

# PLS 341

# Politics of Development

Week 9, Lecture 2:

'Seeing like a state' and ordering of nature

# Recap

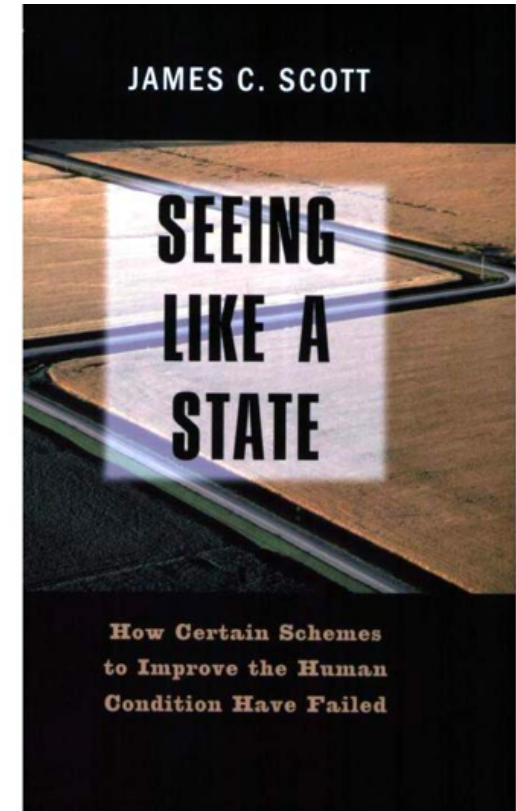
- Developmental pitfalls of state capacity
- Pernicious effects of social engineering in development interventions

# Plan for today

- Seeing nature like a state:
  - Effects of ordering of nature in the service of development
  - Sustainability and sustainable development
  - Future prospects

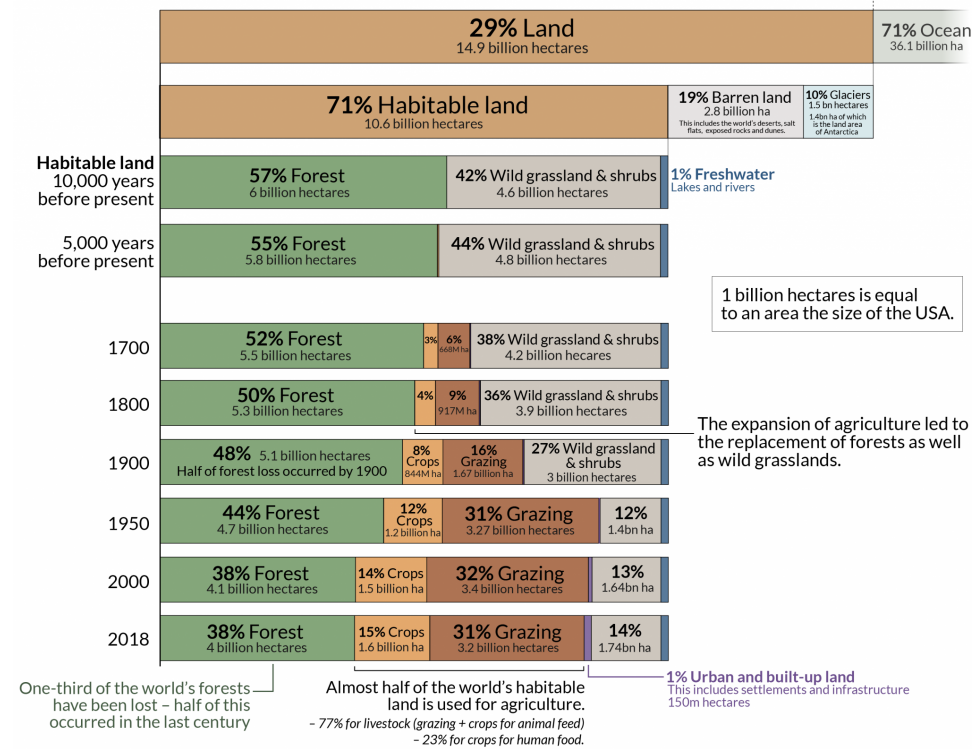
# Ordering of forests

- 18<sup>th</sup>-century Prussia and Saxony:
  - Invention of scientific forestry —>
  - Introduction of Norway spruce monocultures —>
  - Disruption of the complex processes in forests —>
  - *Waldsterben*

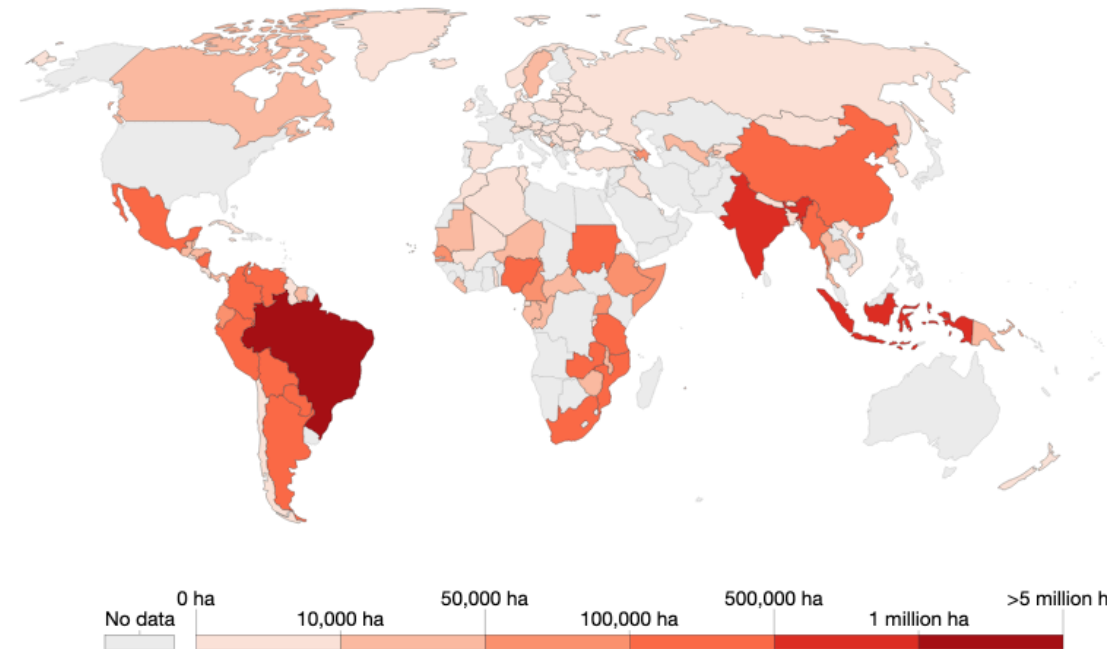


# Ordering of forests

The world has lost one-third of its forest since the last ice age



## Annual deforestation, 2015



Source: UN Food and Agriculture Organization (FAO). Forest Resources Assessment.

OurWorldInData.org/forests • CC BY

Note: The UN FAO publish forest data as the annual average on 10- or 5-year timescales. The following year allocation applies: "1990" is the annual average from 1990 to 2000; "2000" for 2000 to 2010; "2010" for 2010 to 2015; and "2015" for 2015 to 2020.

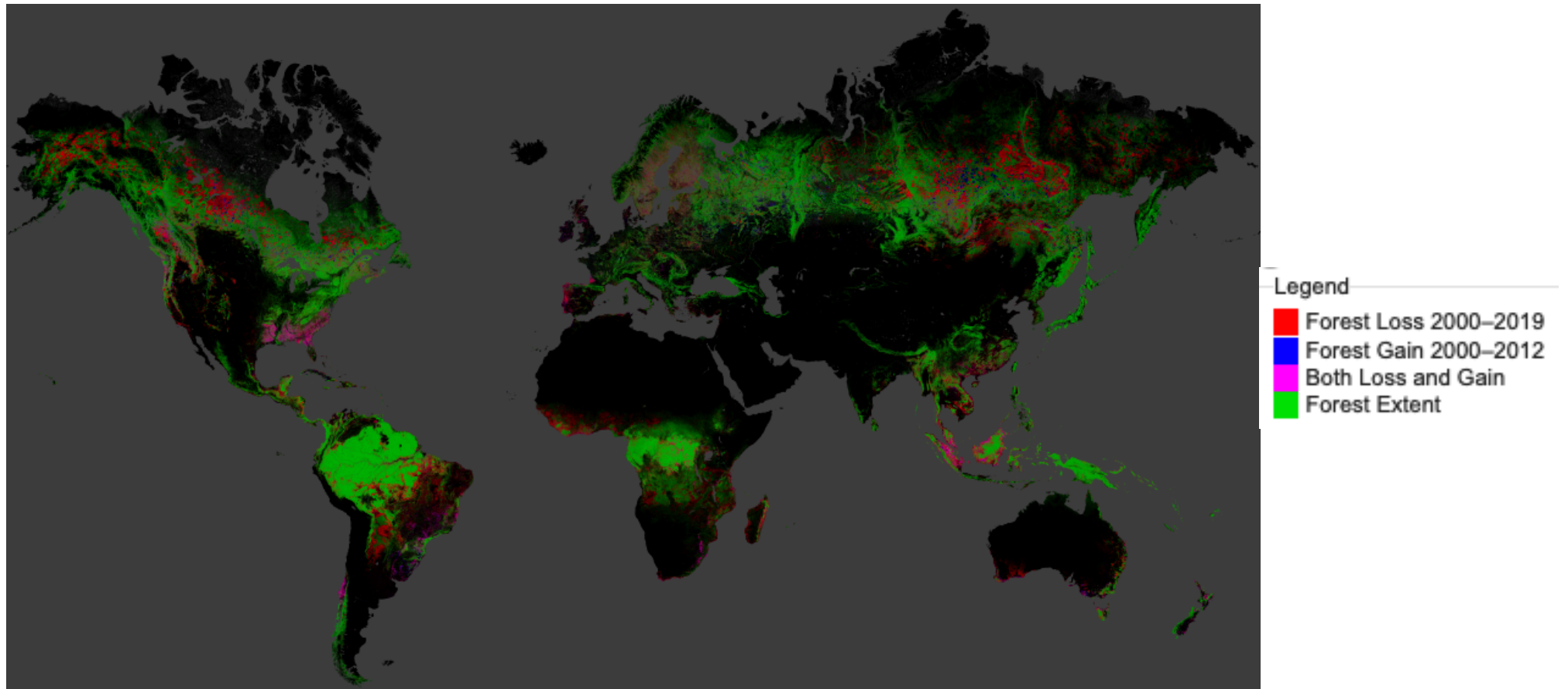
Data sources: Forests data from UN Food and Agriculture Organization (FAO); and Williams, M. (2003). Deforesting the earth: from prehistory to global crisis.

Agriculture data post-1950 from UN FAO; pre-1950 data from The History Database of the Global Environment (HYDE)

OurWorldInData.org - Research and data to make progress against the world's largest problems.

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# Ordering of forests

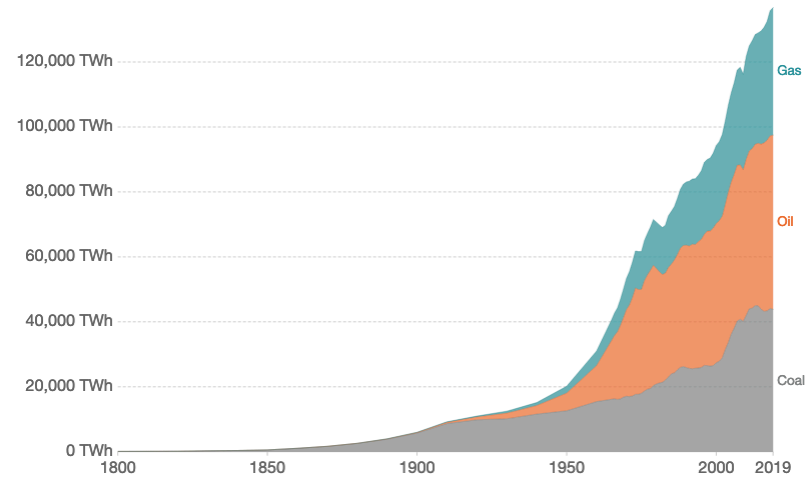


Sources: Hansen, M C et al. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342(6160): 850 LP – 853.  
<https://earthenginepartners.appspot.com/science-2013-global-forest>

# Ordering of air

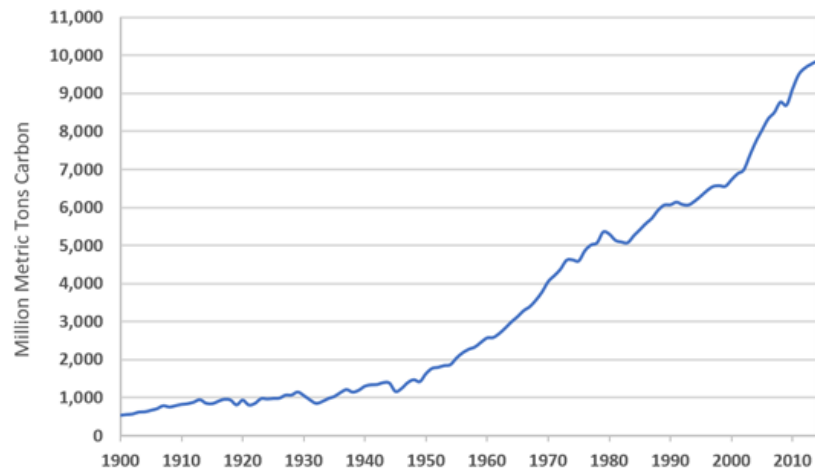
## Global fossil fuel consumption

Global primary energy consumption by fossil fuel source, measured in terawatt-hours (TWh).

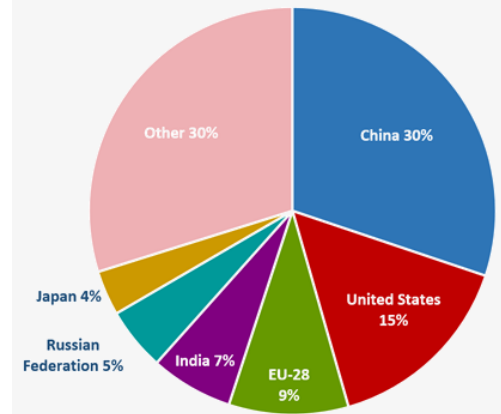


Source: Vaclav Smil (2017). Energy Transitions: Global and National Perspective & BP Statistical Review of World Energy  
OurWorldInData.org/fossil-fuels/ • CC BY

## Global Carbon Emissions from Fossil Fuels, 1900-2014



## 2014 Global CO<sub>2</sub> Emissions from Fossil Fuel Combustion and Some Industrial Processes

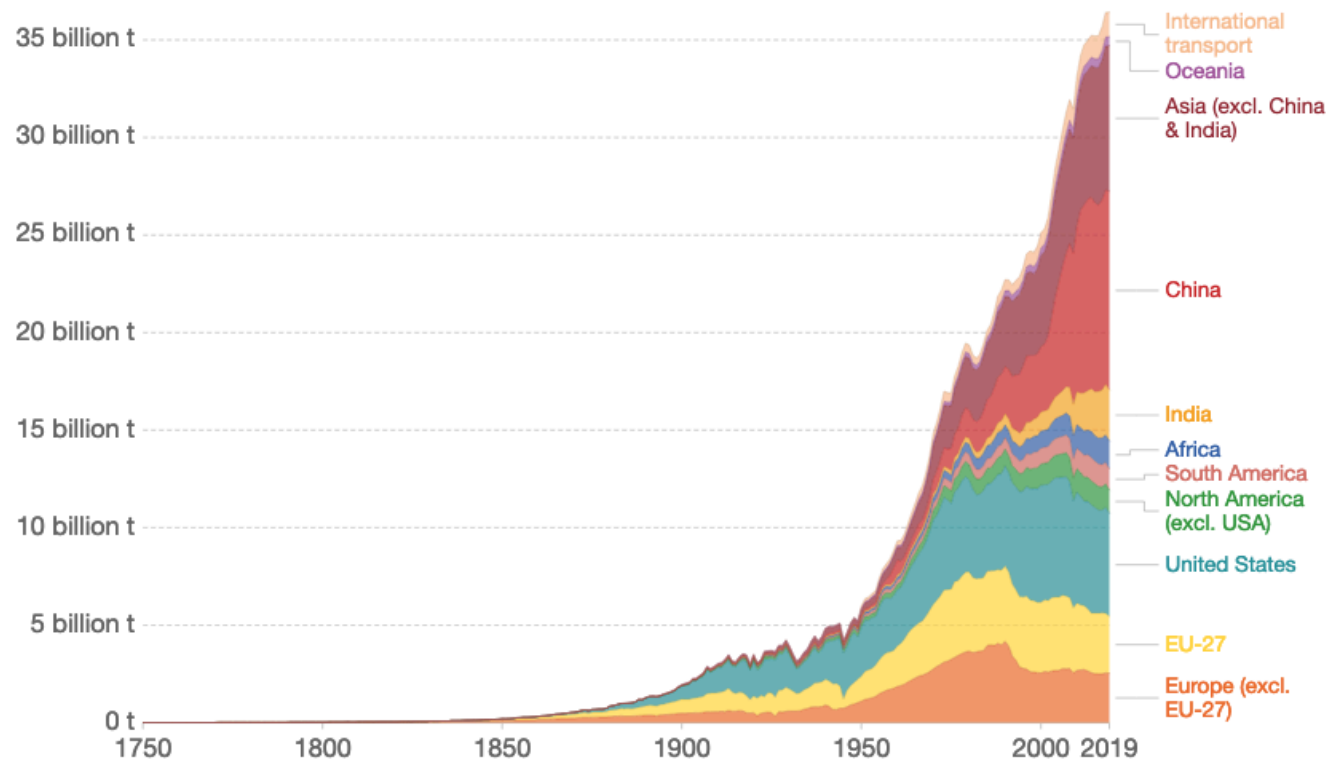


Source of emission plots: Boden, T.A., Marland, G., and Andres, R.J. 2017. "Global, Regional, and National Fossil-Fuel CO<sub>2</sub> Emissions." Oak Ridge: Oak Ridge National Laboratory.

# Ordering of air

## Annual total CO<sub>2</sub> emissions, by world region

This measures CO<sub>2</sub> emissions from fossil fuels and cement production only – land use change is not included.



Source: Our World in Data based on the Global Carbon Project  
 Note: 'Statistical differences' included in the GCP dataset is not included here.  
 OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

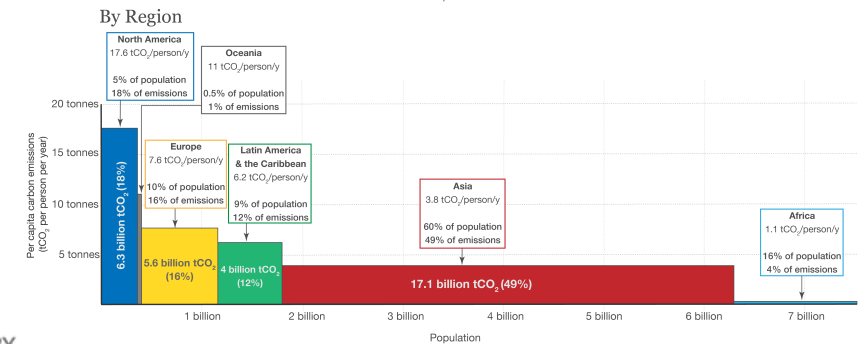
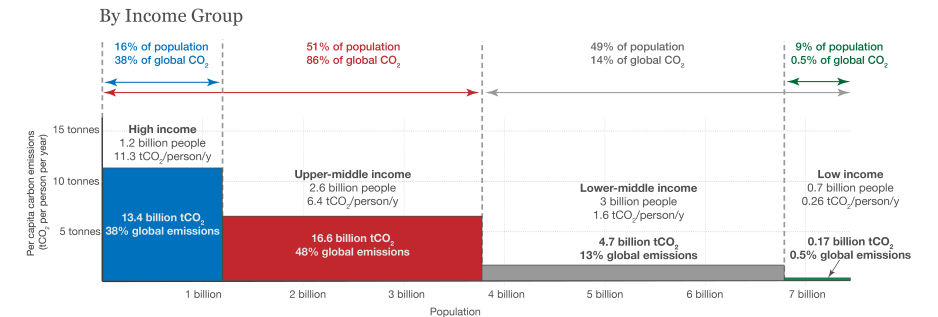


## Global CO<sub>2</sub> emissions by income and region



Breakdown of global carbon dioxide (CO<sub>2</sub>) emissions in 2016 by World Bank income group (top) and world region (bottom). This is shown based on average per capita emissions (y-axis) and population size (x-axis), with the area of the box representing total annual emissions in 2016.

- Emissions represent domestic production (not accounting for embedded emissions in traded products), and do not include cross-boundary emissions such as international aviation & shipping.
- Aggregation by income is based on the total emissions of countries within each of the World Bank's income groupings. It reflects average national incomes rather than the distribution of incomes within countries. E.g. 'Low income' reflects the total emissions of all countries defined as low income, rather than the emissions of global individuals defined as low income. If defined on the basis of individuals (without country contexts), the global inequality would be even larger.

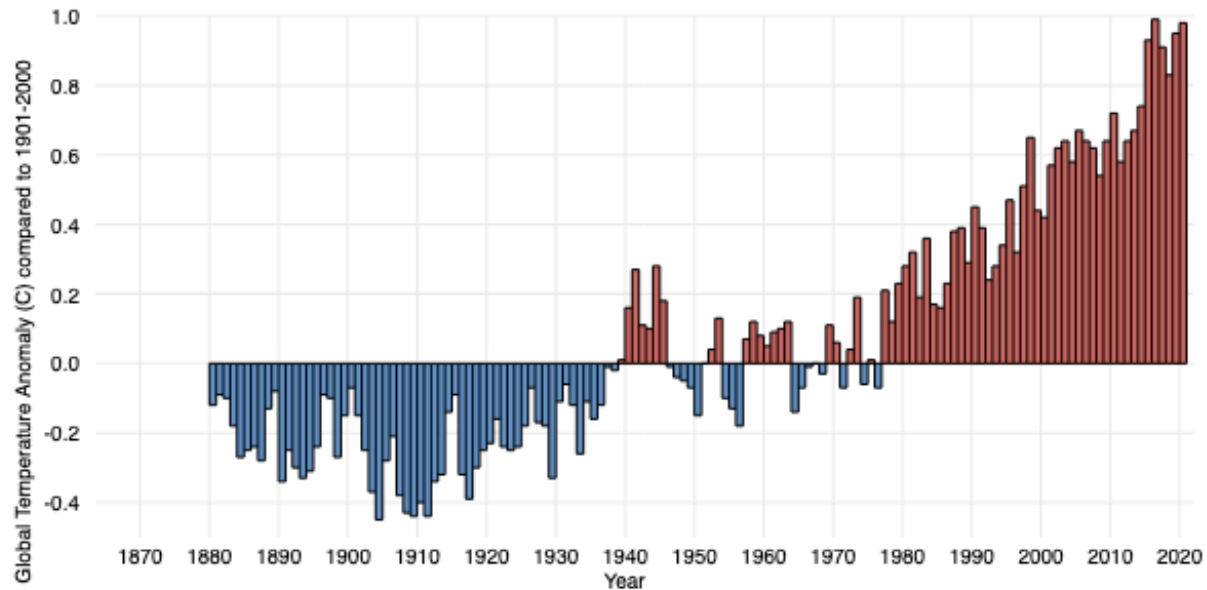


Source: Our World in Data based on data from the Global Carbon Project, UN Population Division (2019) & World Bank income groups. This is a visualization from OurWorldInData.org, where you find data and research on how the world is changing. Licensed under CC-BY-SA by the authors Hannah Ritchie and Max Roser.

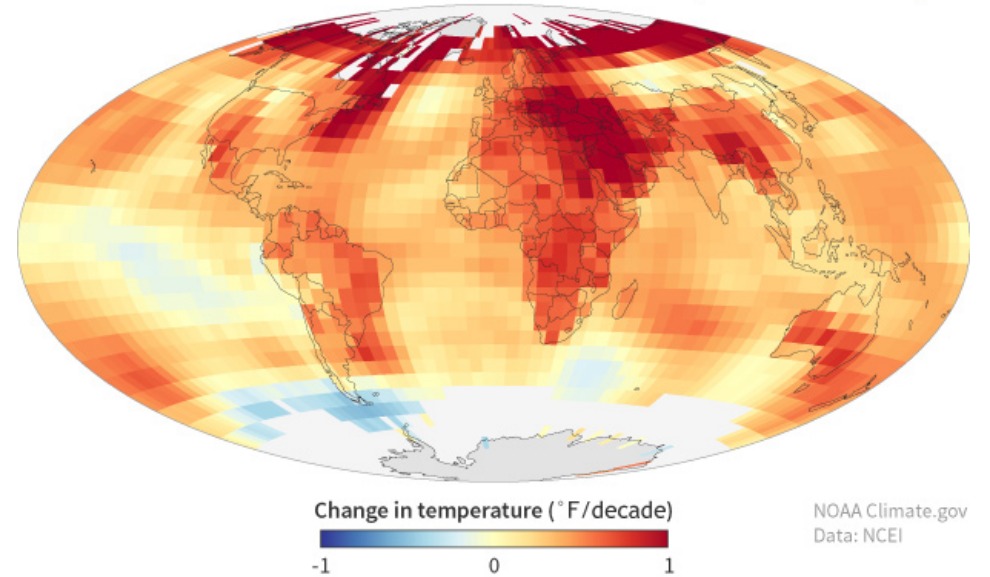


# Ordering of climate

History of global surface temperature since 1880



RECENT TEMPERATURE TRENDS (1990-2019)



# Ordering of climate

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Science

## Climate change: Extreme weather causes huge losses in 2020

By Matt McGrath  
Environment correspondent

© 27 December 2020



Flooding in India this year was linked to a very heavy Monsoon

BABU

Sources:

<https://www.euronews.com/2021/02/23/climate-change-are-europe-s-winter-weather-extremes-linked-to-global-warming>

<https://www.bbc.com/news/science-environment-55416013>

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WORLD

## Europe's winter temperatures have been extreme this year. Here's why.

COMMENTS

By Scott Duncan • Updated: 23/02/2021



# Effects of the ordering of nature



Already Gone	Mollusks	Birds	Flowering plants	Mammals	Fishes	Insects	Amphibians	Reptiles	Crustaceans	Nonflowering plants	Others
Species known to be extinct, or extinct in the wild, since 1500:	327	136	110	79	68	60	39	22	12	10	2

# Effects of the ordering of nature

## Covid-19: Infectious coronaviruses 'circulating in bats for decades'

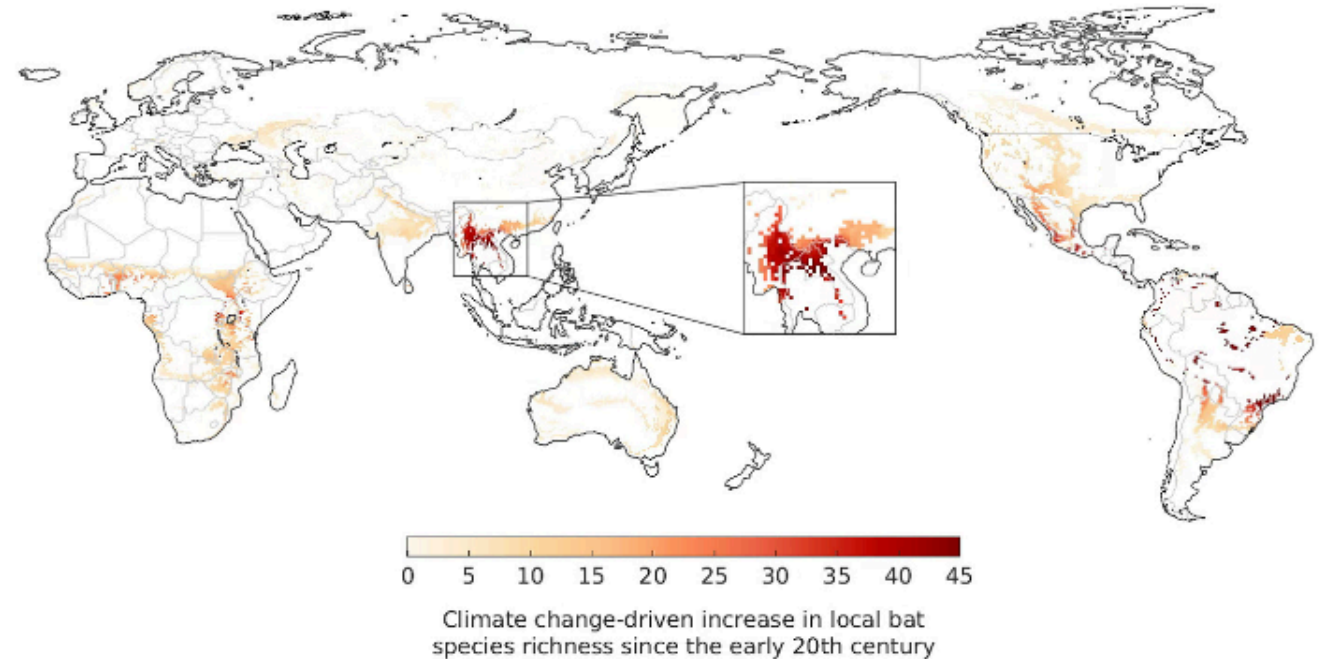
By Helen Briggs  
BBC Environment correspondent

© 29 July 2020



Bats may harbour viruses, but should not be persecuted, say experts

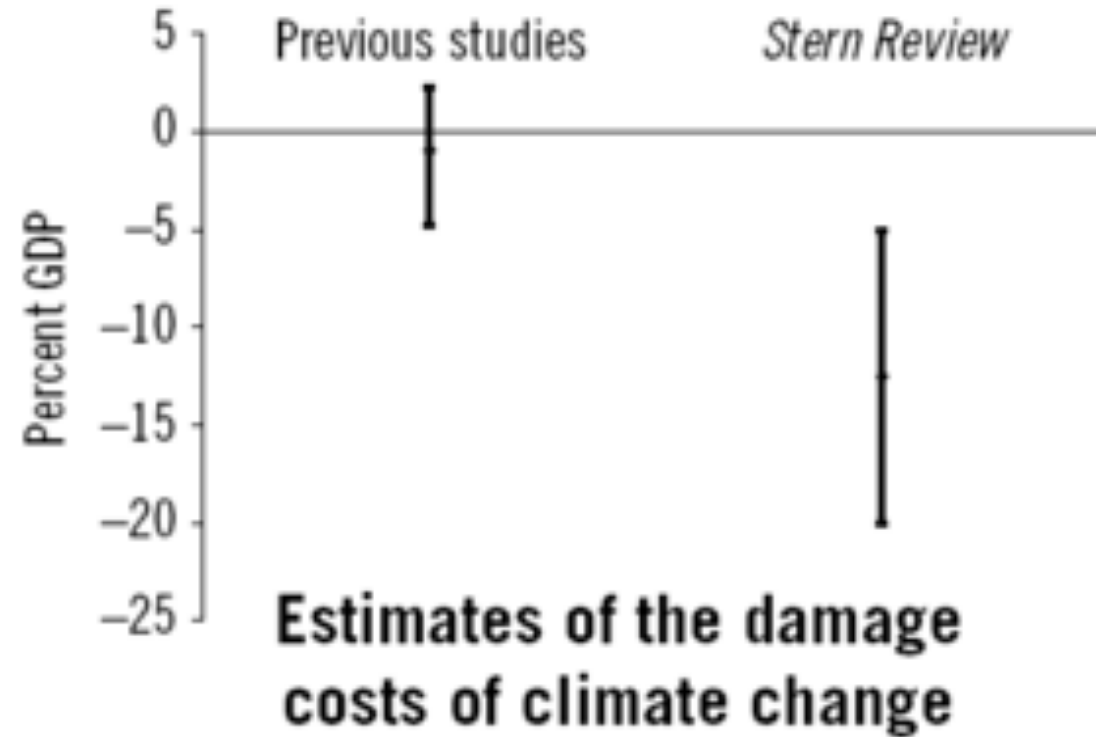
Coronaviruses capable of infecting humans may have been circulating undetected in bats for decades.



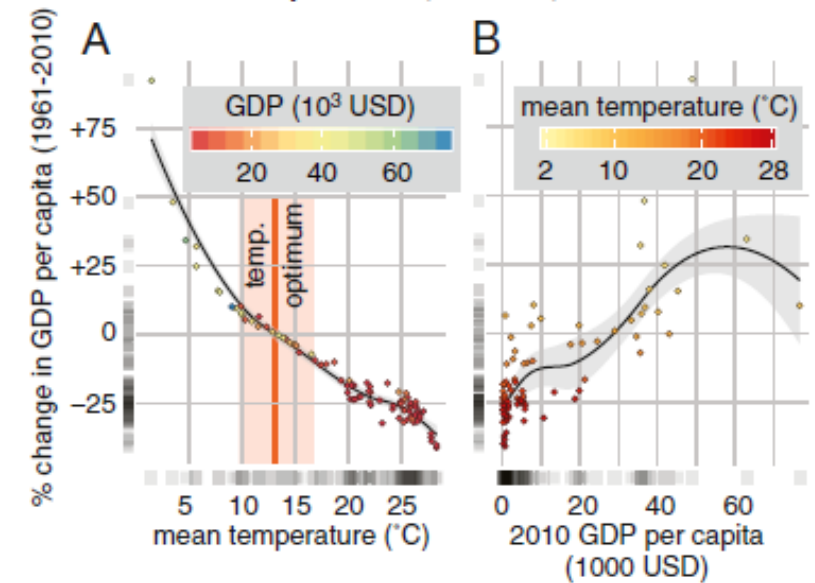
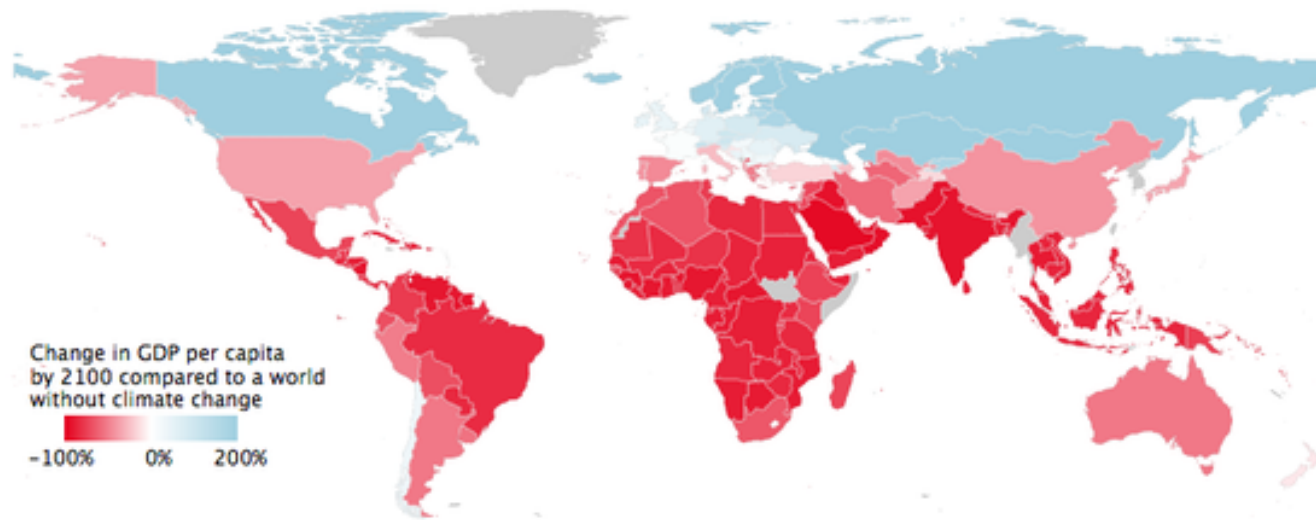
Sources: Beyer, Robert M., Andrea Manica, and Camilo Mora. 2021. "Shifts in Global Bat Diversity Suggest a Possible Role of Climate Change in the Emergence of SARS-CoV-1 and SARS-CoV-2." *Science of The Total Environment* 767: 145413.  
<https://www.bbc.com/news/science-environment-53584936>

# Effects of the ordering of nature

- Stern Review:
  - Climate change as the gravest market failure in history



# Effects of the ordering of nature



Sources:

Burke, Marshall, Solomon M Hsiang, and Edward Miguel. 2015. "Global Non-Linear Effect of Temperature on Economic Production." *Nature* 527(7577): 235–39.

Diffenbaugh, Noah S, and Marshall Burke. 2019. "Global Warming Has Increased Global Economic Inequality." *PNAS* 116(20): 9808 LP – 9813.

# Effects of the ordering of nature

- “Scandinavians have it all. [...] They have some of the highest levels of happiness on the planet, and top virtually every ranking of human development.”
- “This kind of overconsumption is driving a global crisis of habitat destruction, species extinction and climate change. [But] the bulk of their ecological impact has been outsourced to the global South.”



## OPINION

Opinions | Environment

### The dark side of the Nordic model

*Scandinavian countries may top every ranking on human development, but they are a disaster for the environment.*



Jason Hickel

Academic at the University of London and Fellow of the Royal Society of Arts.

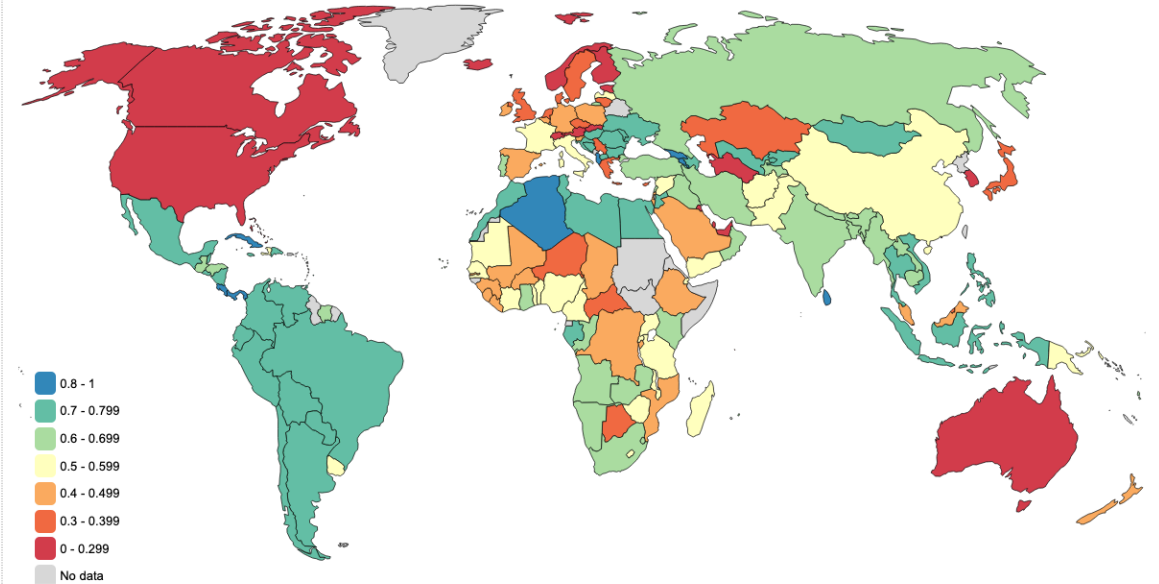
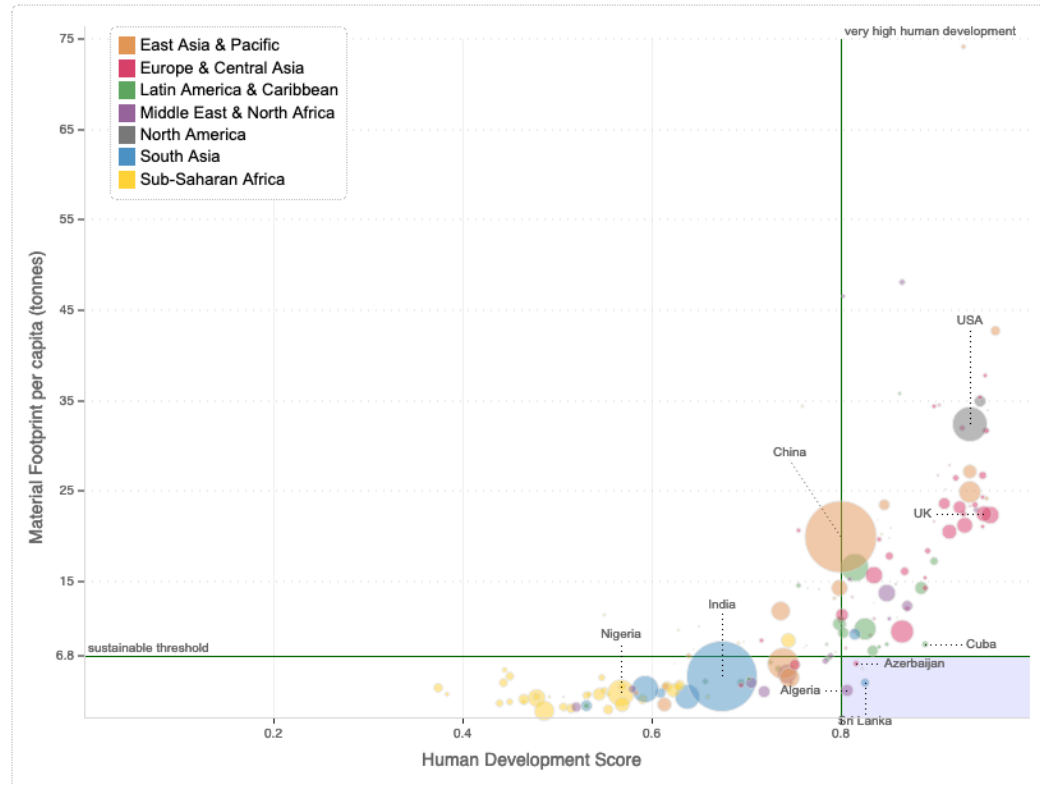
6 Dec 2019



Extinction Rebellion demonstrators protest in front of Norway's embassy during the launch of a new wave of civil disobedience in Berlin, Germany, October 11, 2019 [Christian Mang/Reuters]

# Sustainable Development Index

## HUMAN DEVELOPMENT VS ECOLOGICAL IMPACT - 2015 DATA



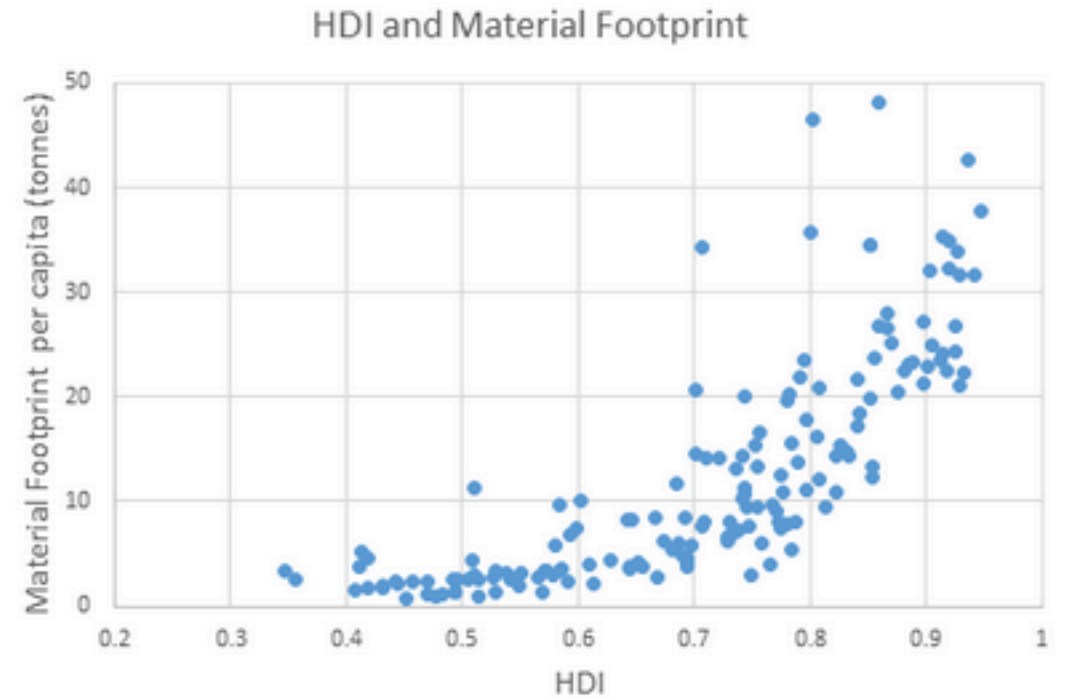
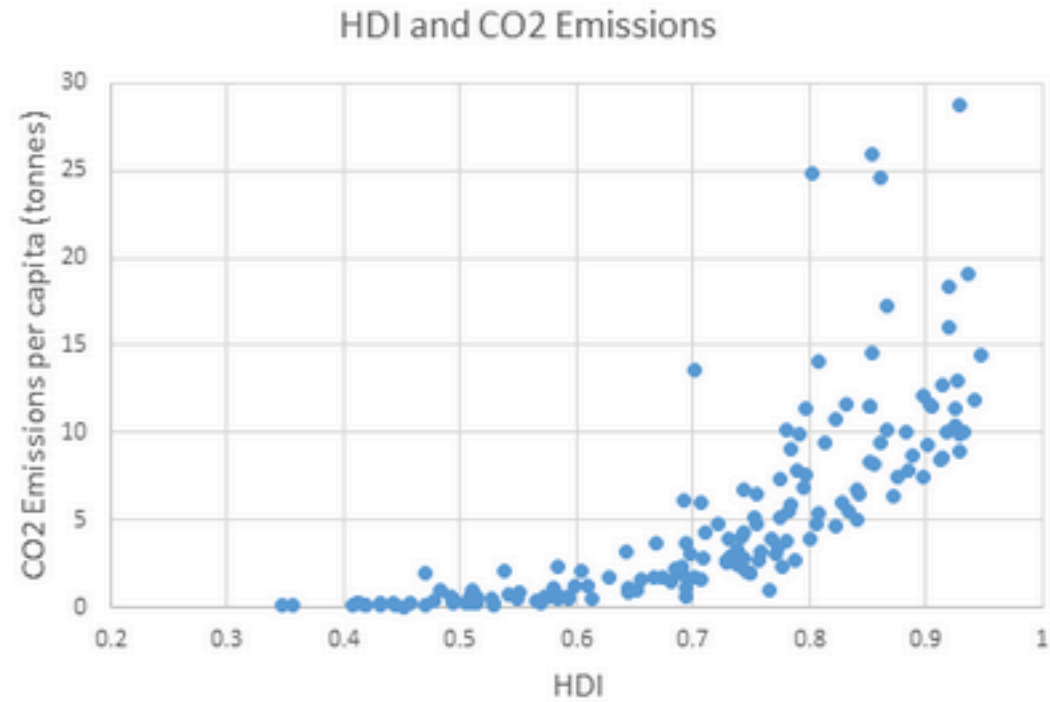
Sources:

Hickel, Jason. 2020. "The Sustainable Development Index: Measuring the Ecological Efficiency of Human Development in the Anthropocene." *Ecological Economics* 167 (November 2019): 106331.

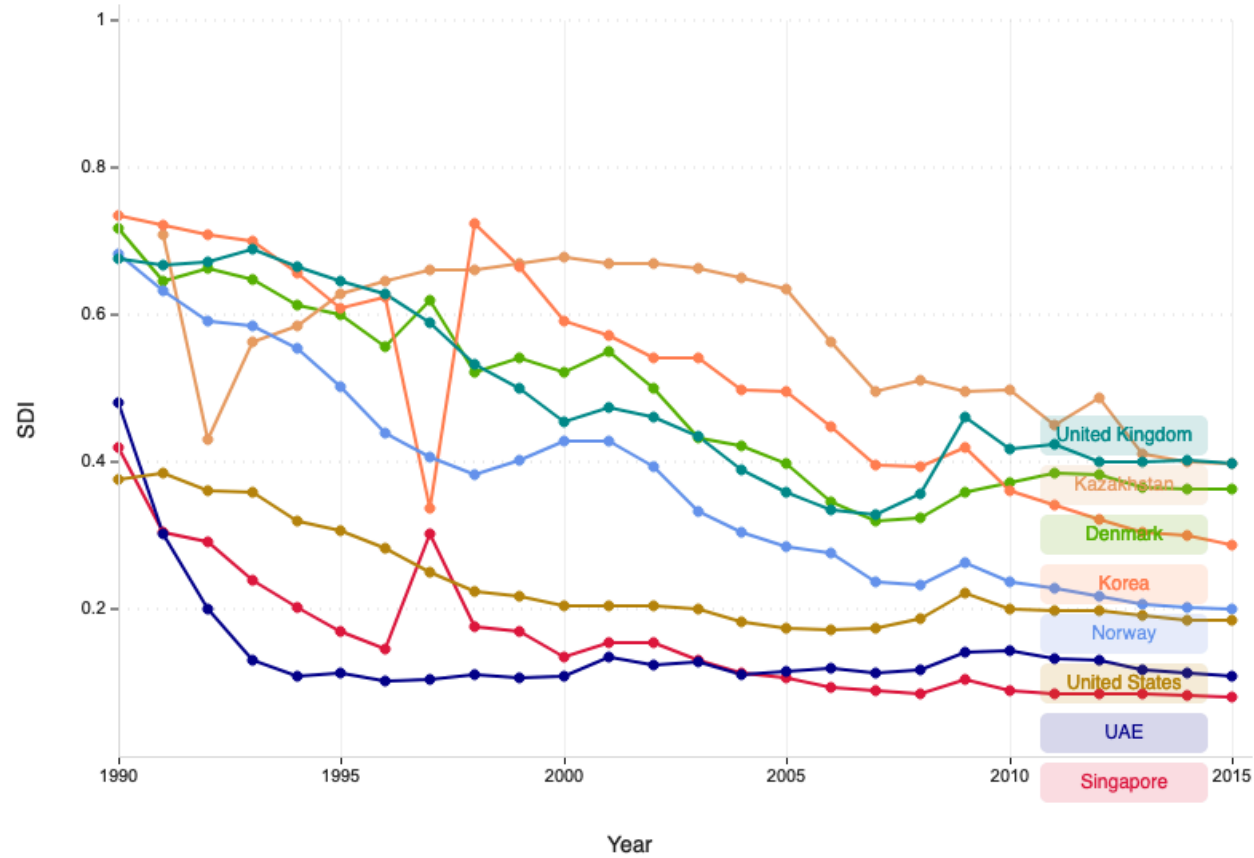
<https://www.sustainabledevelopmentindex.org/>



# Sustainable Development Index



# Sustainable Development Index



# Sustainable development

- Brundtland Report, 1987:
  - “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
  - “[The problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role...”



# Sustainable Development Goals

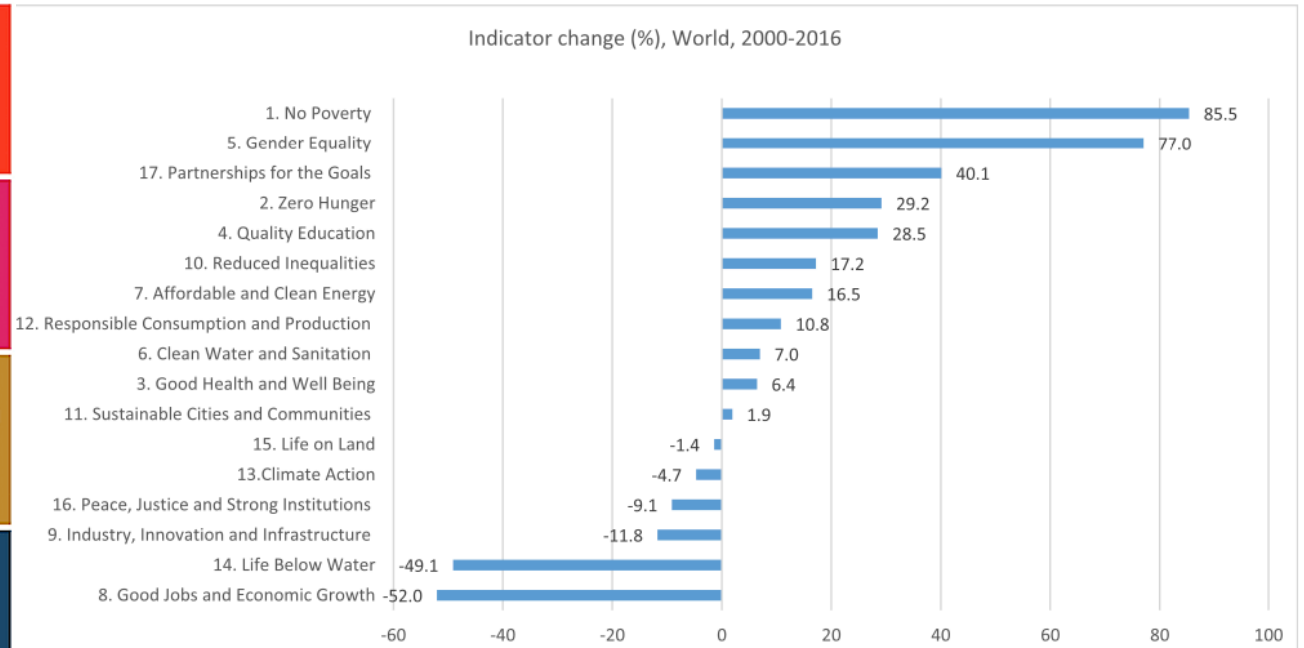
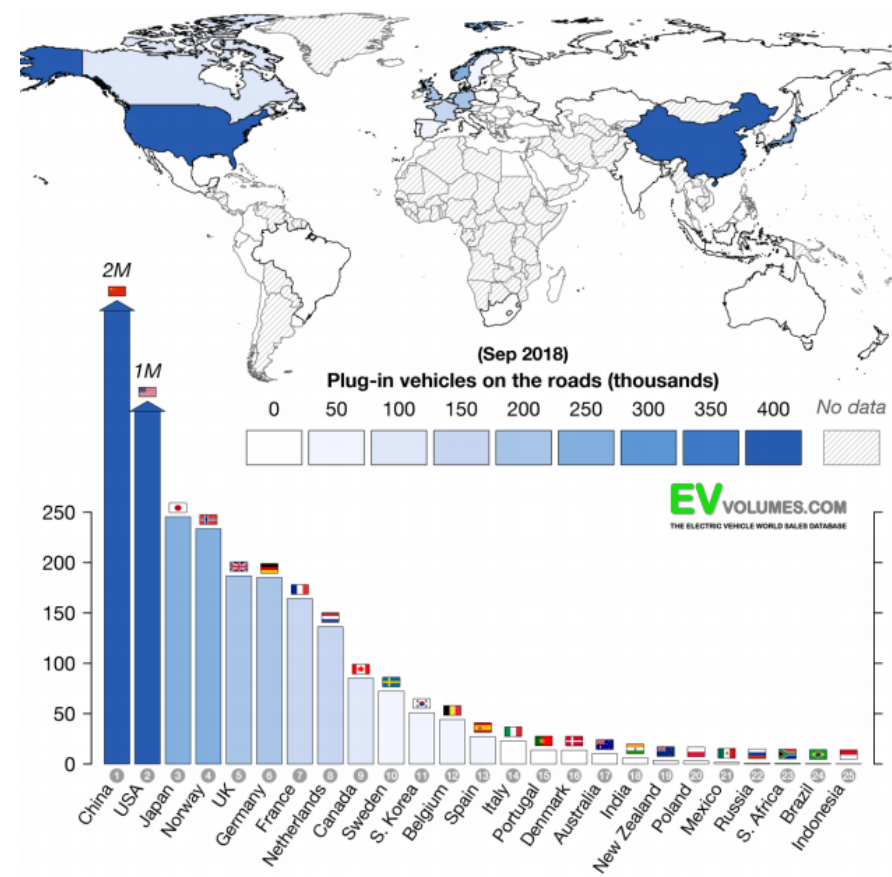
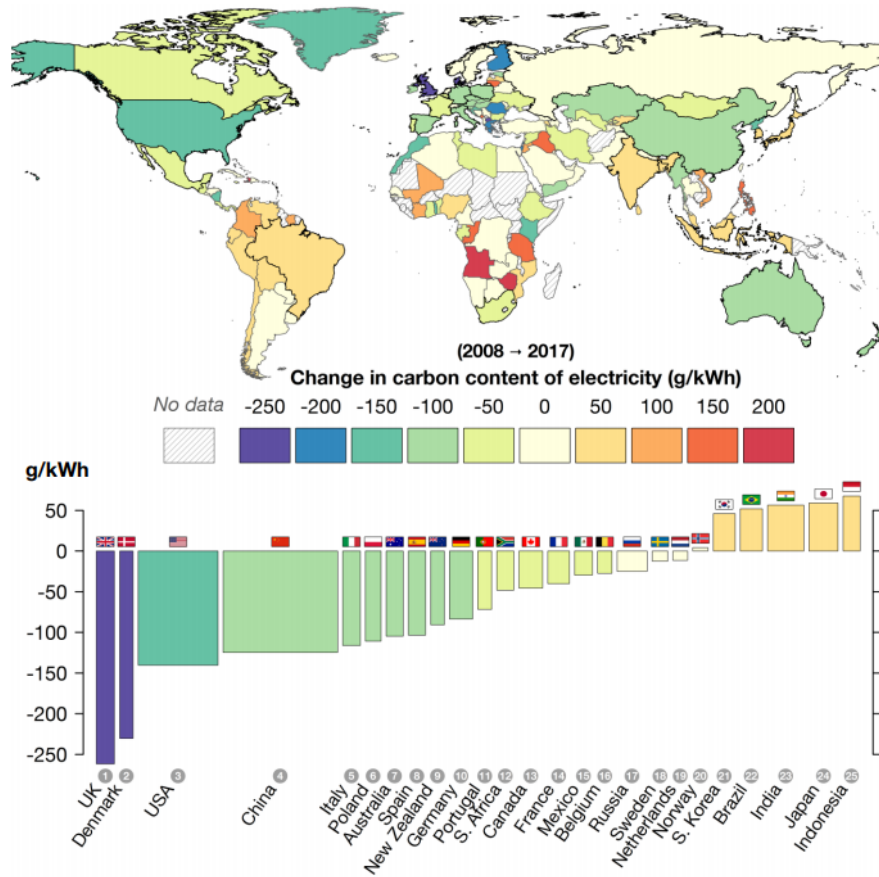


Fig. 1. Net change (%) in SDG indicators, World, 2000–2016. Source: Based on Table 2.

# Path to sustainability



Source: Staffell, I. et al. 2018. "Energy Revolution: A Global Outlook." London: Drax.

# Path to sustainability

## Report: we have just 12 years to limit devastating global warming

A UN panel of scientists says every bit of warming matters, and we're almost out of time to keep it in check.

By Umair Irfan | Oct 8, 2018, 9:10am EDT



Refugees in Yemen collect water under strict rationing due in part to drought. The new IPCC report finds that events like droughts will become more frequent and devastating under 2°C of warming compared to 1.5°C. | Giles Clarke/UN OCHA/Getty Images

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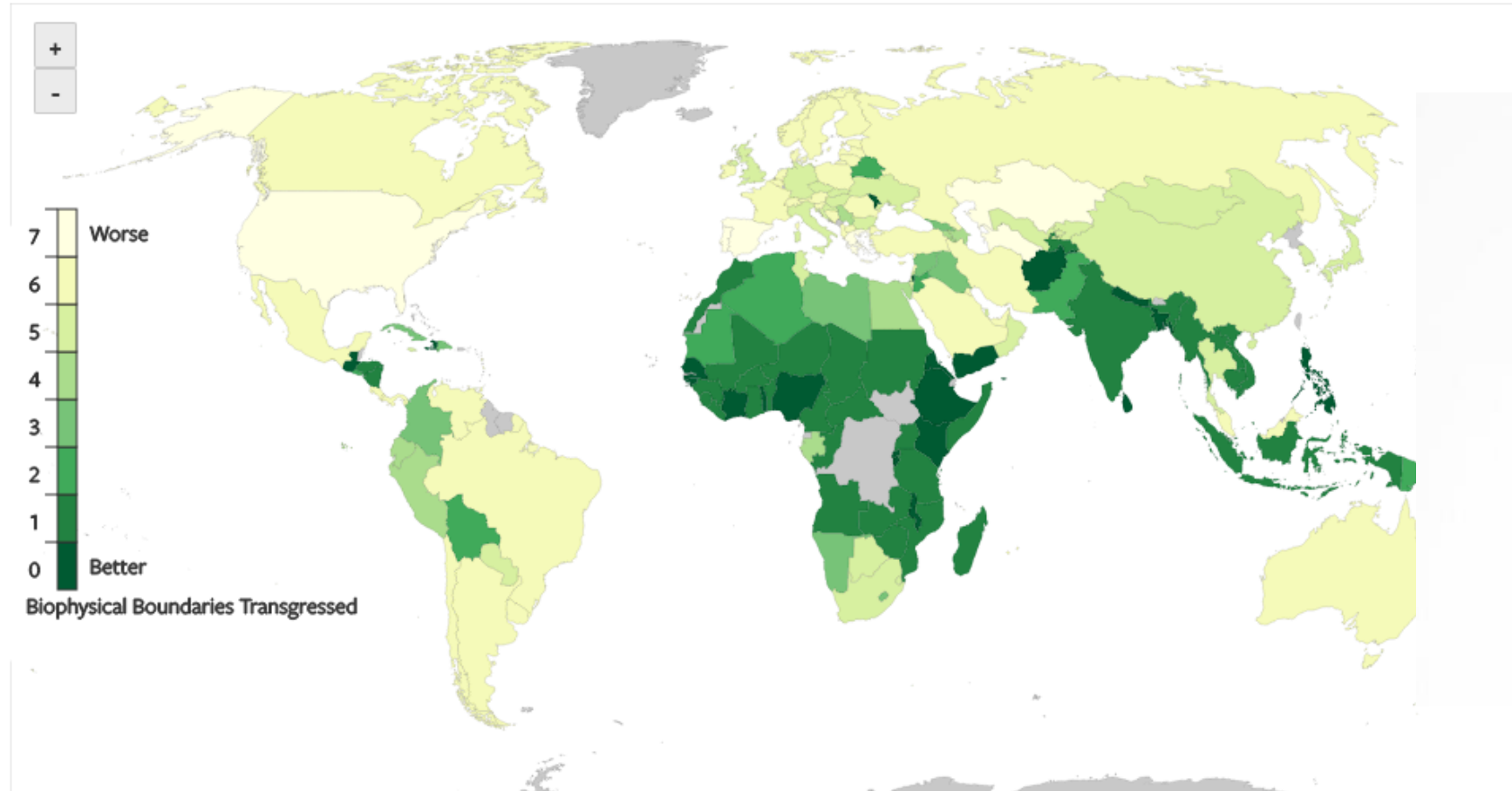
The Supreme Court's new decision about evangelical preachers on campus, explained

# Path to sustainability

- Hickel & Kallis:
  - Impossibility of reducing emissions while economic growth continues with current emissions reduction technologies
  - “It seems likely that the insistence on green growth is politically motivated. The assumption is that it is not politically acceptable to question economic growth and that no nation would voluntarily limit growth in the name of the climate or environment; therefore green growth must be true, since the alternative is disaster.”

• Hickel, Jason, and Giorgos Kallis. 2020. “Is Green Growth Possible?” *New Political Economy* 25(4): 469–86.

# Development within planetary boundaries

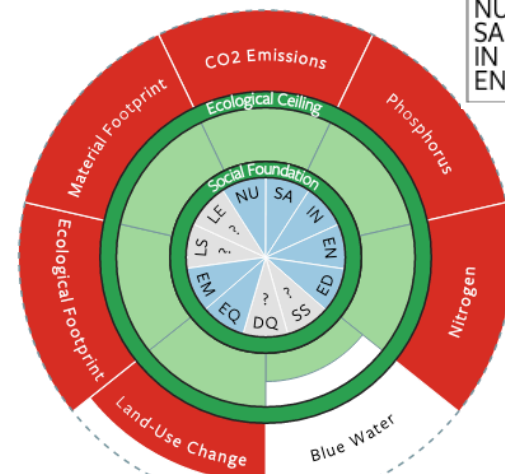
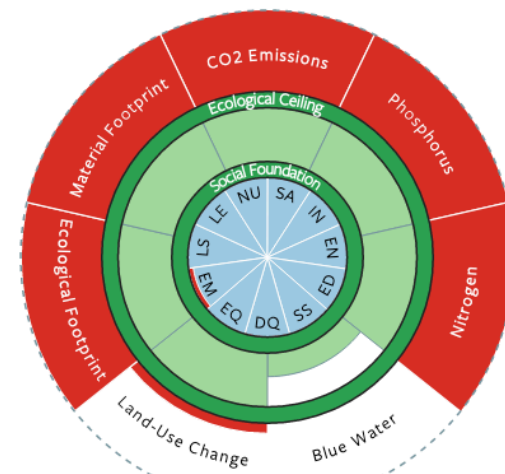
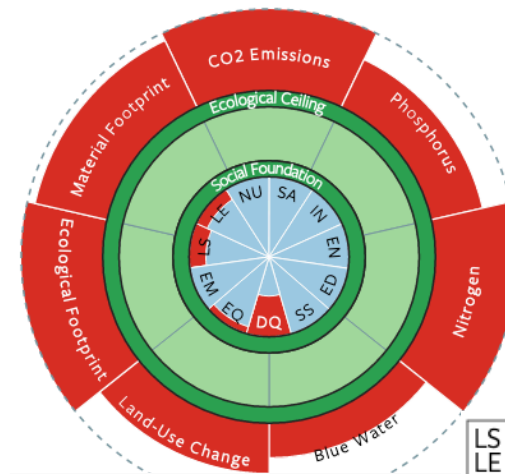
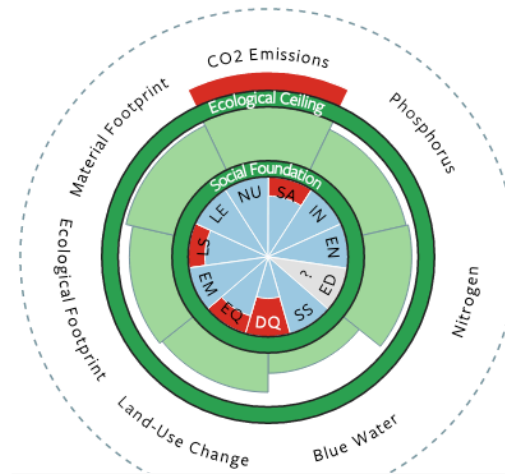


Sources: O'Neill, Daniel W, Andrew L Fanning, William F Lamb, and Julia K Steinberger. 2018. "A Good Life for All within Planetary Boundaries." *Nature Sustainability* 1(2): 88–95. <https://goodlife.leeds.ac.uk/>



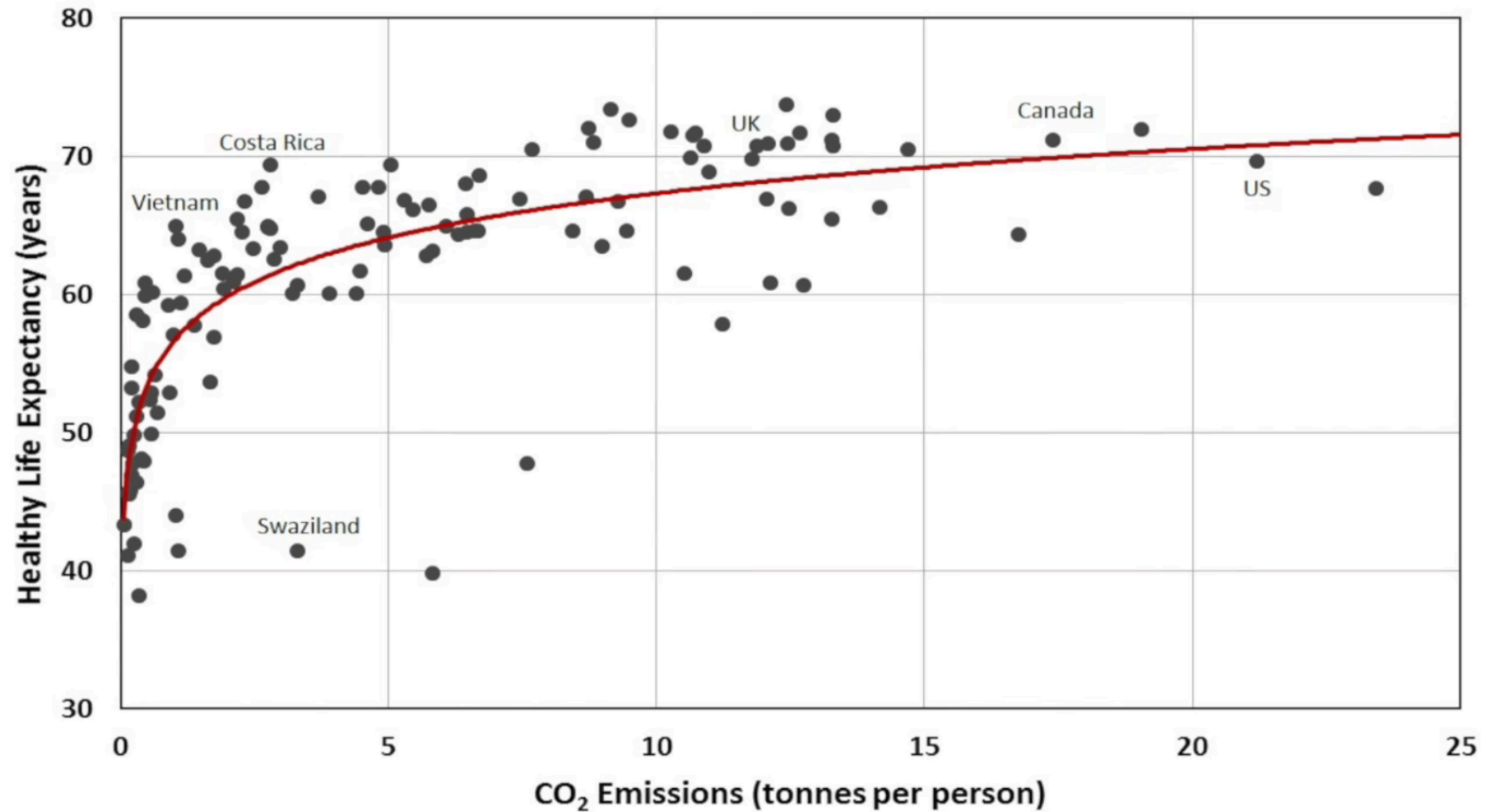
# Development within planetary boundaries

- Clockwise:
  - Vietnam
  - Kazakhstan
  - Norway
  - Denmark



LS - Life Satisfaction	ED - Education
LE - Healthy Life Expect.	SS - Social Support
NU - Nutrition	DQ - Democratic Quality
SA - Sanitation	EQ - Equality
IN - Income	EM - Employment
EN - Access to Energy	

# Development within planetary boundaries



# Degrowth?

- Hickel:

- Necessity of reduction of biophysical footprints in developed countries —>

- Degrowth

- Hickel, Jason. 2018. "Is It Possible to Achieve a Good Life for All within Planetary Boundaries?" *Third World Quarterly* 0(0): 1–17.

- Milanović:

- Impossible to implement, but not necessarily factually wrong

- <https://glineq.blogspot.com/search?q=degrowth>
- <https://www.jasonhickel.org/blog/2017/11/19/why-branko-milanovic-is-wrong-about-de-growth>
- <https://www.jasonhickel.org/blog/2017/11/22/why-branko-milanovic-is-wrong-about-de-growth-ii>

# Seeing nature and society like a state

- “The invention of scientific forestry, freehold tenure, planned cities, collective farms, *ujamaa* villages, and industrial agriculture, for all their ingeniousness, represented fairly simple interventions into enormously complex natural and social systems. After being abstracted from systems whose interactions defied a total accounting, a few elements were then made the basis for an imposed order. At best, the new order was fragile and vulnerable, sustained by improvisations not foreseen by its originators. At worst, it wreaked untold damage in shattered lives, a damaged ecosystem, and fractured or impoverished societies.”

# Takeaways

- Necessity of state capacity for development
- Detrimental effects of the use of state capacity to effect development