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Moral Conflicts of a ‘Green Pathway’ to limit Global Warming “to well below 2 °C” regarding the Human Right to Adequate Food

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Introduction

- 101 out of 116 scenarios consistent with limiting global warming with a likely chance of > 66% “to well below 2 °C” rely on negative emissions (IPCC, 2014)
  - these 116 scenarios together form the representative concentration pathway 2.6 (RCP2.6) (ibid.)
- since 2005, global emissions had not been close to those of RCP2.6 (UNEP, 2018)

→ stronger mitigation efforts are necessary than already assumed in RCP2.6 (Sanderson, 2017)

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A ‘Green Pathway’ to limit Global Warming

- manifold anthropogenic activities have altered various ecological systems of the Earth, resulting inter alia in
  - biodiversity loss (United Nations, 1992)
  - climate change (IPCC, 2014)
  - ocean acidification and ocean warming (Böhm & Ott, 2019)

→ a ‘Green Pathway’ is intended to sustainably mitigate global warming and thus adverse consequences for life on Earth

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A ‘Green Pathway’ to limit Global Warming

- several tNETs rely on natural processes and could therefore be designated as ‘green’ forms of geoengineering, e.g.
  - Bioenergy with Carbon Capture and Storage (BECCS)
  - Afforestation/Reforestation (AR)
  - Enhanced Weathering (EW)
  - Natural Climate Solutions (NCS)

→ even those ‘green’ forms of geoengineering might have undesirable side-effects

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The Human Right to Adequate Food

- ‘The right to an adequate standard of living’ and within this ‘the right to adequate food’ (United Nations, 1966)
  - should guarantee “the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals” (CESCR, 1999: paragraph 8)
  - not only for present generations but for future generations, too (CESCR, 1999)

→ we (as the present generation) are thus obliged to maintain conditions that enable future generations to achieve food security

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Moral Conflicts of a 'Green Pathway'

- about 821 million people were undernourished in 2017 (FAO et al., 2018)
  - there has been enough food to fulfil the human right to adequate food (ibid.)
    - a changing climate is likely to aggravate this situation in the future (ibid.)
- global population is expected to increase substantially until 2050 and until 2100 (UN DESA, 2017)

→ we should therefore mitigate climate change to enable future generations to fulfil the human right to adequate food

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Moral Conflicts of a ‘Green Pathway’

- if BECCS /AR are used to mitigate climate change, huge areas, predominantly in Africa and Asia, need to be converted to biomass plantations/forests (Smith et al., 2016)
  - even if yields increase substantially (Kato and Yamagata, 2014)
- such a large-scale conversion would come at the cost of agricultural areas located predominantly in tropical regions (Boysen et al., 2017)

→ we should thus not use BECCS/AR to mitigate climate change

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Moral Conflicts of a ‘Green Pathway’

- if EW is used, no agricultural areas need to be converted (Hartmann et al., 2013)
  - beneficial side-effects of EW
    - extra nutrients would be added to the soils that would promote agricultural production (Smith et al., 2016)
    - ocean acidification would be reduced (Taylor et al., 2015)

→ the large-scale use of EW would require considerable amounts of energy to grind suitable rocks into small particles (Smith et al., 2016)

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Conclusions

- we need to start mitigation immediately!
- none of the regarded methods alone should be used to mitigate climate change
  → a mix of BECCS, AR and EW in combination with NCS might be a feasible option
- moreover, we should
  → stop deforestation/forest degradation particularly of tropical forests
  → end food-waste
  → close yield-gaps
  → change food patterns
  → put a price on carbon emissions

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Thank you very much for attention!

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