

Some thoughts about food & catering

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Why this talk?

We organised a PhD-school in 2019 in Vienna with vegan catering.

Disclaimer: I'm not an expert

Content

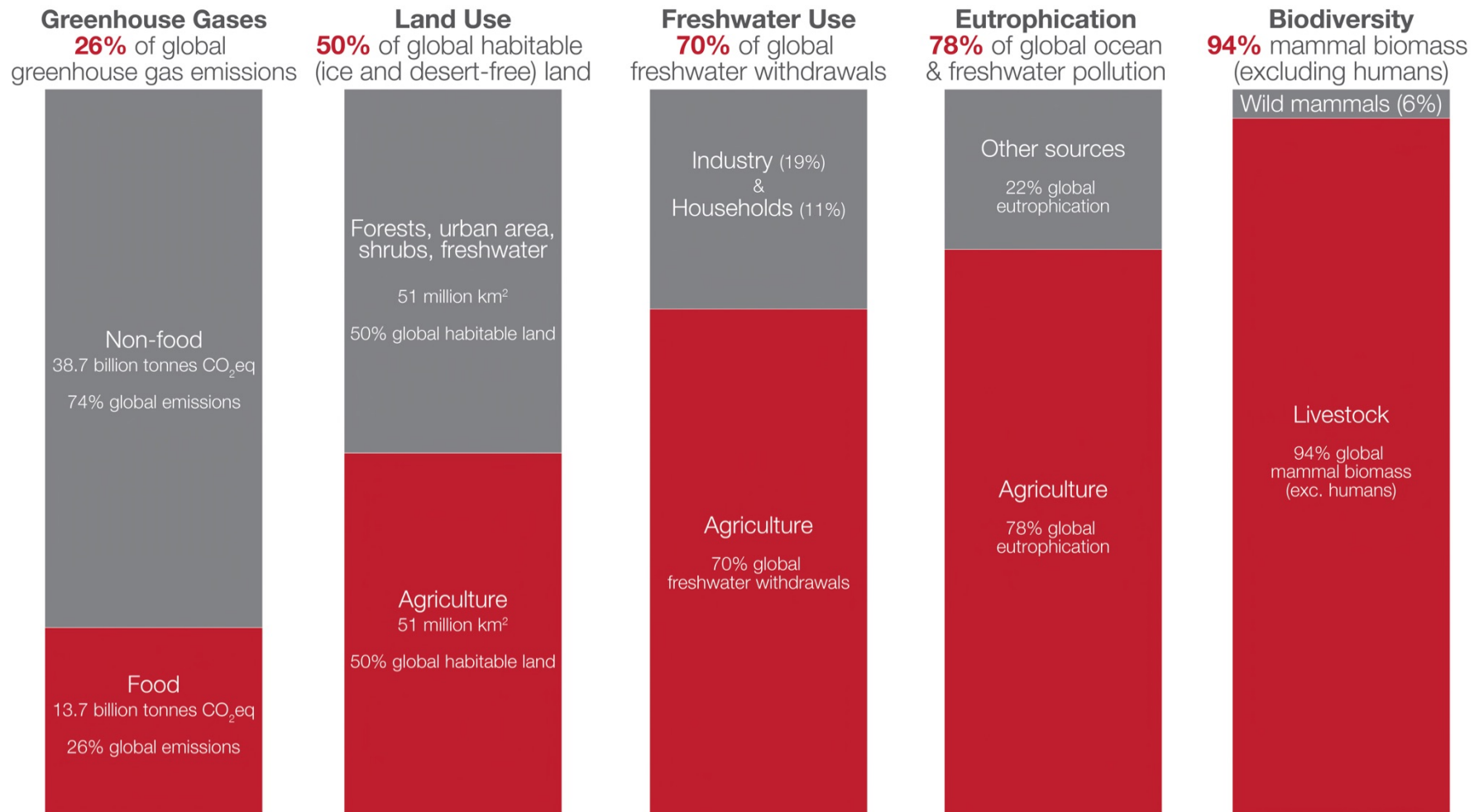
- 1) Some general data
- 2) Thoughts & experiences

1) Some general data

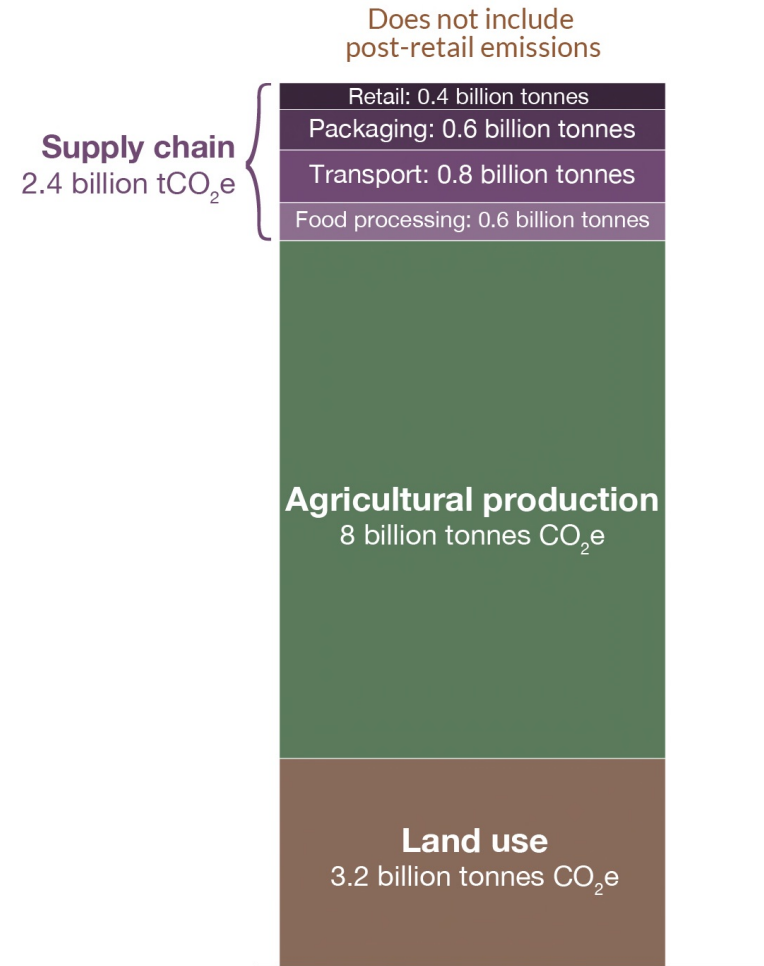
- Food system / agriculture has significant impact

What are the environmental impacts of food and agriculture?

Our World
in Data



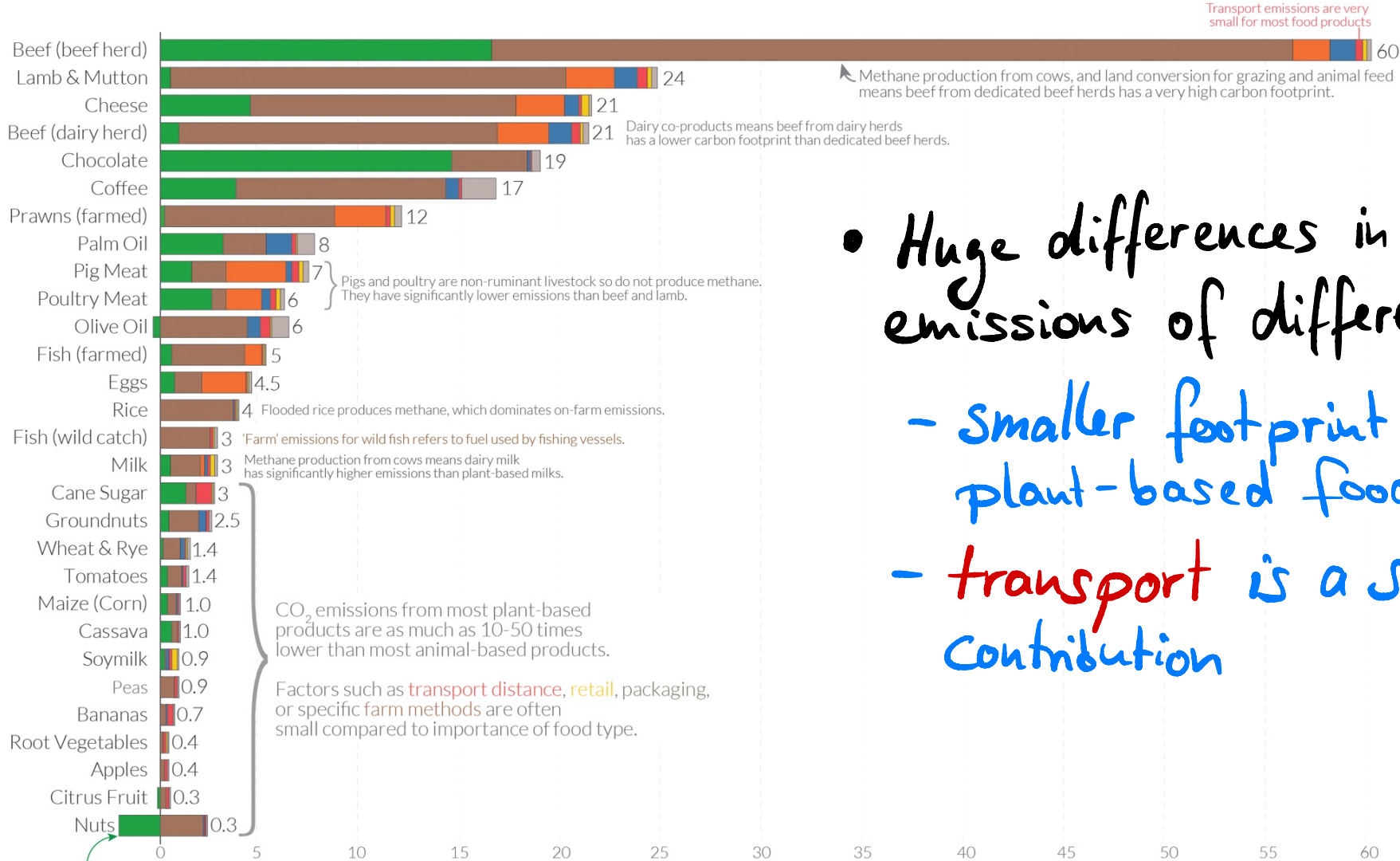
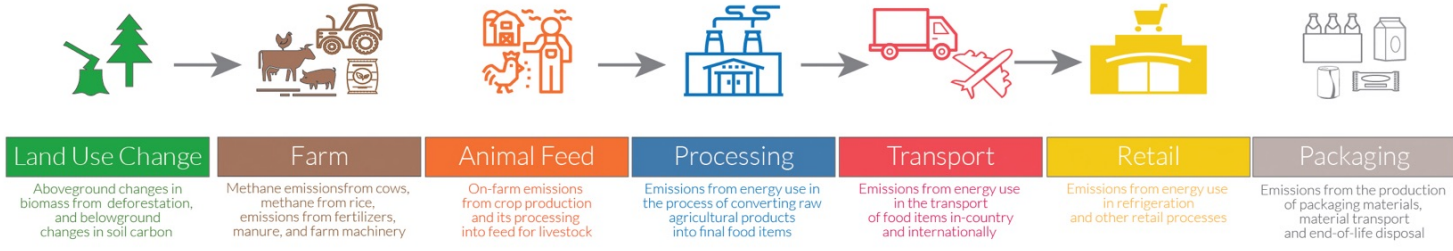
- Food system produces at least one **quarter** of global GHG emissions greenhouse gas



Poore and Nemecek (2018)
13.6 billion tonnes CO₂e from food
That's 26% of global GHG emissions
(Increases to 33% with non-food agricultural products)

from [OurWorldinData.org](https://www.ourworldindata.org)
Author Hannah Ritchie

Food: greenhouse gas emissions across the supply chain



Transport emissions are very small for most food products

Methane production from cows, and land conversion for grazing and animal feed means beef from dedicated beef herds has a very high carbon footprint.

Dairy co-products means beef from dairy herds has a lower carbon footprint than dedicated beef herds.

Pigs and poultry are non-ruminant livestock so do not produce methane. They have significantly lower emissions than beef and lamb.

Flooded rice produces methane, which dominates on-farm emissions.

'Farm' emissions for wild fish refers to fuel used by fishing vessels.

Methane production from cows means dairy milk has significantly higher emissions than plant-based milks.

CO₂ emissions from most plant-based products are as much as 10-50 times lower than most animal-based products.

Factors such as transport distance, retail, packaging, or specific farm methods are often small compared to importance of food type.

Nuts have a negative land use change figure because nut trees are currently replacing croplands; carbon is stored in the trees.

Greenhouse gas emissions per kilogram of food product (kg CO₂-equivalents per kg product)

• Huge differences in GHG emissions of different foods

- smaller footprint of plant-based food

- transport is a small contribution

Author: Hannah Ritchie

- Changing diets has a huge potential in reducing GHG emissions

Demand-side mitigation
GHG mitigation potential of different diets

from IPCC, 2019: Climate change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.

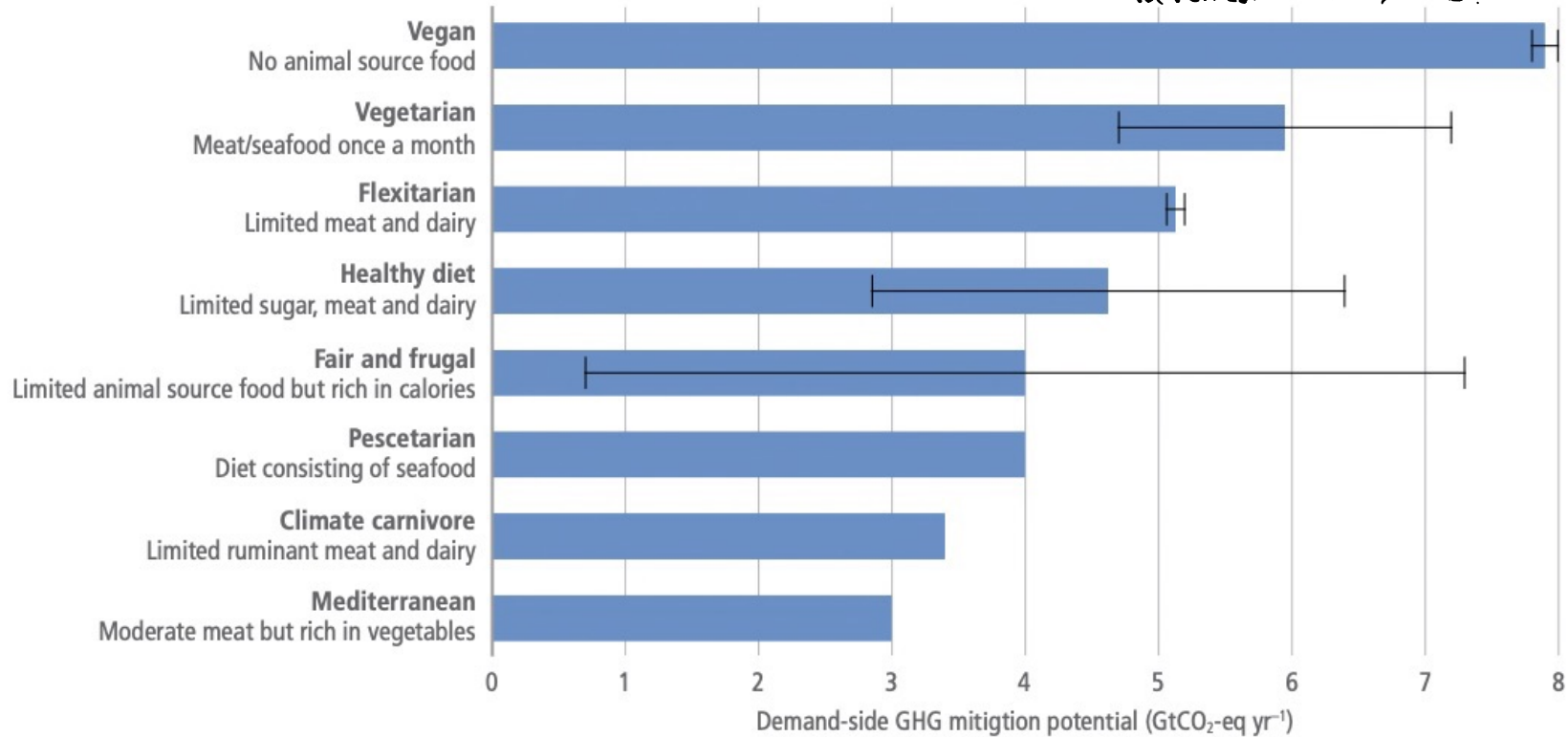


Figure 5.12 | Technical mitigation potential of changing diets by 2050 according to a range of scenarios examined in the literature. Estimates indicate technical potential only and include additional effects of carbon sequestration from land-sparing. Data without error bars are from one study only.

All diets need to provide a full complement of nutritional quality, including micronutrients (FAO et al. 2018).

Vegan: Completely plant-based (Springmann et al. 2016b; Stehfest et al. 2009).

Vegetarian: Grains, vegetables, fruits, sugars, oils, eggs and dairy, and generally at most one serving per month of meat or seafood (Springmann et al. 2016b; Tilman and Clark 2014; Stehfest et al. 2009).

Flexitarian: 75% of meat and dairy replaced by cereals and pulses; at least 500 g per day fruits and vegetables; at least 100 g per day of plant-based protein sources; modest amounts of animal-based proteins and limited amounts of red meat (one portion per week), refined sugar (less than 5% of total energy), vegetable oils high in saturated fat, and starchy foods with relatively high glycaemic index (Springmann et al. 2018a; Hedenus et al. 2014).

Healthy diet: Based on global dietary guidelines for consumption of red meat, sugar, fruits and vegetables, and total energy intake (Springmann et al. 2018a; Bajželj et al. 2014).

Fair and frugal: Global daily per-capita calorie intake of 2800 kcal/cap/day (11.7 MJ/cap/day), paired with relatively low level of animal products (Smith et al. 2013).

Pescetarian: Vegetarian diet that includes seafood (Tilman and Clark 2014).

Climate carnivore: 75% of ruminant meat and dairy replaced by other meat (Hedenus et al. 2014).

Mediterranean: Vegetables, fruits, grains, sugars, oils, eggs, dairy, seafood, moderate amounts of poultry, pork, lamb and beef (Tilman and Clark 2014).

→ Changing food habits can reduce the contribution of the food system to GHG emissions significantly.

Question: What can / should we do in this respect in science / HEP?

2) Thoughts & Experiences

- Some preliminary (obvious) remarks
 - Food is not a science-specific topic
 - Most food consumption privately

→ Can only address "food at work"
in canteens, at events, etc.

- Ambitious approach

Offer a completely vegan catering

- maximise reduction of environmental impact

- inclusive approach: everybody can eat the same

- raises awareness / advertises plant-based food

Example YRISW 2019 (School) in Vienna

- ~ 120 (young) participants
- fully vegan lunches & coffee breaks
- simple organisation : no need to offer different choices (except allergies) → cheaper
- important to have a specialised vegan caterer
- no complaints, but positive reactions
 - " I really like the inclusiveness of all the food options "
 - " Vegan food was great "
 - " Vegan food : amazing! "

Possible issues

- shouldn't people decide themselves?
 - people might expect traditional local food
 - reservations concerning vegan food
- ~> Acceptance?

- Minimal approach for catering

Shift towards lower impact food and include good options for plant-based food.

- support those who strive to reduce their footprint related to food
- leave decision to individuals
- offer according to demand

→ small direct effect on reduction, but could raise acceptance / awareness.

Example Strings 2022 in Vienna

- ~380 participants
- 6 different items at each lunch break
3 vegan + 2 vegetarian + 1 meat/fish
- From registration data:
 - 3% vegan
 - 11% vegetarian

Remark: The conference was certified according to the Austrian ecolabel "Green Meeting"

Summary

- Food system significant environmental impact.
- Shifting towards more plant-based food has an enormous potential.

↳ implementation in catering

- We had good experience with providing fully vegan catering at a school.
- In another conference we followed a much less ambitious approach: half buffet vegan.

~> What is the right approach? Acceptance?