



BENEFITS OF 1.5°C LIFESTYLES BEYOND CLIMATE

SCORAI EUROPE CONFERENCE 2025

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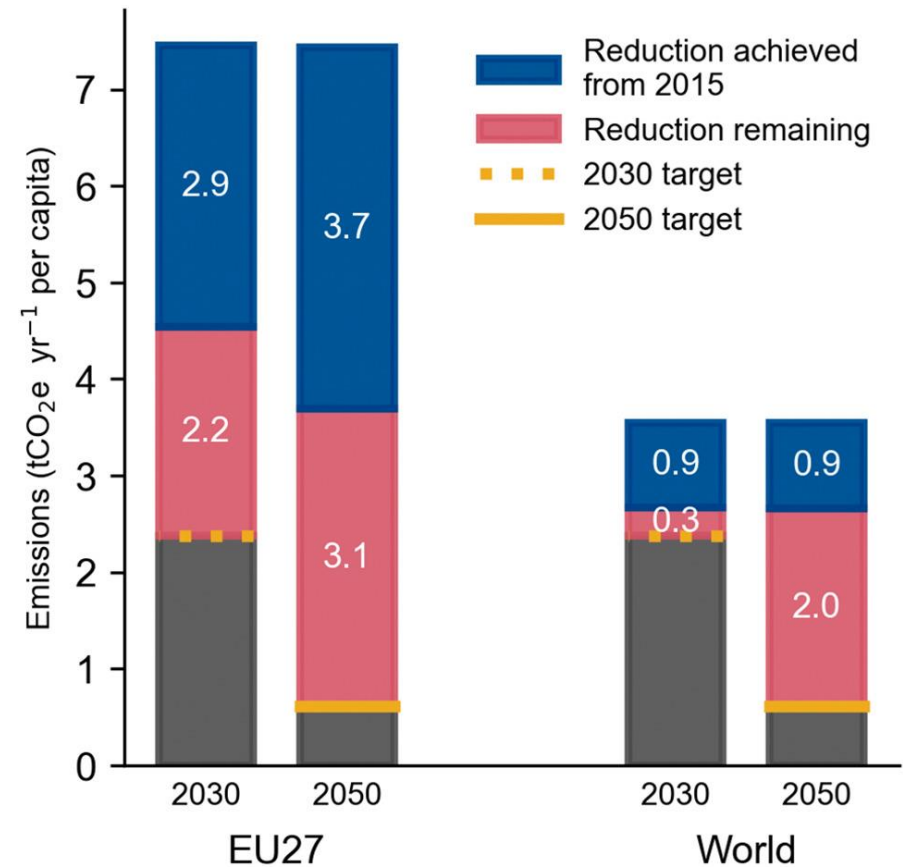
8 April 2025



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LIFESTYLES AS CLIMATE CHANGE MITIGATION

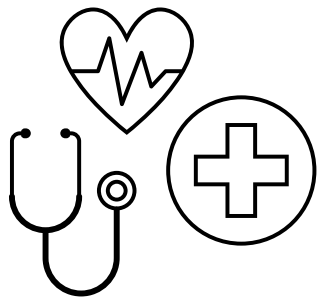
- Meeting the climate target requires lifestyle changes.
- Changes on the supply side alone are insufficient.
- This especially applies to high-income countries like in the EU.



Source: Cap et al. (2024)

ONE HEALTH

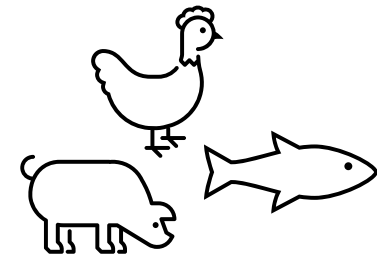
Human health



Ecosystem health



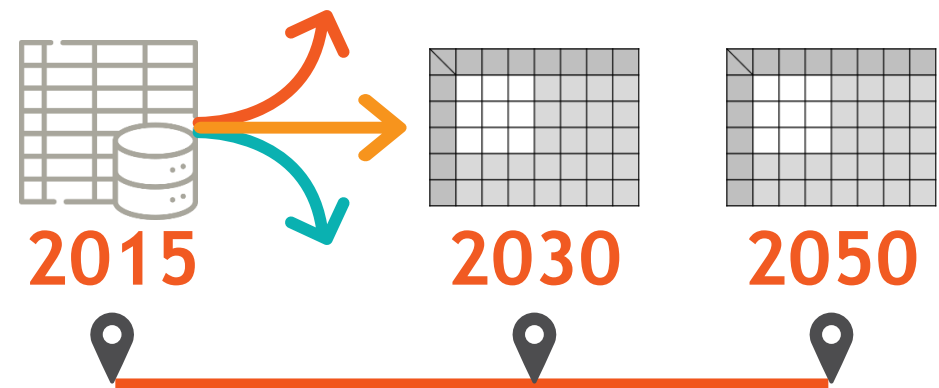
Animal health



→ Increased motivation for lifestyle change and related policy change?

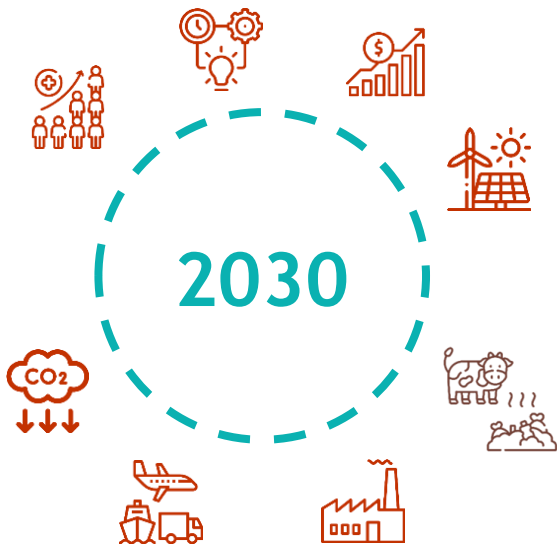
METHODS - 1.5°C LIFESTYLES

- 47 consumption changes modelled and combined into portfolios for five EU countries
- Input-output-analysis-based approach
- Prospective IO tables assuming sustainable development (SSP1-RCP1.9) without household change

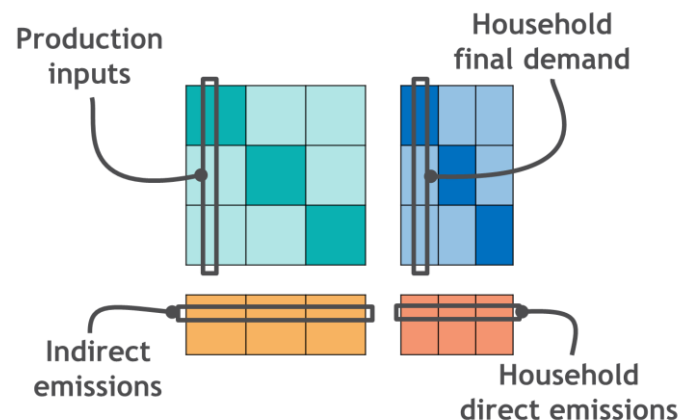


METHODS - 1.5°C LIFESTYLES

1) Projection of IO table

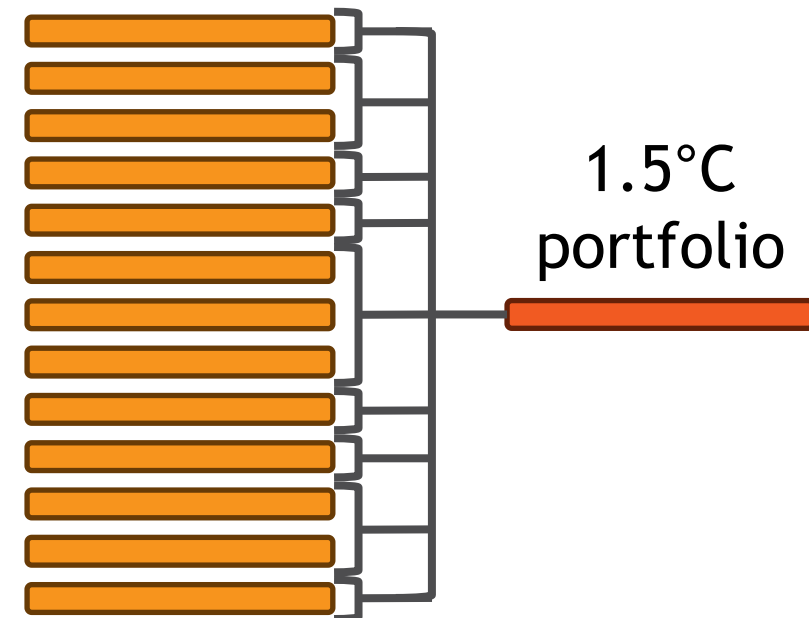


2) Perturbation of IO table



3) Construction of portfolios and determination of adoption rates

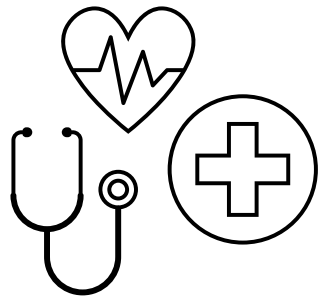
Lifestyle change options



METHODS - BENEFITS BEYOND CLIMATE

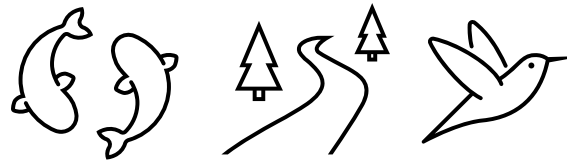
Greenhouse gas emissions

Heat and cold stress



Disability-adjusted life years (DALY)

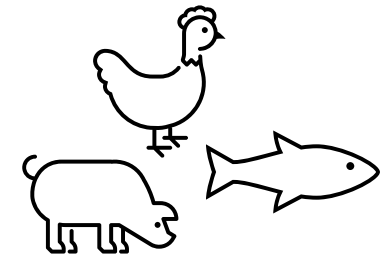
Freshwater fish species loss



Potentially disappeared fraction (PDF)

Consumption changes

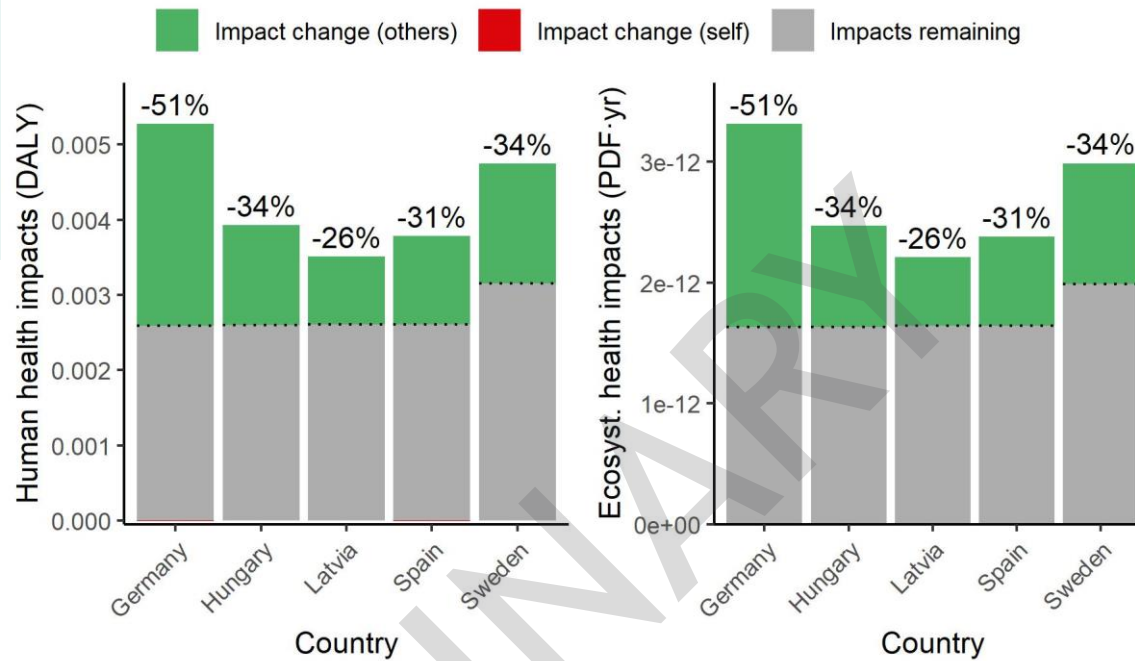
Production changes



Number of (morally adjust.) animals

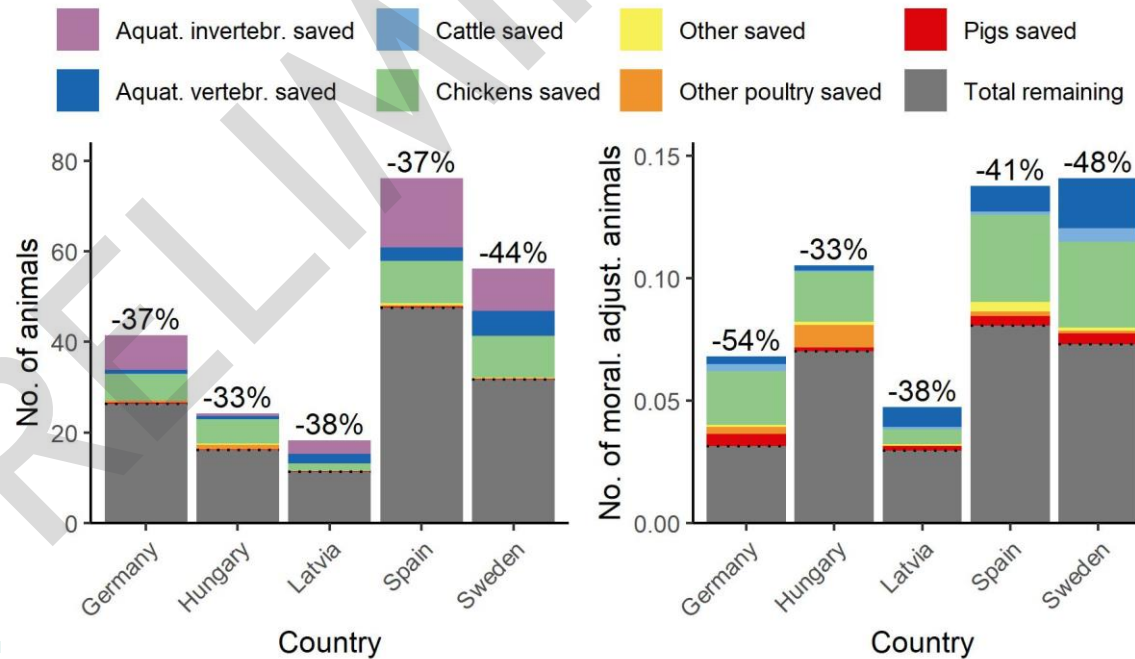
RESULTS

Human health



Ecosystem health

Animal health



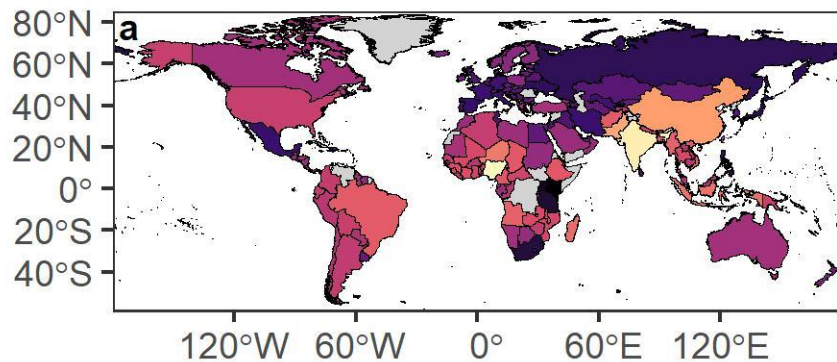
Animal health (moral. adjust.)



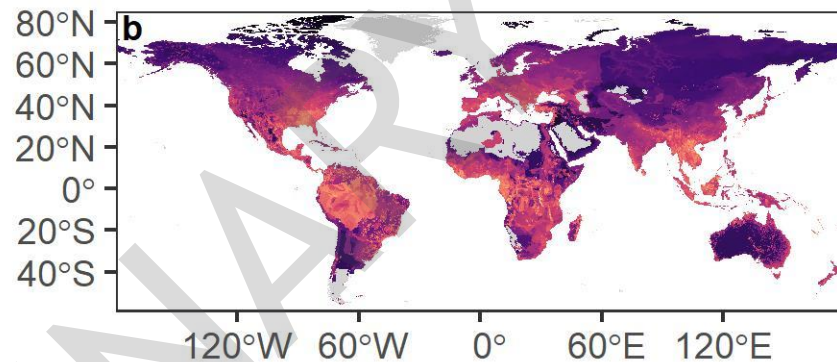
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RESULTS

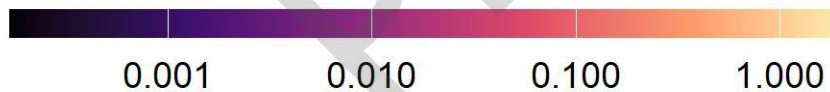
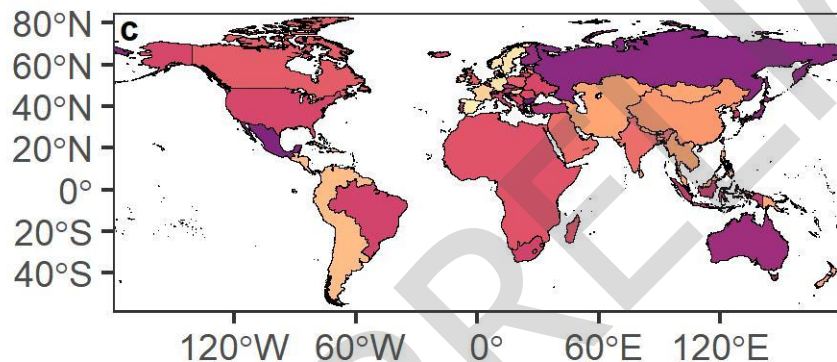
Human health



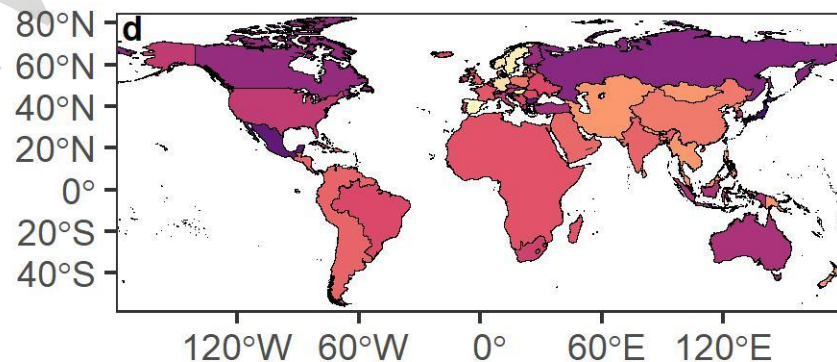
Ecosyst. health



Animal health

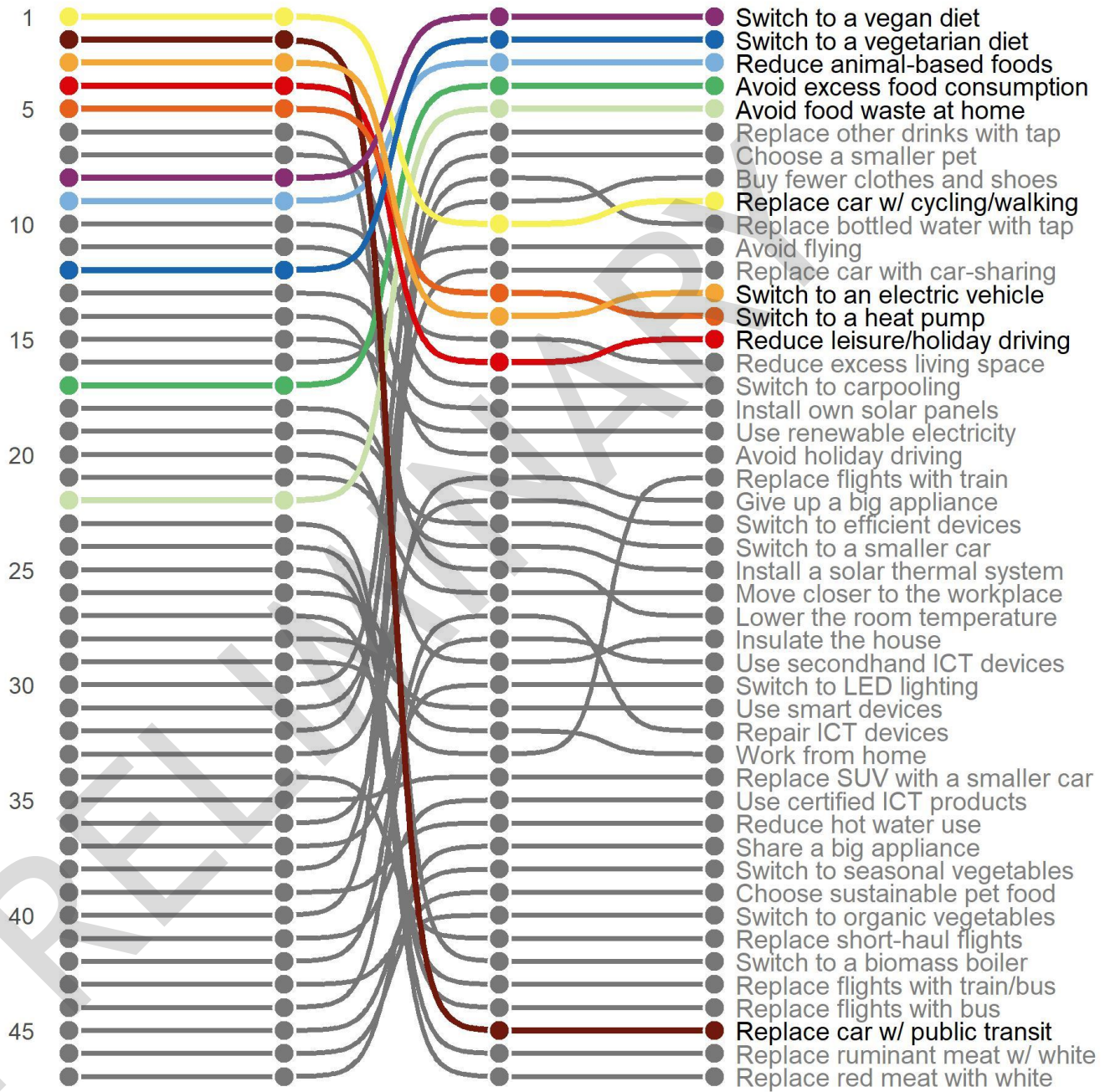


Animal health (moral. adjust.)



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RESULTS



Human health Ecosystem health Animal health Moral. adj. animal health



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DISCUSSION

Limitations

- **Human health:** Further links to climate change, e.g. through malaria and malnutrition
- **Ecosystem health:** Terrestrial and marine ecosystems also affected
- **Animal health:** Husbandry conditions and animals' life span not accounted for

TAKE-AWAYS

- 1.5°C lifestyles yield substantial co-benefits for One Health.
- Germany yields the largest co-benefits for human and ecosystem health, while Spain and Sweden yield the largest co-benefits for animals.
- Change with the largest co-benefits for human and ecosystem health: Replacing one's car with cycling and walking.
- Change with the largest co-benefits for animals: Switching to a vegan diet.

KEY REFERENCES

Cap, S., de Koning, A., Tukker, A., & Scherer, L. (2024). **(In)Sufficiency of industrial decarbonization** to reduce household carbon footprints to 1.5°C-compatible levels. *Sustainable Production and Consumption*, 45, 216-227.

Cap, S., Li, S., de Koning, A., Karjalainen, A., Lettenmeier, M., Coscieme, L., Tukker, A., & Scherer, L. (under review). Carbon footprint reduction potential of **consumption changes** in five European countries in 2015, 2030, and 2050.

Cap, S., Kreinin, H., Richter, J. L., Vadovics, E., Tukker, A., & Scherer, L. (submitted). **Feasibility of meeting the 1.5°C target with lifestyle changes** in the EU in 2030 and 2050.

De Visser, S., Scherer, L., Huijbregts, M., & Barbarossa, V. (2023). Characterization factors for the **impact of climate change on freshwater fish species**. *Ecological Indicators*, 150, 110238.

Scherer, L., Tomasik, B., Rueda, O., and Pfister, S. (2018): Framework for integrating **animal welfare** into life cycle sustainability assessment. *The International Journal of Life Cycle Assessment*, 1-15.



RECOMMENDED SESSION

Starting today at 15:30

S45 - EU 1.5° Lifestyles: Strategies and pathways to overcoming barriers to a transformation of lifestyles

Including Stephanie Cap

(STORA SALEN)



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THANK YOU!



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