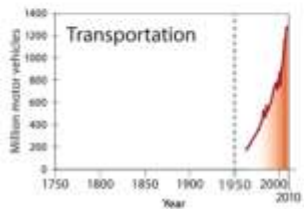
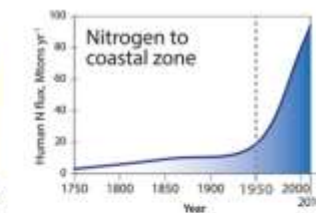
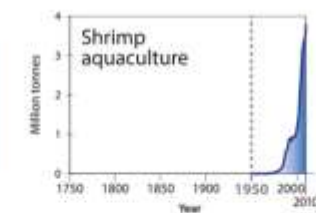
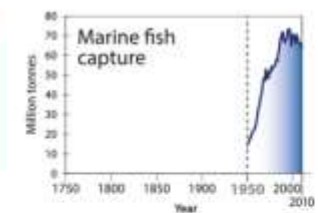
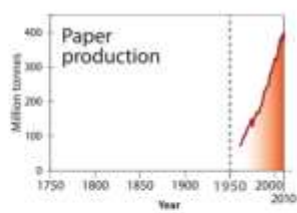
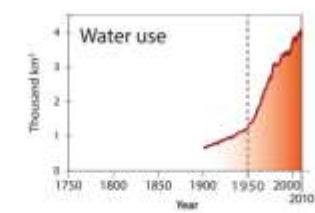
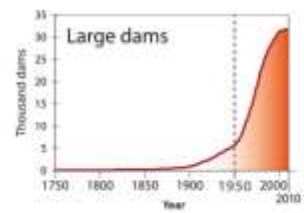
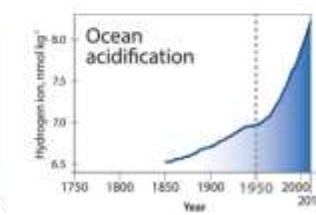
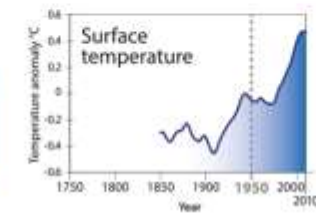
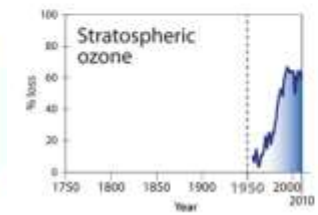
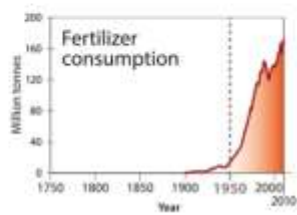
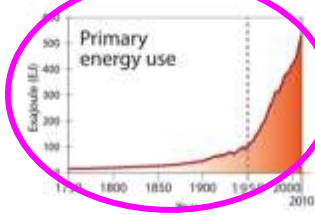
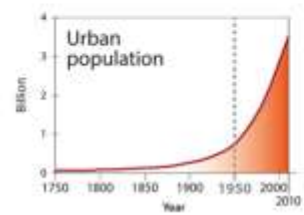
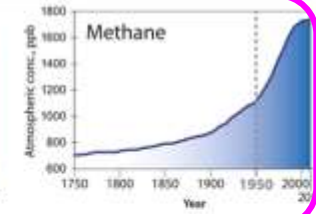
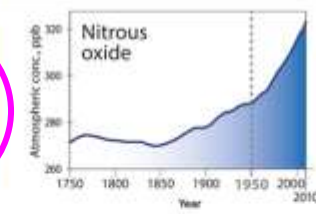
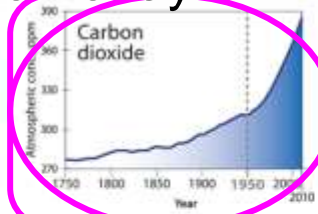
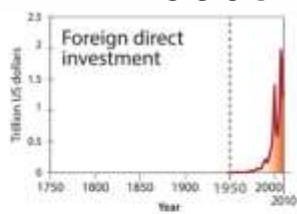
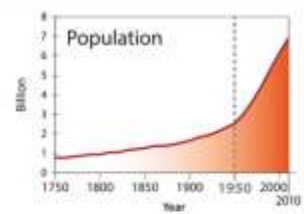
# The Great Acceleration

Figures: Steffen et al., 2015a

## Socioeconomic Trends

1950s to Today

## Earth System Trends

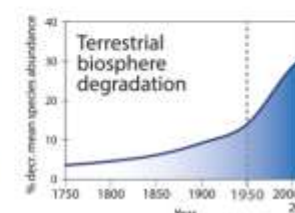
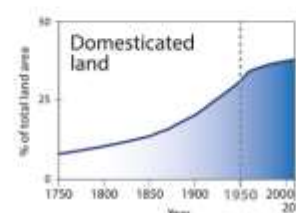
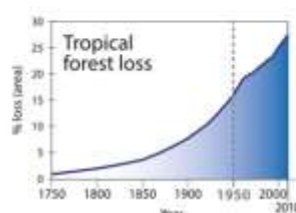
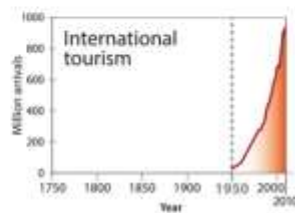
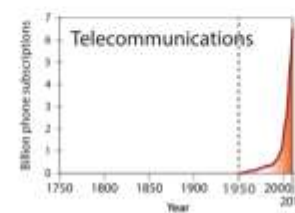
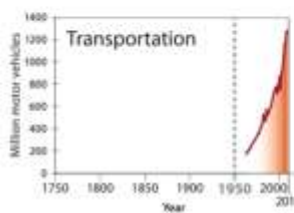
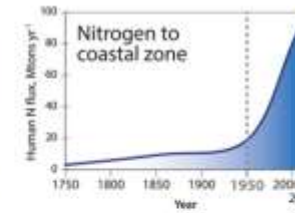
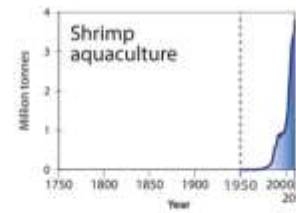
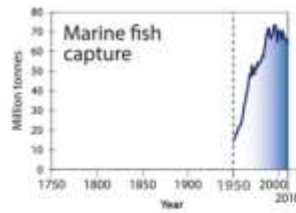
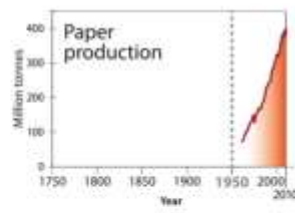
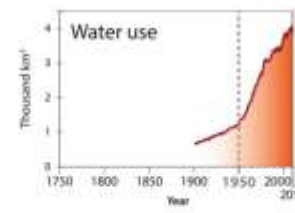
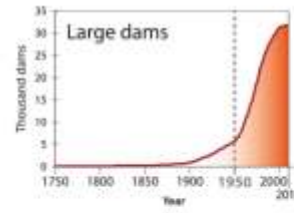
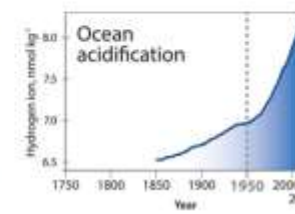
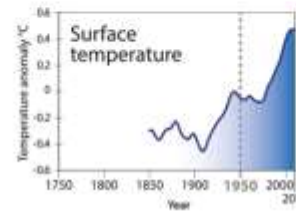
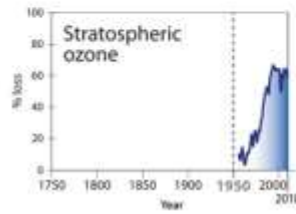
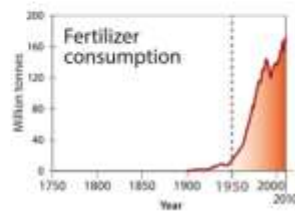
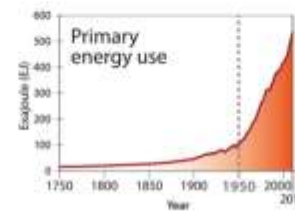
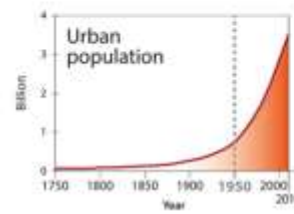
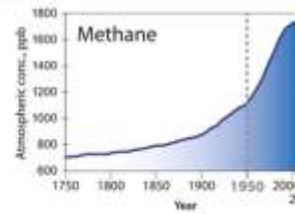
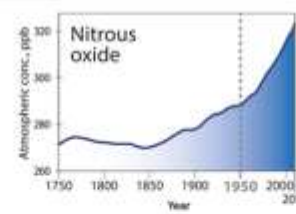
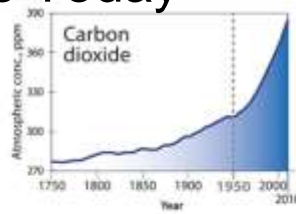
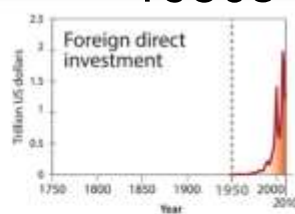
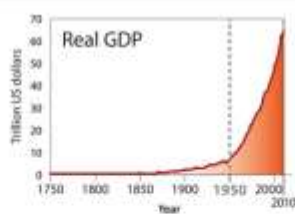
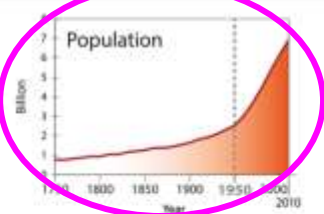


# The Great Acceleration 1950s to Today

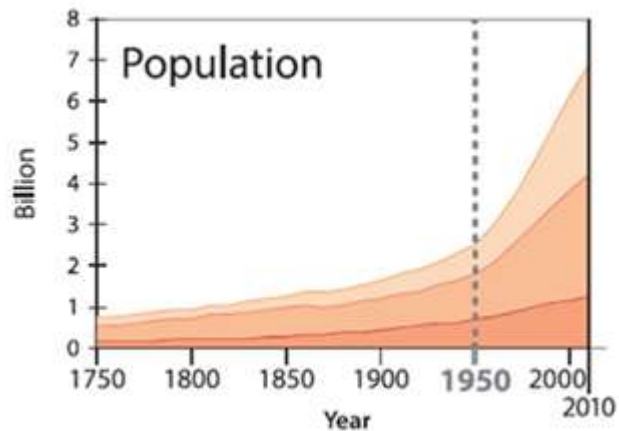
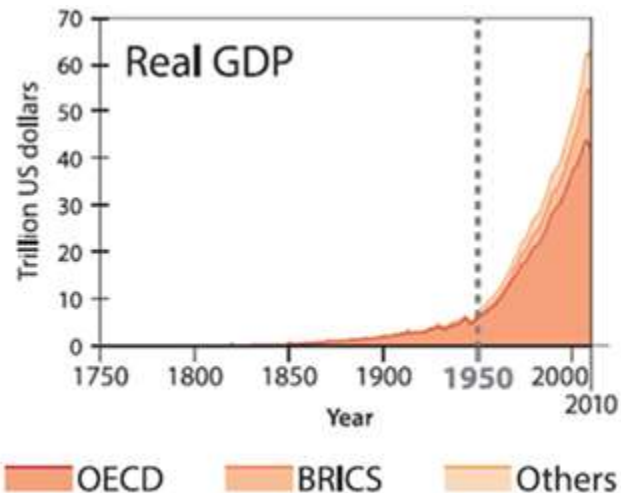
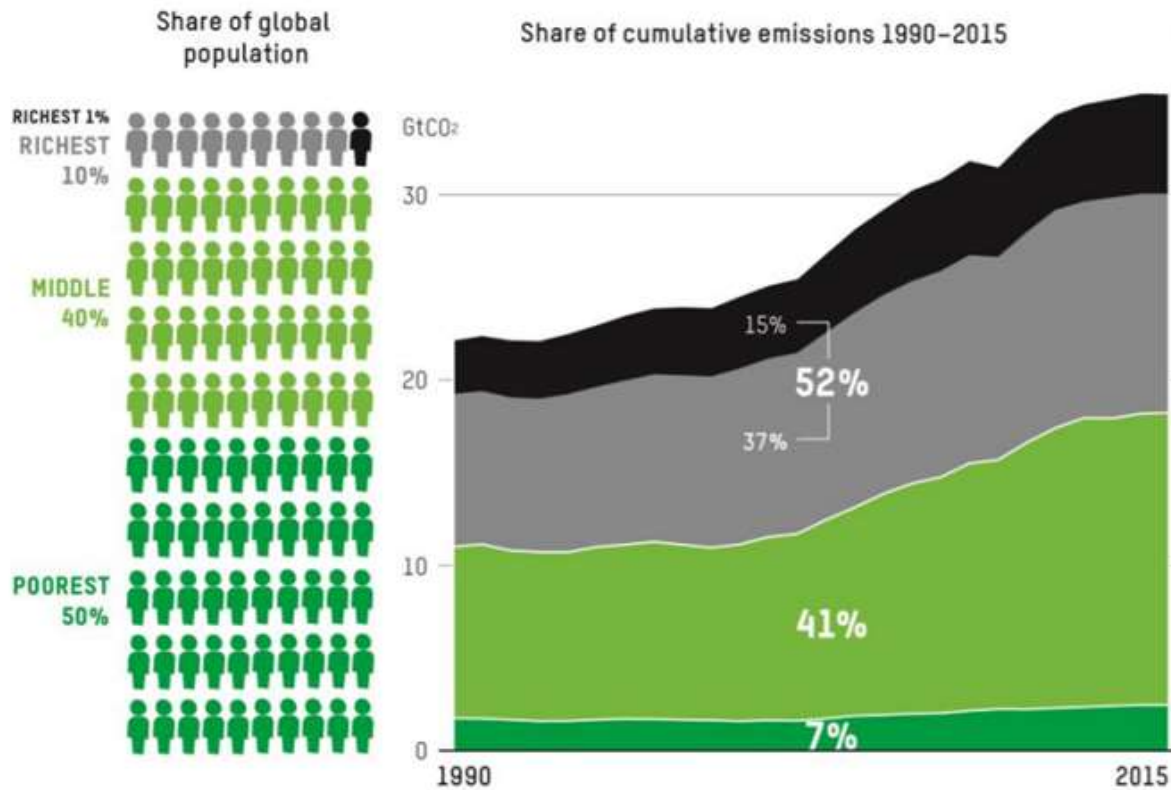
Figures: Steffen et al., 2015a

## Socioeconomic Trends

## Earth System Trends

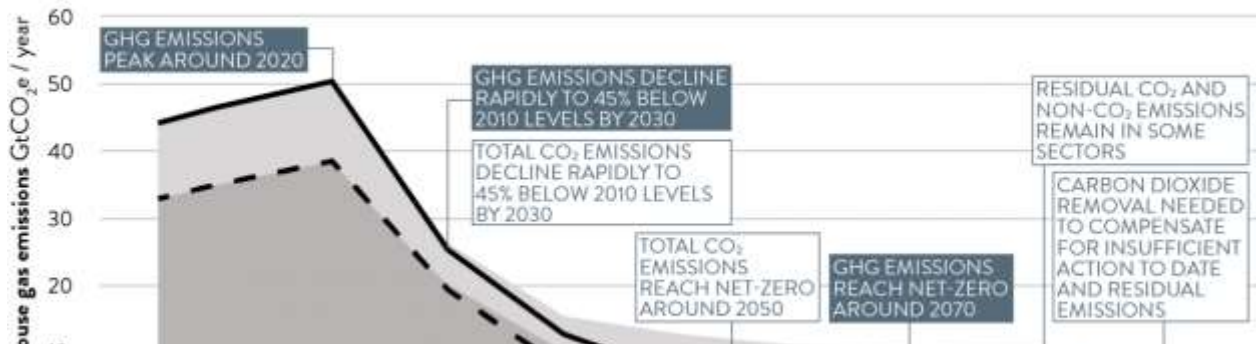


- The **richest 10%** of the global population responsible for **more than half** of **global carbon emissions** +
- Wealthy nations have captured majority of economic benefits of growth



# PEAK AND RAPID DECLINE TO BELOW NET-ZERO

Key global benchmarks for Paris Agreement compatible 1.5°C emissions pathways

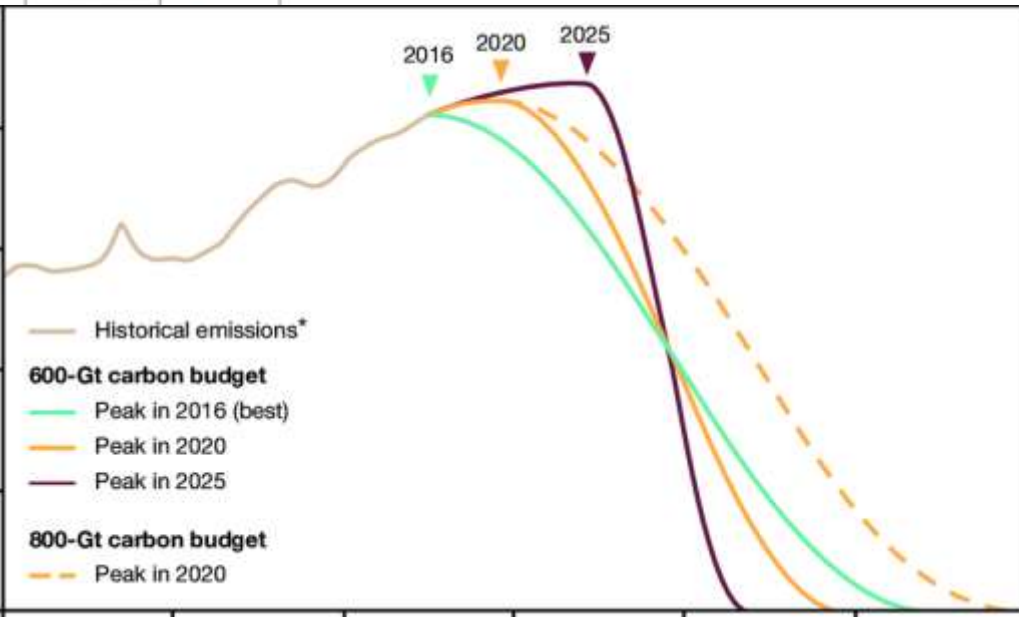


# Paris Climate Agreement Time Crunch



Global benchmarks stipulated from Paris Agreement Article 4

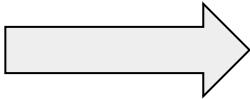
CO <sub>2</sub> Emissions from fossil fuels and industry (excl. BECCS)	Non-CO <sub>2</sub> Emissions
Emissions from agriculture, forestry & land use <b>AFOLU</b>	Carbon Removal (Bio Energy)



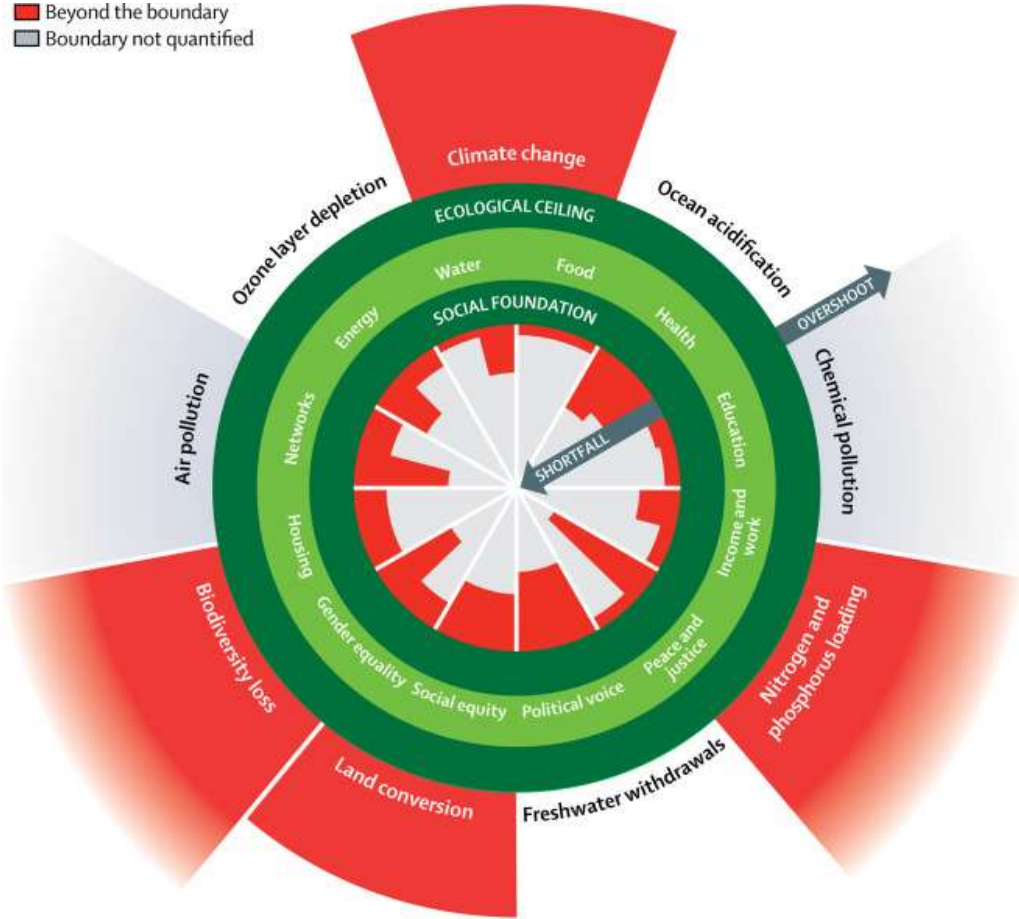


How does this apply to USG and our current strategic planning effort?

# Step 1: Change the Goal



■ Beyond the boundary  
■ Boundary not quantified



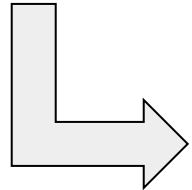
# Step 1b: Change what you measure

# Step 2: Change the Rules & Norms

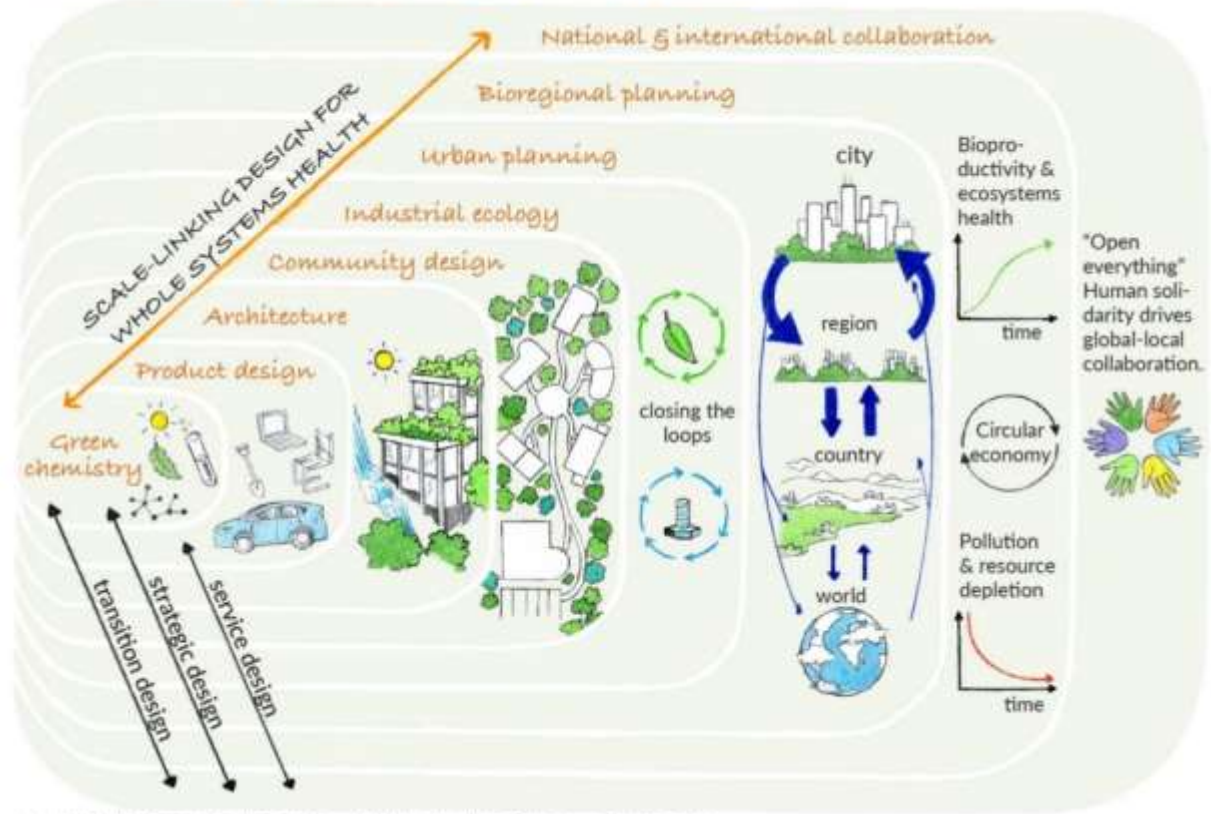


# Step 2: Change the Rules & Norms

## LINEAR ECONOMY



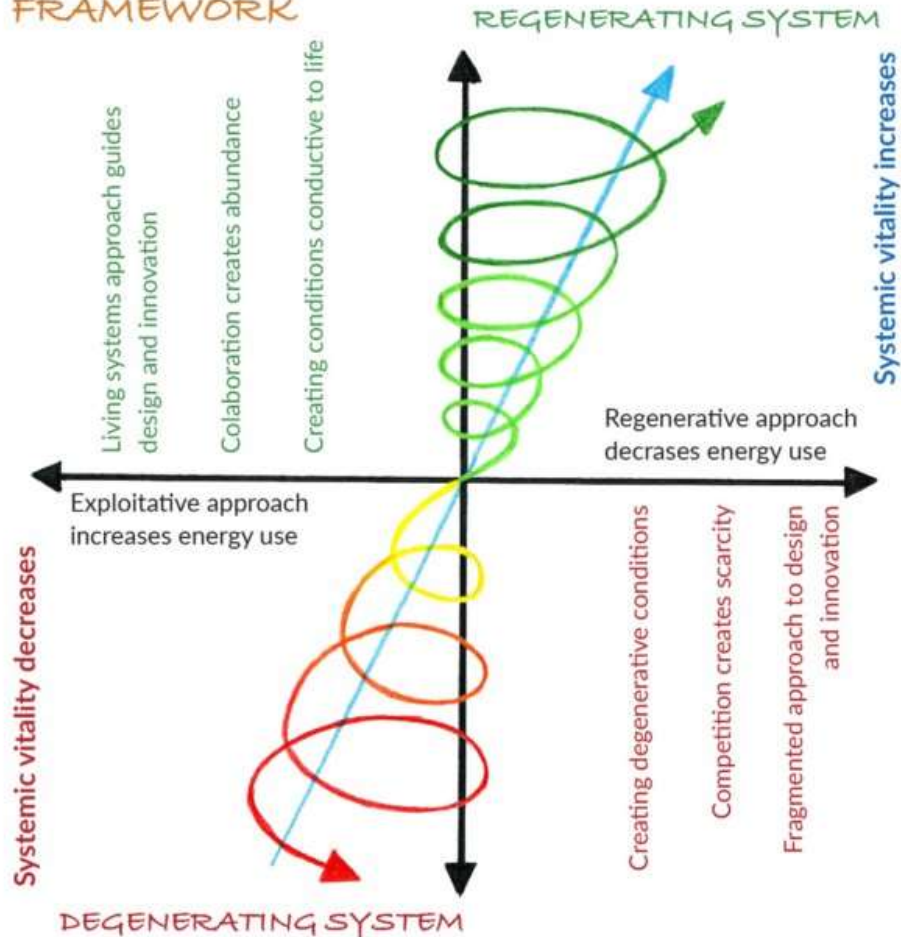
## THE SCALES OF REGENERATIVE DESIGN



Step 2b: Think beyond sustainability to regeneration

# Step 2

## THE REGENERATIVE DESIGN FRAMEWORK



### Regenerative

Appropriate participation and design as nature.

### Reconciliatory

Reintegrating humans as integral parts of nature.

### Restorative

Humans doing things to nature.

### Sustainable

Neutral point of not doing any more damage.

### Green

Relative improvements.

### Conventional practice

Compliant to avoid legal actions.

# DOWNSCALING THE DOUGHNUT TO THE CITY



**KATE RAWORTH**

ECONOMIST, AUTHOR 'DOUGHNUT ECONOMICS'



# Breakout groups

	SOCIAL	ECOLOGICAL
LOCAL	What would it mean for the people of this city to thrive?	What would it mean for this city to thrive within its natural habitat?
GLOBAL	What would it mean for this city to respect the wellbeing of people worldwide?	What would it mean for this city to respect the health of the whole planet?

- Brainstorm USG “community” goals for each quadrant
- If you don’t feel you have enough info to draft goals: Brainstorm what info/expertise will be needed to develop SMART goals and how students could be part of this