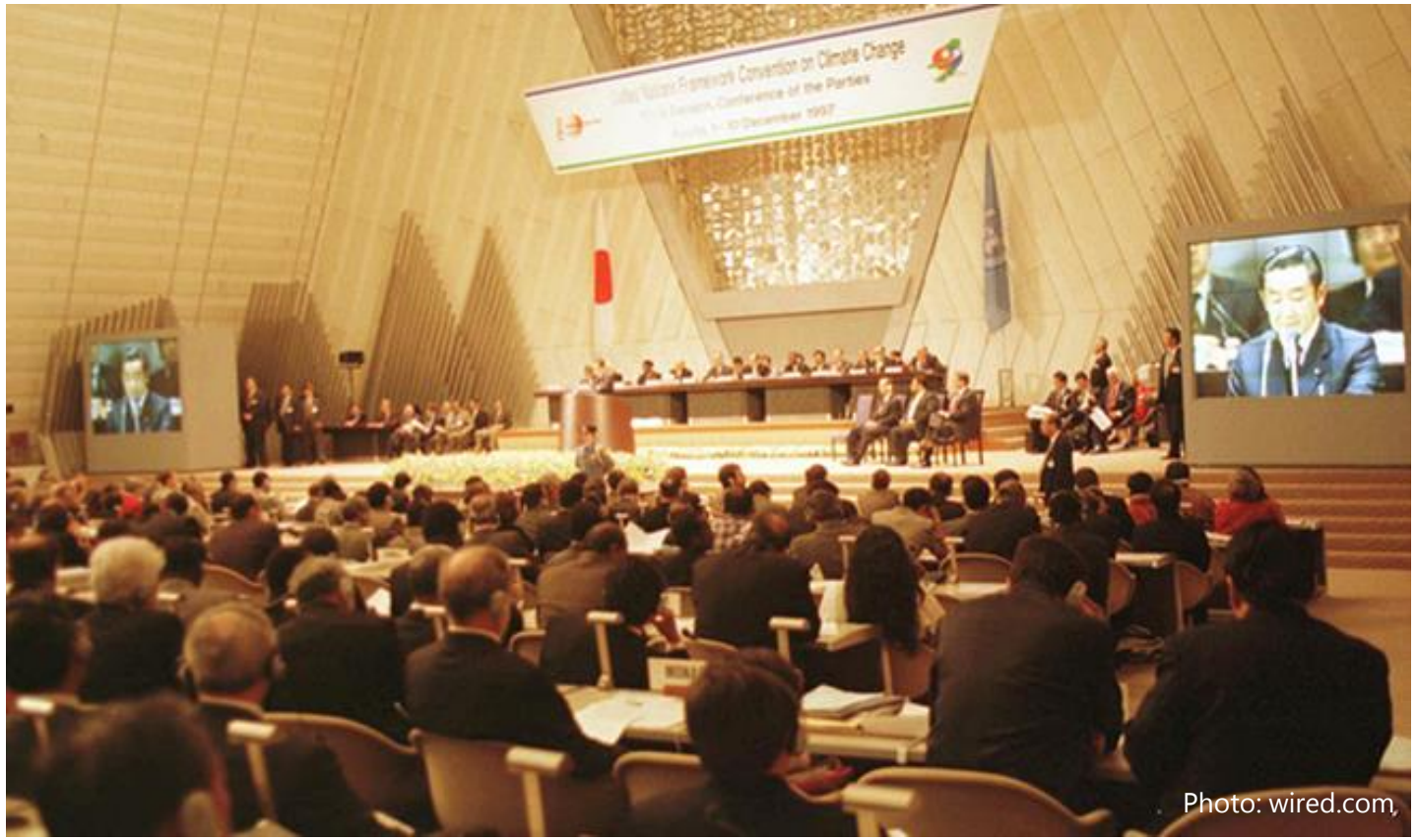
Biochar carbon removal – concerns on credits

Inge-Merete Hougaard
Department of Anthropology, University of Copenhagen

Oulu University of Applied Sciences
16 October 2024

UNIVERSITY OF COPENHAGEN

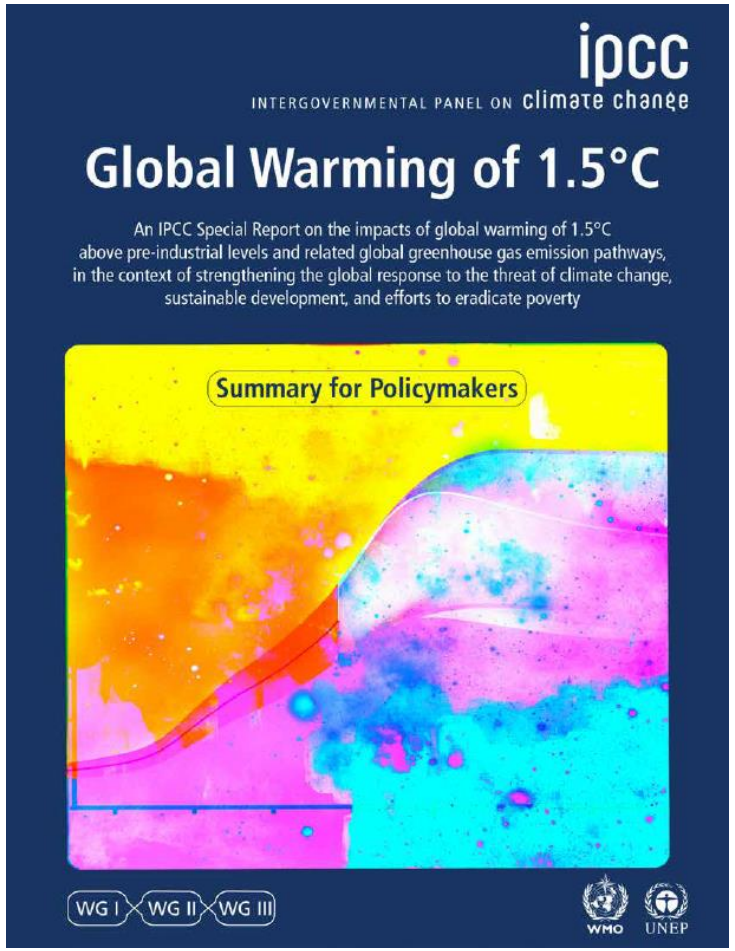
Carbon credits are not new



- Market-based approaches
- Sinks and sources
- Global carbon budget
- Cost-efficiency

Carton et al. 2020: Negative emissions and the long history

Carbon credits are not new



Carton et al. 2020: Negative emissions and the long history

Biochar

Example: Biochar in Denmark

2020 Climate Programme

- Biochar: 2 Mt CO_2e in 2030

Reiterated in 2021, 2022, 2023

2024 Climate Programme

- Biochar: 300,000 t CO_2e in 2030

Concerns regarding high reliance on biochar

- Reductions vs. removals
  - Need repetition every year
- Massive upscale
  - From zero to ? hectares
  - Apply every year?
- Focus on pyrolysis technology
  - Farmer interest? Expectations?
- Limits to biomass
- Concrete application methods
- Unclear distribution of economic and climate benefits

→ Risk delaying implementation

> Government Strategy and Work Programme (October 2024) seeks to address issues of regulation and environmental impacts but does not clearly address above issues.

Hougaard 2024a: Enacting biochar
Hougaard 2024b: The role of biochar

Concerns regarding biochar carbon credits (I)

- Five main critiques
  - Baseline and MRV
    - When/how to measure SOC
  - Leakage
    - Emissions continue elsewhere
  - Temporality
    - Delay in effect
  - Permanence/reversibility
    - Not same GHG cycle, equivalence?
  - Additionality
    - CO_2-tax (almost) already an incentive

Carton et al. 2020: Negative emissions and the long history
Carton et al. 2021: Undoing equivalence
Christiansen 2024: Religitimising the VCM
Hougaard 2024b: The role of biochar

Concerns regarding biochar carbon credits (II)

Fundamental critiques

- Offsetting is mitigation deterrence
- Datafication and accounting
- Double claiming

Carton et al. 2020: Negative emissions and the long history
Hougaard 2024b: The role of biochar
Hougaard (forth.): Configuring the farmer
Lovell 2015: The making of low carbon economies
Stanley 2024: Carbon "known not grown"

Recommendations

Biochar is an interesting farming practice that can have both environmental and production benefits, but…

- There are too many uncertainties, and carbon removal from biochar should not be counted towards short-term goals.
- When used, removals should be maintained within the agricultural sector.
- Carbon credits should be avoided as they risk leading to double claiming and make mitigation efforts seem larger than they are.
- Focus should be on reducing emissions.

Hougaard 2024b: The role of biochar

References

- Carton, W., Asiyanbi, A., Beck, S., Buck, H. J., & Lund, J. F. (2020). Negative emissions and the long history of carbon removal. *Wiley Interdisciplinary Reviews: Climate Change*, *11*(6), 1–25. https://doi.org/10.1002/wcc.671
- Carton, W., Lund, J. F., & Dooley, K. (2021). Undoing Equivalence: Rethinking Carbon Accounting for Just Carbon Removal. *Frontiers in Climate*, 3, 664130. https://doi.org/10.3389/fclim.2021.664130
- Christiansen, K. L. (2024). Relegitimising the voluntary carbon market: Visions of digital monitoring, reporting and verification. *Environment and Planning A: Economy and Space*, 0308518X241278937. https://doi.org/10.1177/0308518X241278937
- Hougaard, I.-M. (2024a). Enacting biochar as a climate solution in Denmark. *Environmental Science & Policy*, 152, 103651. https://doi.org/10.1016/j.envsci.2023.103651
- Hougaard, I.-M. (2024b). *The role of biochar in Danish climate policy [Biokuls rolle i dansk klimapolitik].* Lund University Centre for Sustainability Studies. https://www.lucsus.lu.se/article/use-biochar-method-remove-carbon-can-lead-mitigation-deterrence
- Hougaard, I.-M. (forthc.) 'Configuring the farmer: Imaginaries of carbon accounting and biochar practices in Danish agriculture', in S. Dalsgaard et al. (eds) *The Cultural Complexity of Carbon: Ethnographies of Green Transformations in Contemporary Society*. Routledge.
- Lovell, H. (2015). *The making of low carbon economies*. Routledge, Taylor & Francis Group.
- Stanley, T. (2024) 'Carbon "known not grown": Reforesting Scotland, advanced measurement technologies, and a new frontier of mitigation deterrence', *Environmental Science & Policy*, 151, p. 103636. https://doi.org/10.1016/j.envsci.2023.103636.