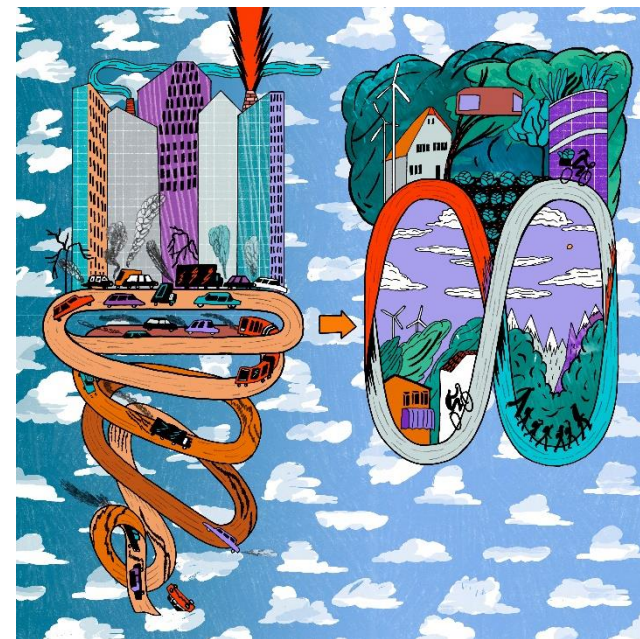

Understanding the Social Drivers of Global Environmental Change

Prof. Julia Leventon

Overview

- What causes climate change?
- What causes biodiversity loss?
- Symptoms of the same social problem
- Understanding social drivers for creating responses
- Essay assignment!

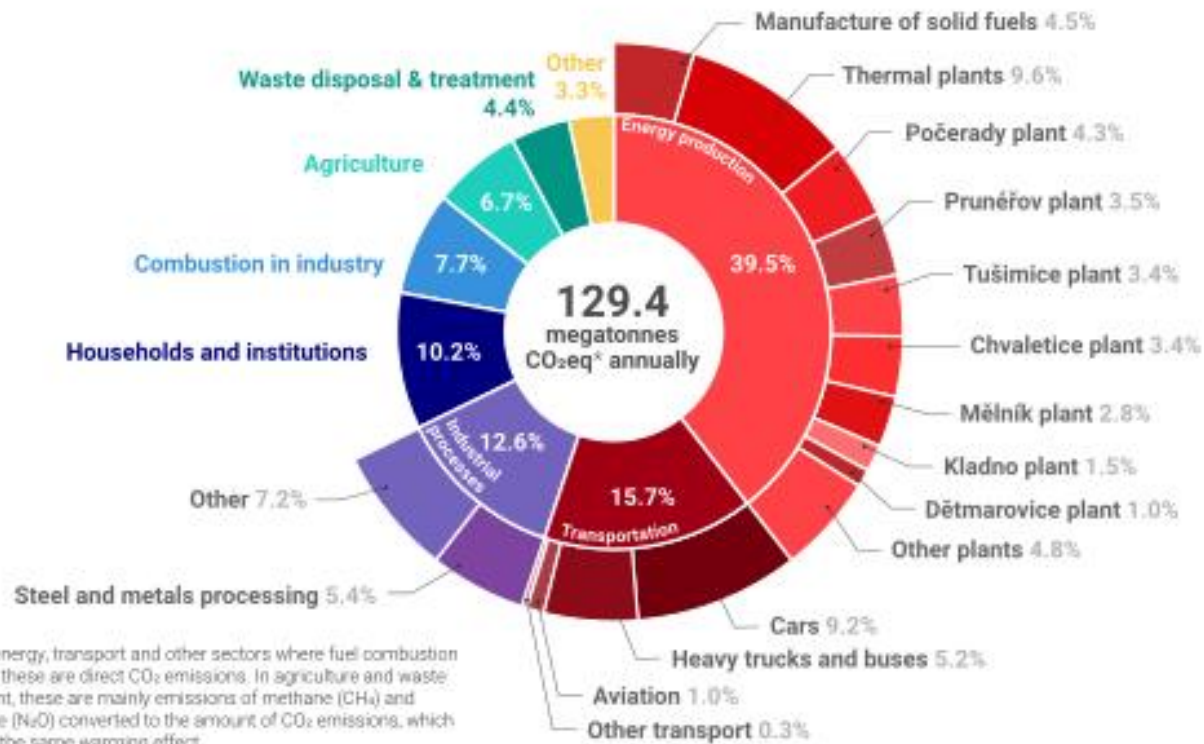


What causes climate change?

GREENHOUSE GAS EMISSIONS IN CZECHIA BY SECTORS



Czechia's total emissions in 2018



*CO₂eq: In energy, transport and other sectors where fuel combustion is essential, these are direct CO₂ emissions. In agriculture and waste management, these are mainly emissions of methane (CH₄) and nitrous oxide (N₂O) converted to the amount of CO₂ emissions, which would have the same warming effect.

VERSION 2023-05-12 | LICENSE CC BY 4.0

Read more at factsonclimate.org/emissions-czechia

Data source: European Environment Agency

What causes biodiversity loss?

DRIVERS

INDIRECT DRIVERS

DEMOGRAPHIC AND SOCIOCULTURAL

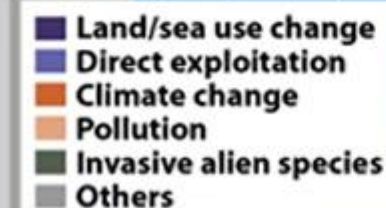
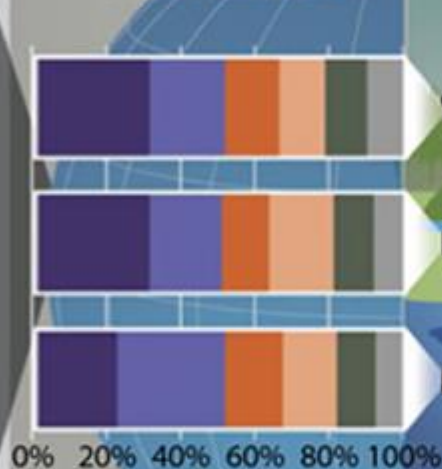
ECONOMIC AND TECHNOLOGICAL

INSTITUTIONS AND GOVERNANCE

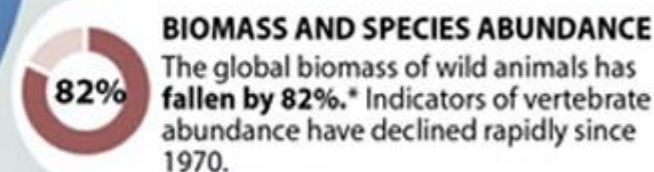
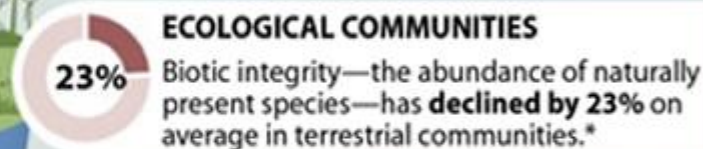
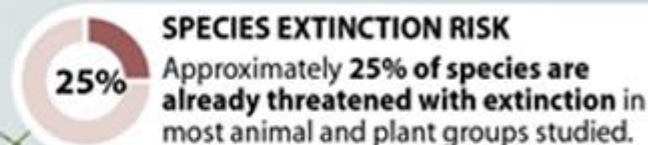
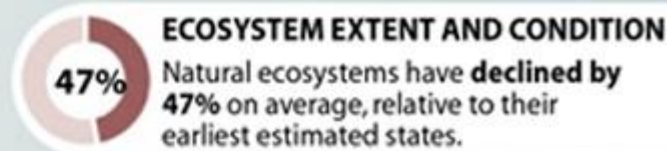
CONFLICTS AND EPIDEMICS

Values and behaviors

DIRECT DRIVERS



EXAMPLES OF DECLINES IN NATURE



*since prehistory

Are they symptoms of the same social problem?

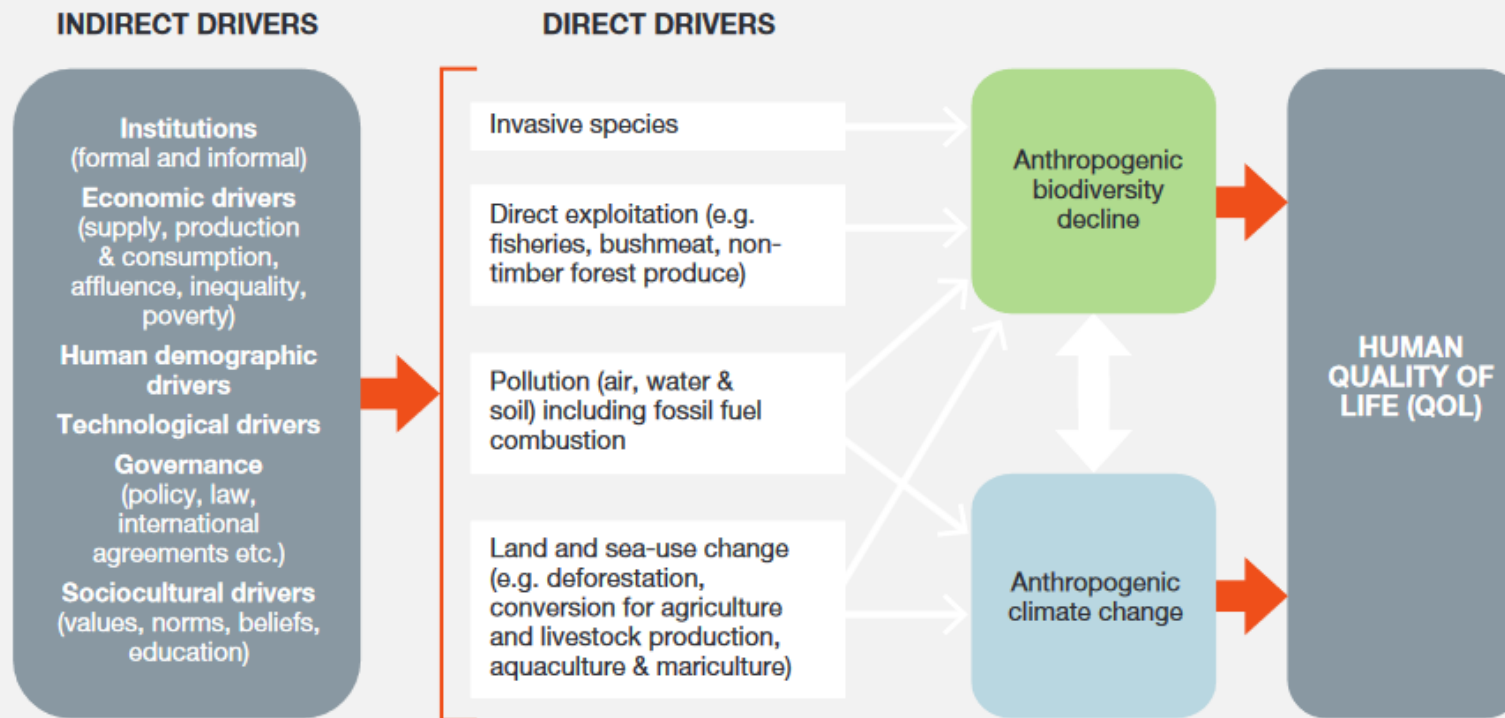
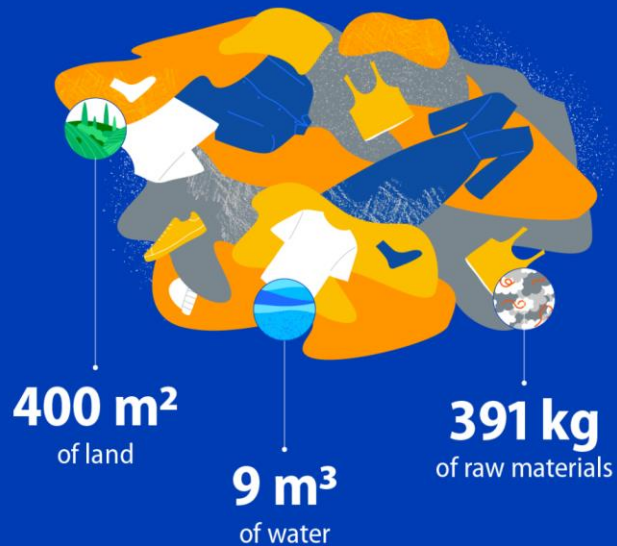


Figure 1 3 Indirect and direct drivers of biodiversity loss and climate change due to human activities.

Climate change and biodiversity loss share common underlying drivers, and both impact (mostly in negative ways) people's quality of life.

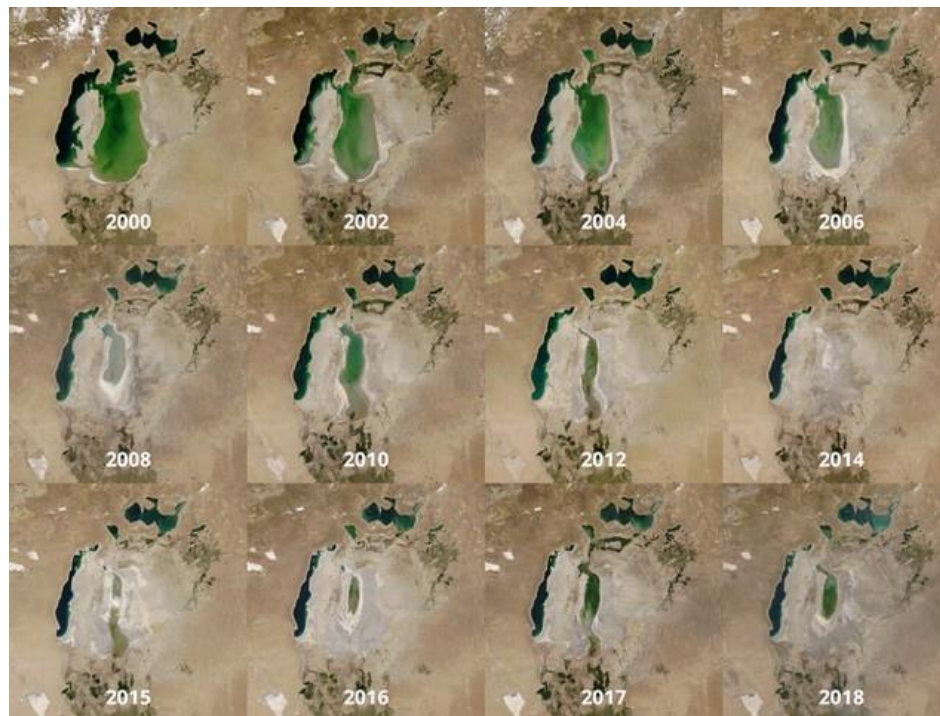
THE ENVIRONMENTAL IMPACT OF TEXTILES

In 2020 textile consumption
per person in the EU required on average:



And caused a carbon
footprint of about **270 kg**

Source: European Environment Agency (2023)



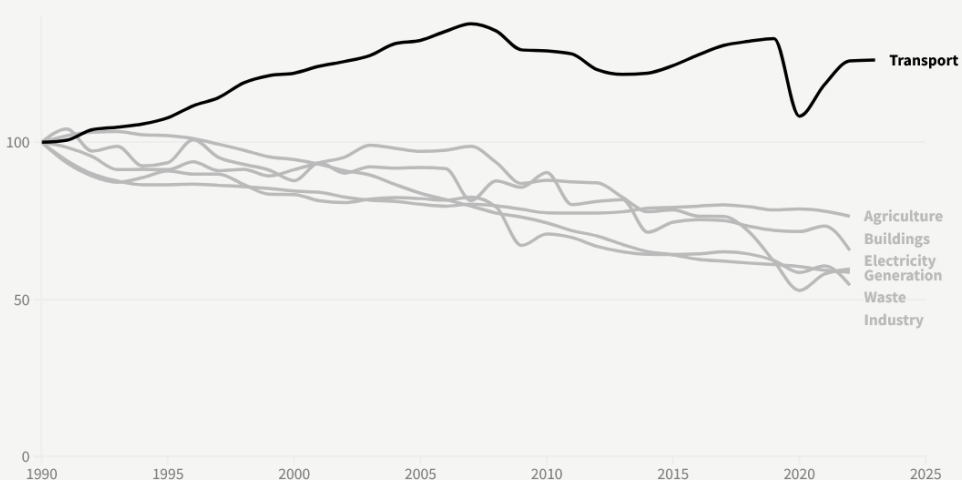
[This Photo](#) by Unknown Author is licensed under [CC BY](#)

See also:

<https://ejatlas.org/print/the-aral-sea-dried-due-to>

European Union

Change in greenhouse gas emissions by sector, MtCO₂e (1990 = 100)

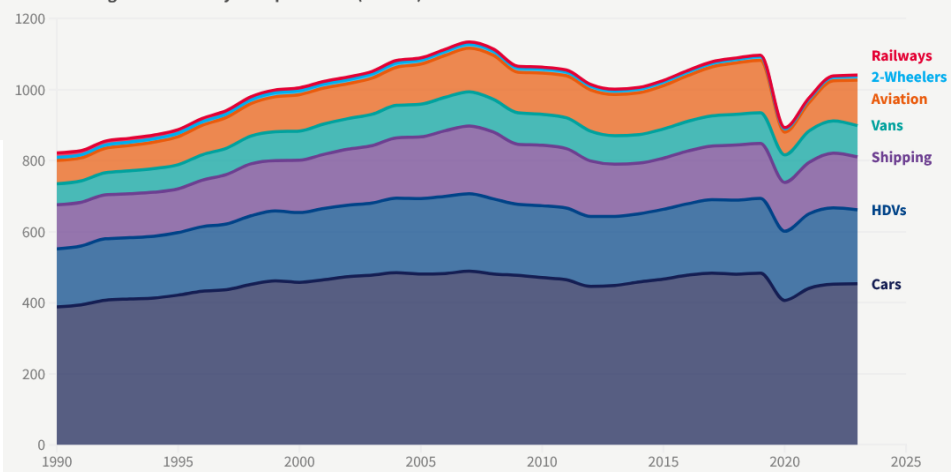


Source: UNFCCC GHG inventories, EEA, Stratas Advisors • Transport includes international aviation and maritime emissions. Public electricity includes heat generation



European Union

Greenhouse gas emissions by transport mode (MtCO₂e)



Source: UNFCCC GHG inventories, EEA, Stratas Advisors



- In the EU, **over 58 million tonnes** of food waste (131 kg/inhabitant) are generated annually ([Eurostat, 2023](#)), with an associated market value estimated at **132 billion euros** ([SWD \(2023\)421](#)).
- Eurostat roughly estimates that around **10% of food made available to EU consumers (at retail, food services and households)** may be wasted. At the same time, **over 37 million people** cannot afford a quality meal every second day ([Eurostat, 2023](#)).
- Globally, approximately **a third of all food produced** for human consumption is lost or wasted ([FAO, 2011](#)). FAO's Food Loss Index (FLI) estimates that globally, around **14 percent of all food produced** is lost from the post-harvest stage up to, but excluding, the retail stage ([FAO, 2019](#)).

See: https://food.ec.europa.eu/safety/food-waste_en

“Yes, perhaps, but these caves have highly efficient facilities for cooking, storing food and washing clothes; low energy lighting throughout; 50L of clean water supplied per day per person, with 15L heated to a comfortable bathing temperature; they maintain an air temperature of around 20°C throughout the year, irrespective of geography; have a computer with access to global ICT networks; are linked to extensive transport networks providing 5000-15000km of mobility per person each year via various modes; and are also served by substantially larger caves where universal healthcare is available and others that provide education for everyone between 5 and 19 years old.”

Milward-Hopkins et al., 2020

The Social Drivers of Global Environmental Change

- Three underlying causes
 - Domination over people and nature
 - Prioritisation of immediate, individual material gains
 - Accumulation of power and wealth
- Enacted and reinforced through our political systems, laws and behaviours (indirect drivers)
- Create emissions, pollution, demand for energy (direct drivers)
- Provide barriers to change

- Domination over people and nature

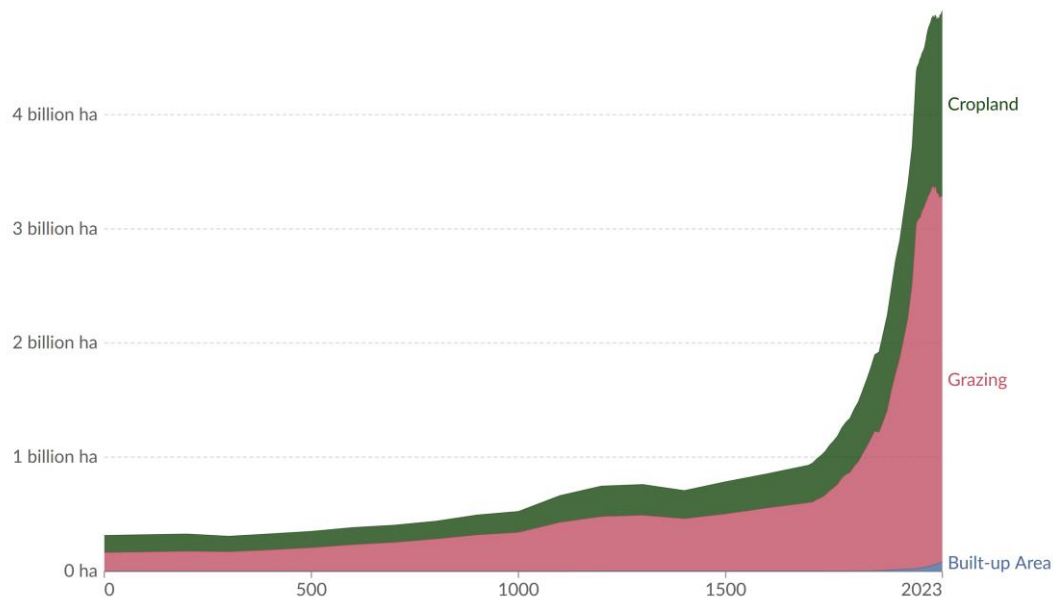


From Raya, 2022

Land use over the long-term, World, 0 to 2023

Total land area used for cropland, grazing land and built-up areas (villages, cities, towns and human infrastructure).

Our World in Data



Data source: HYDE (2023)

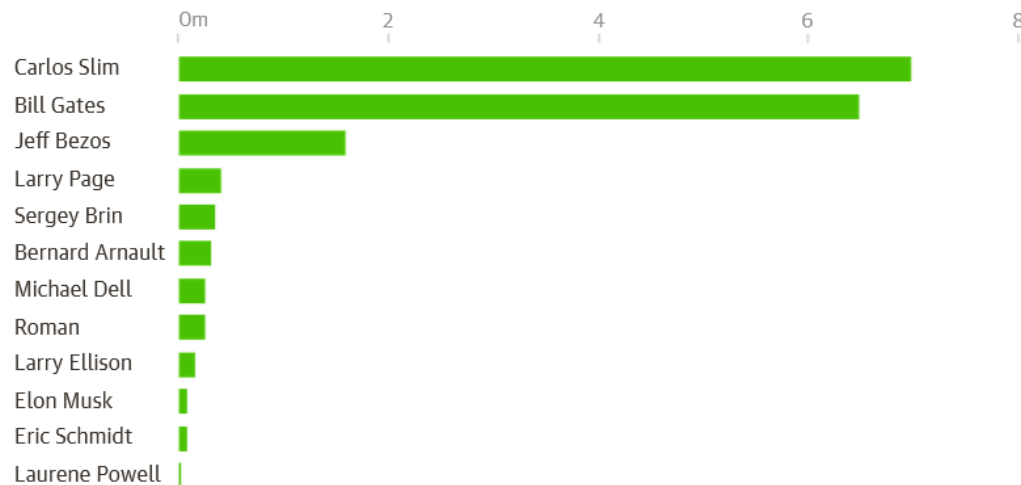
OurWorldInData.org/land-use | CC BY

- **Prioritisation of immediate and individual material gains**
- See e.g. Ben Ansell: *Why Politics Fails*
 - Prosperity trap – what makes us richer in the short term, makes us poorer in the long-term
- See e.g. David Runciman: *How Democracy Ends*
- See e.g. Rebecca Willis: *Too Hot to Handle*
 - Difference in electoral cycles and the timeframe of e.g. climate change

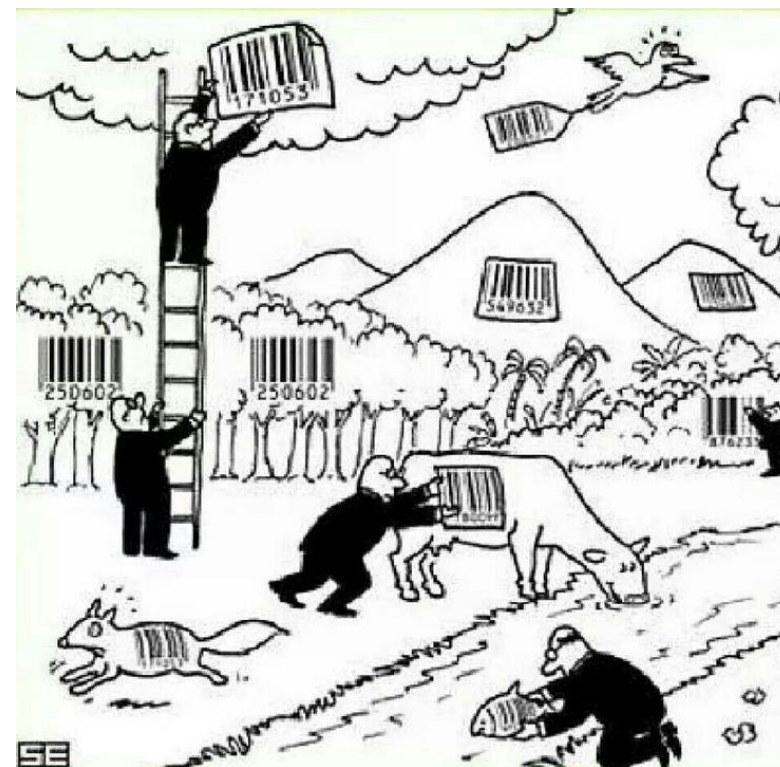
• Accumulation of power and wealth

A dozen of the world's richest billionaires are responsible for nearly 17m tonnes of greenhouse emissions

Emissions from dwellings, transport, yachts and investments, tonnes of CO2 equivalent, millions



Guardian graphic. Source: Beatriz Barros & Richard Wilk. Note: carbon footprints of investments were calculated using equity stakes held in a company by each individual and estimates of the carbon impact of company's holdings calculated using their declarations on emissions



- Conclusions

Essays

The assessment is a written essay. The student will select a topic from the course that they have found interesting, and create an essay title for themselves. The teaching team will help in guiding on a suitable title and the content. Therefore, the assessment is in two parts, to allow a chance for the teachers to provide useful feedback for students to build on:

- Essay title and outline (20%)
 - 2 Pages with sub headings and bullet points
- Completed essay (80%)
 - 2000 words
 - Referencing academic literature (reference list is not included in word count)

Thank You!

- Email: leventon.j@czechglobe.cz
- Twitter: @julialeventon
- <https://sustainablecz.org/>