



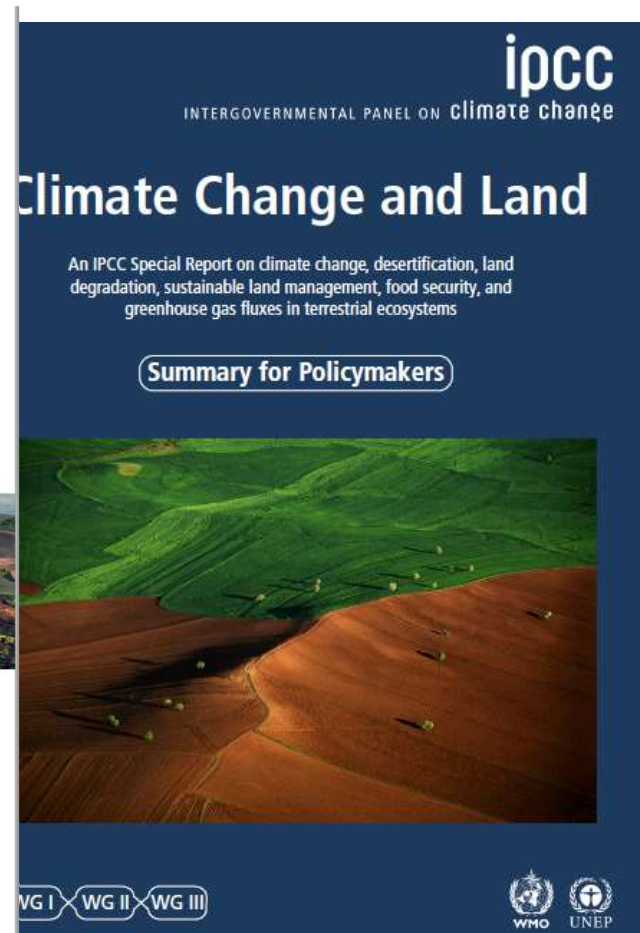
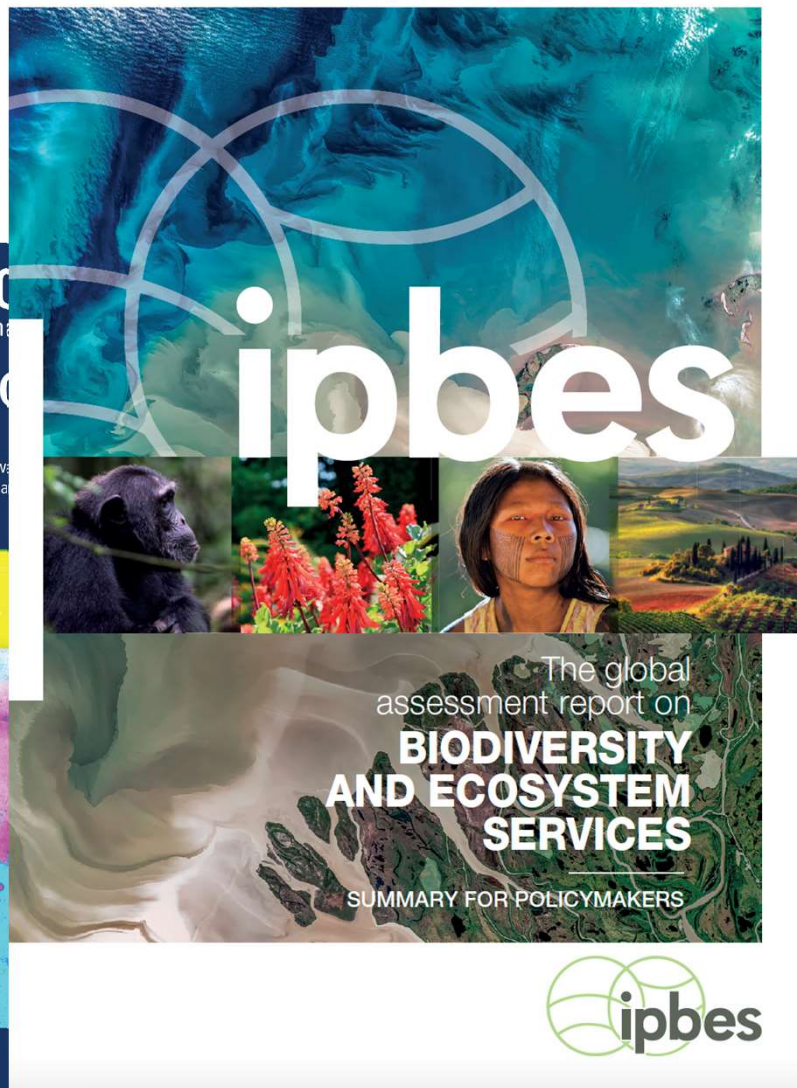
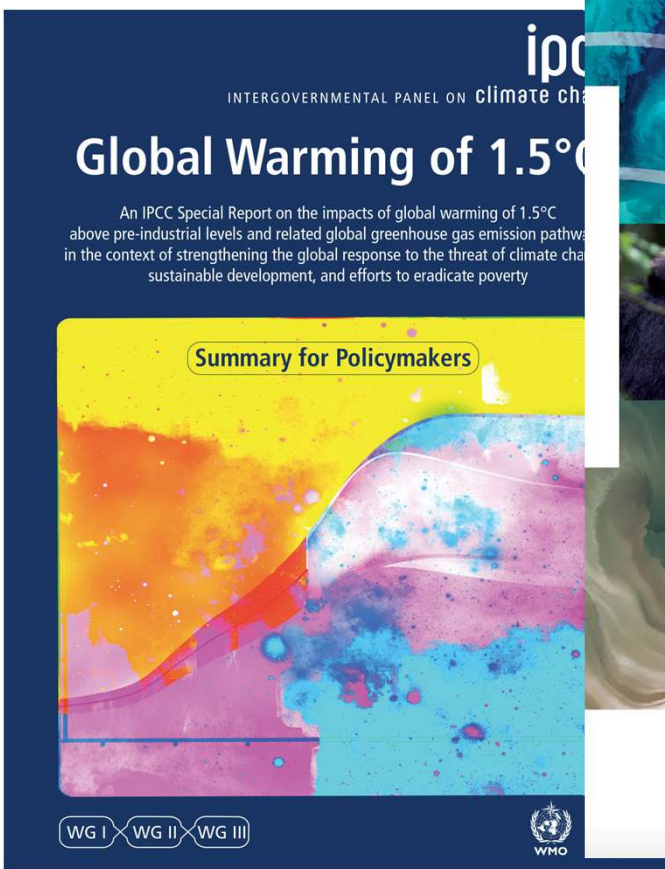
THE UNIVERSITY OF
MELBOURNE

Global potentials for ecosystem restoration

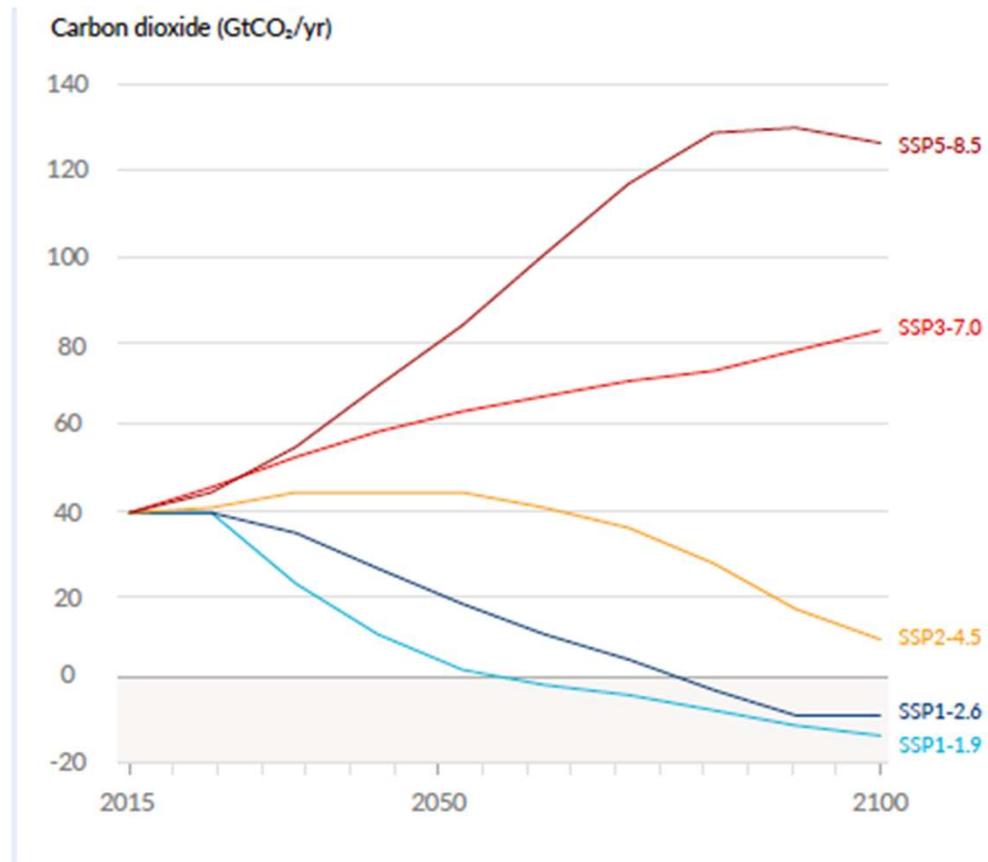
SPIPA seminar, November 9th, 2021.

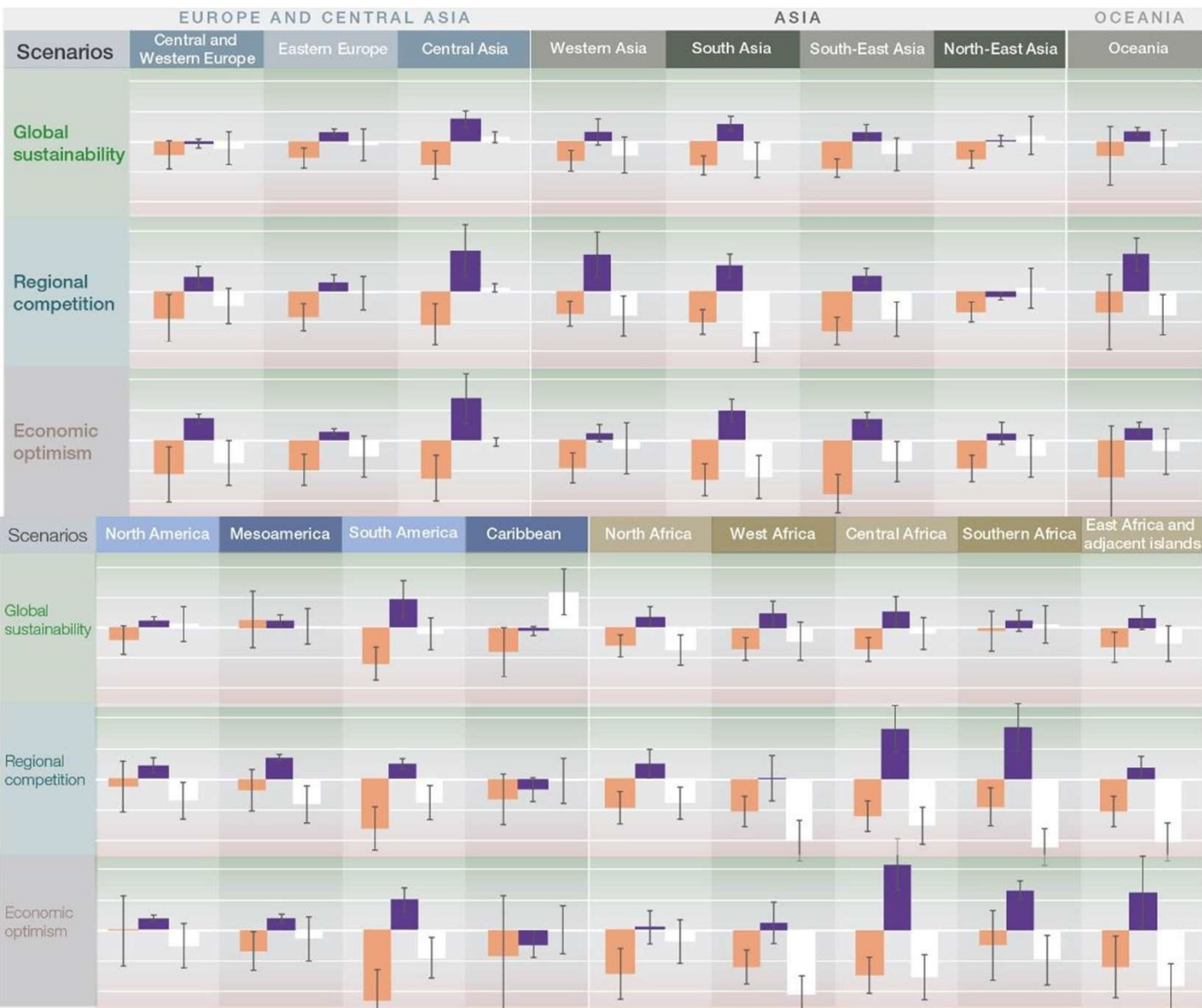
Dr Kate Dooley
School of Geography, Earth and Atmospheric Sciences



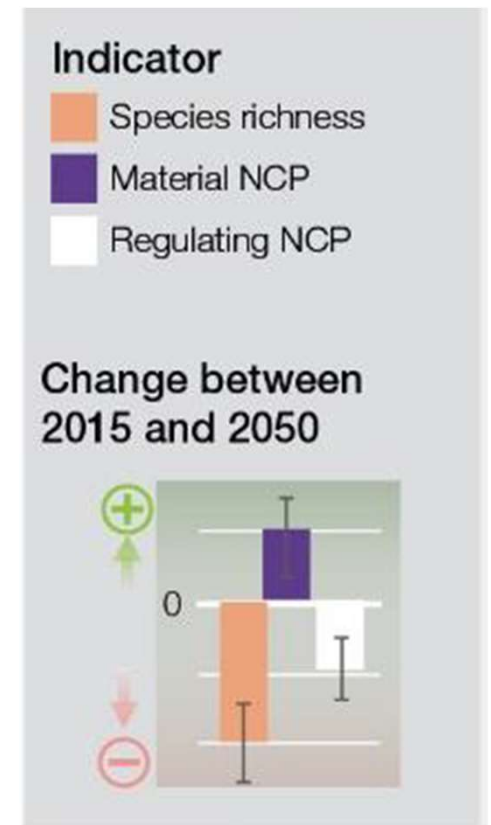


Global warming to reach 1.5C in 'best case' scenario



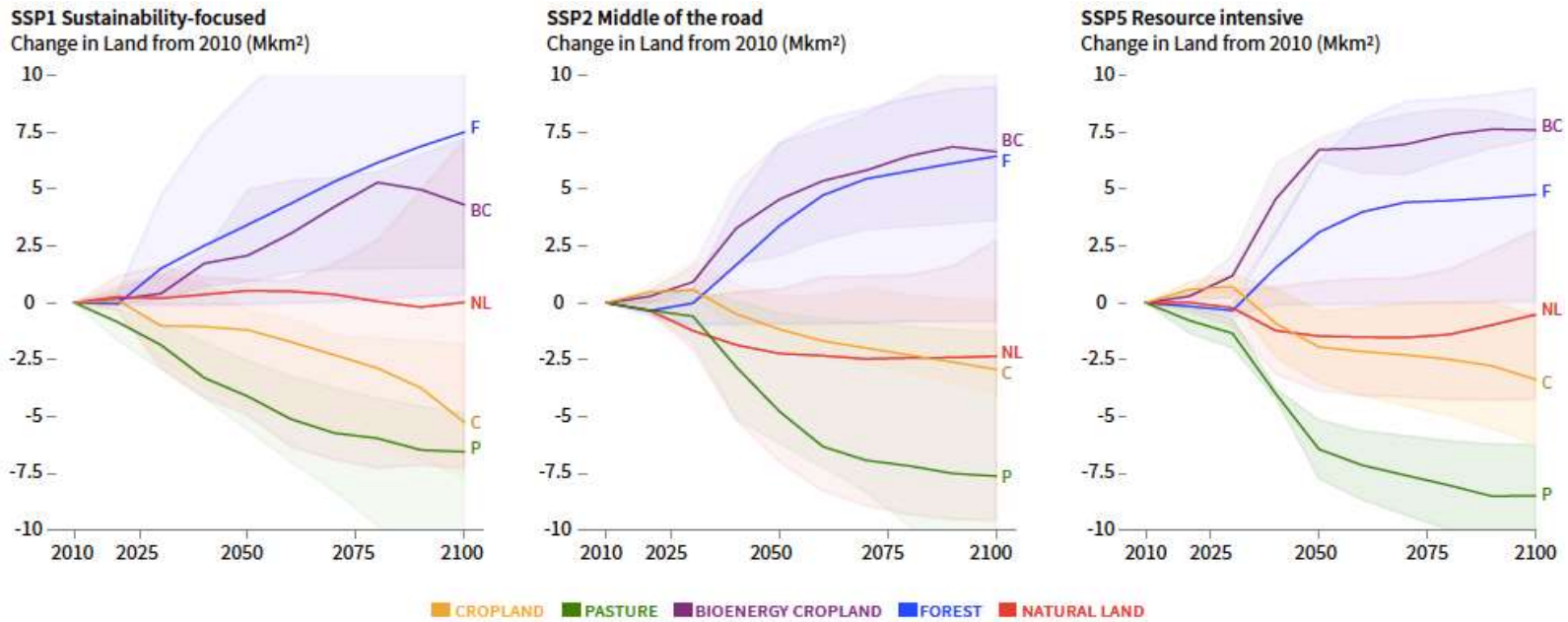


Biodiversity impacts from climate and land-use change under SSPs 1, 3, 5
NCP=Natures Contribution to People



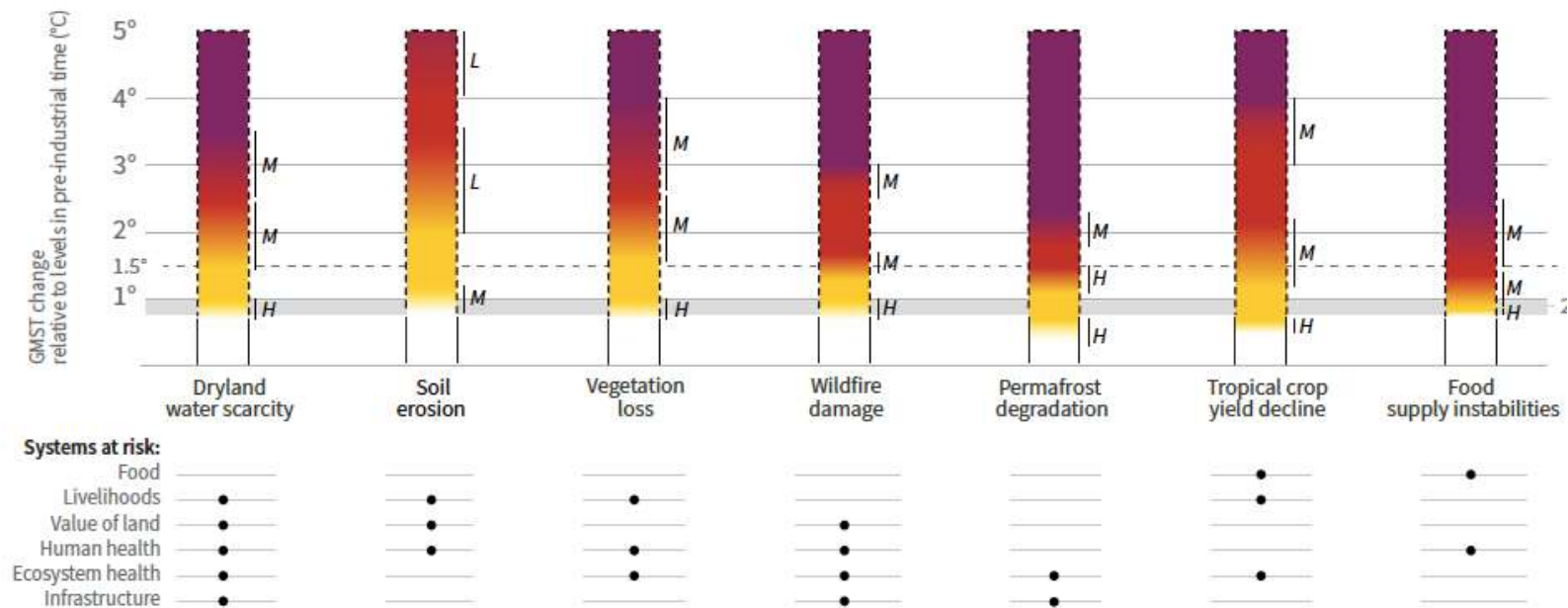
IPBES Global Assessment Report, Figure SPM 8

Climate mitigation responses and land-use change



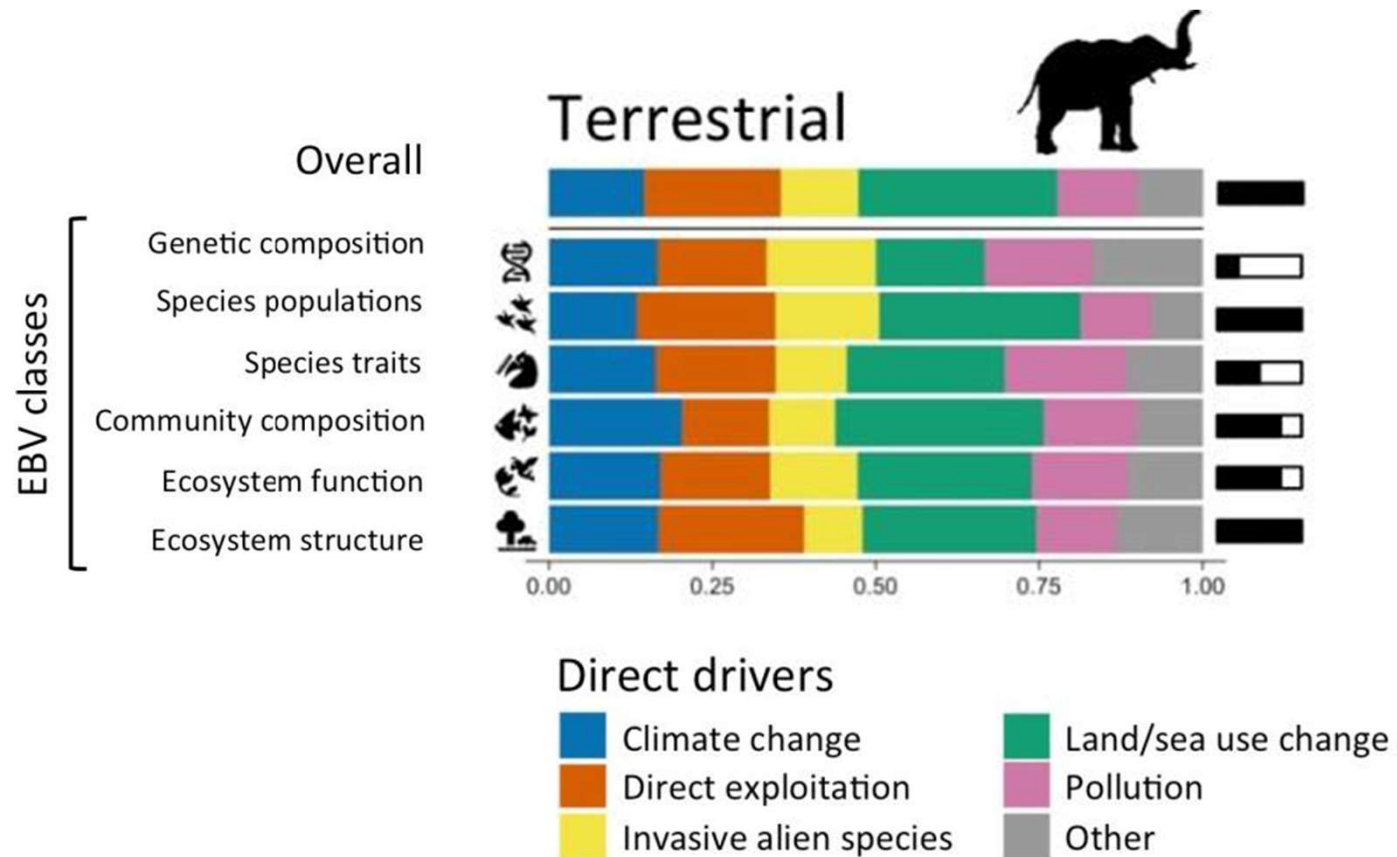
IPCC SRCCL Figure SPM 4

Risks to humans and ecosystems from changes in land-based processes as a result of climate change and climate mitigation

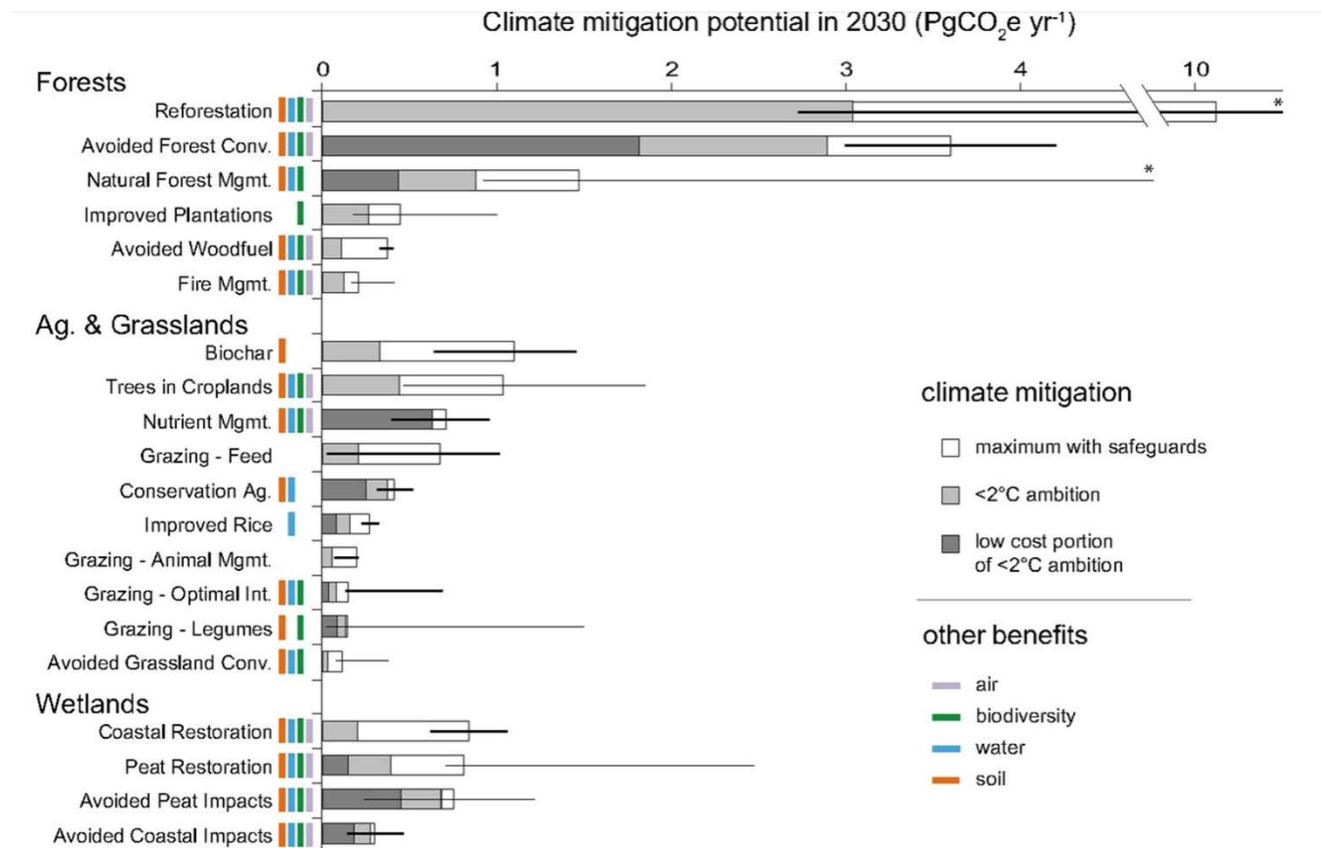


IPCC SRCCL Figure SPM 2a

Drivers to biodiversity loss



Nature based solutions – 30% of global mitigation?



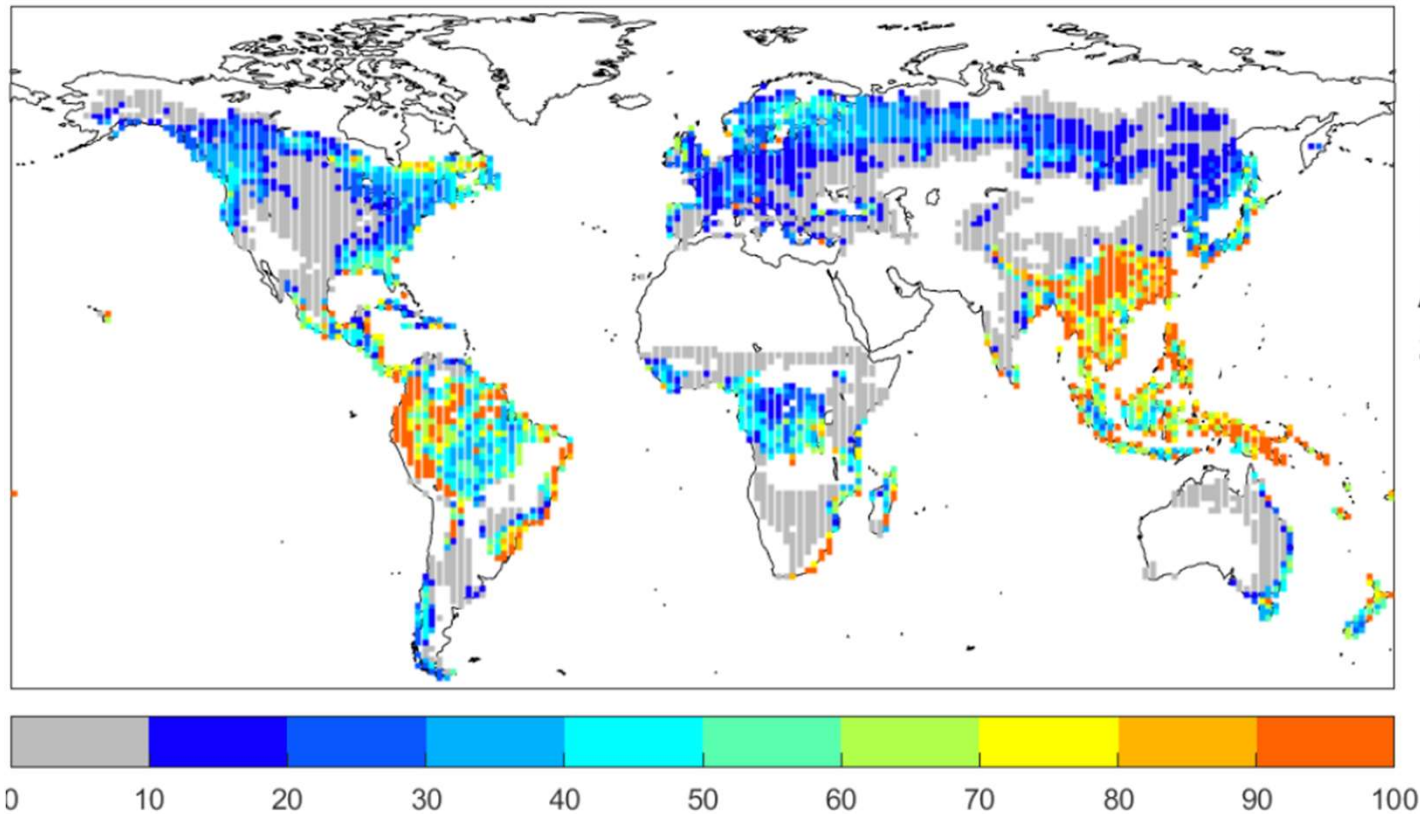
Griscom et al., 2017 Natural Climate Solutions. *PNAS*.

Land-based mitigation measures



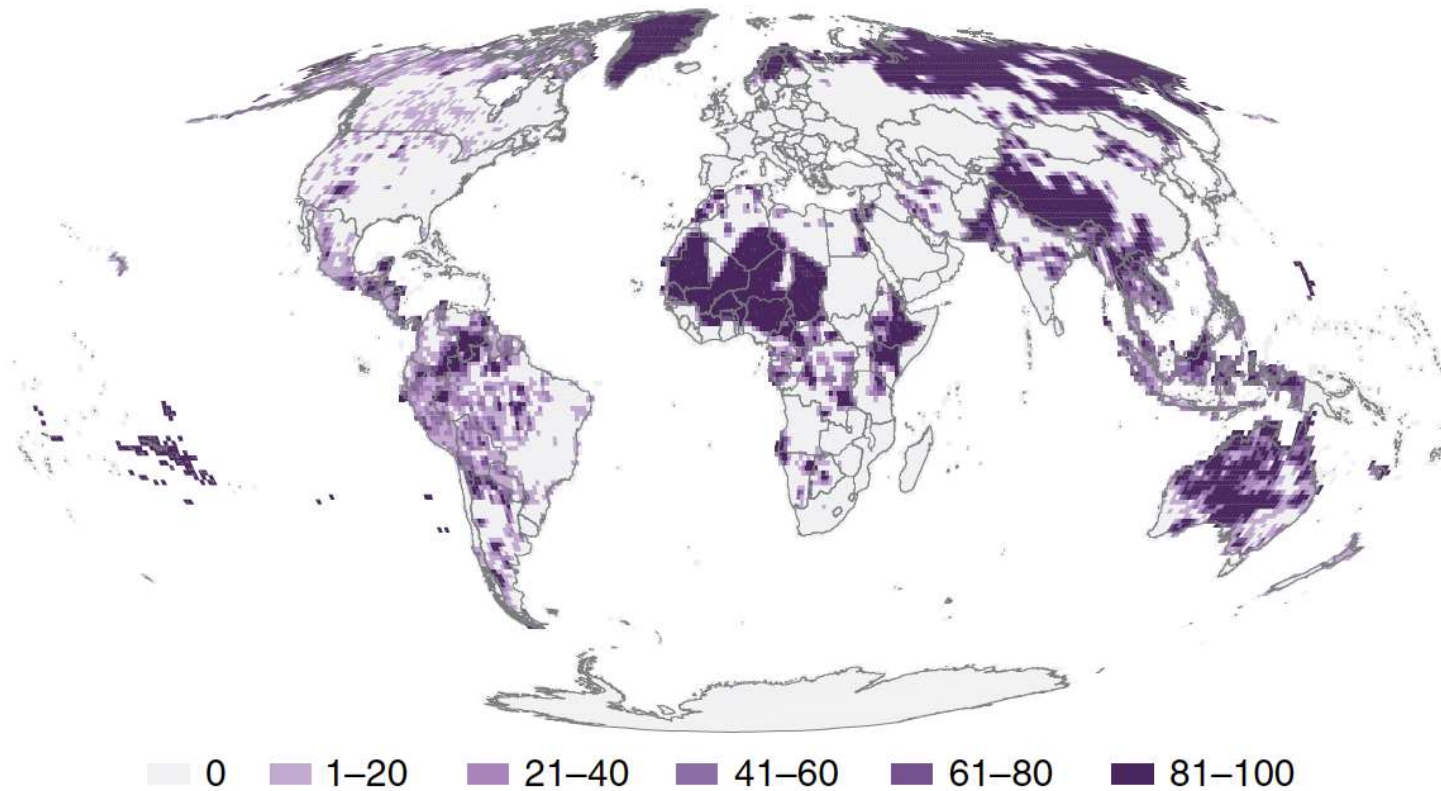
Roe et al (2021) Land-based measures to mitigate climate change: Potential and feasibility by country. *GCB*. DOI: 10.1111/gcb.15873

Ecosystem restoration



Forest Restoration (541 Mha)
Reforestation (344 Mha)
Reduced Harvest (1047 Mha)
Agroforestry (849 Mha)
Silvopasture (478 Mha)

Global map of lands managed by indigenous peoples

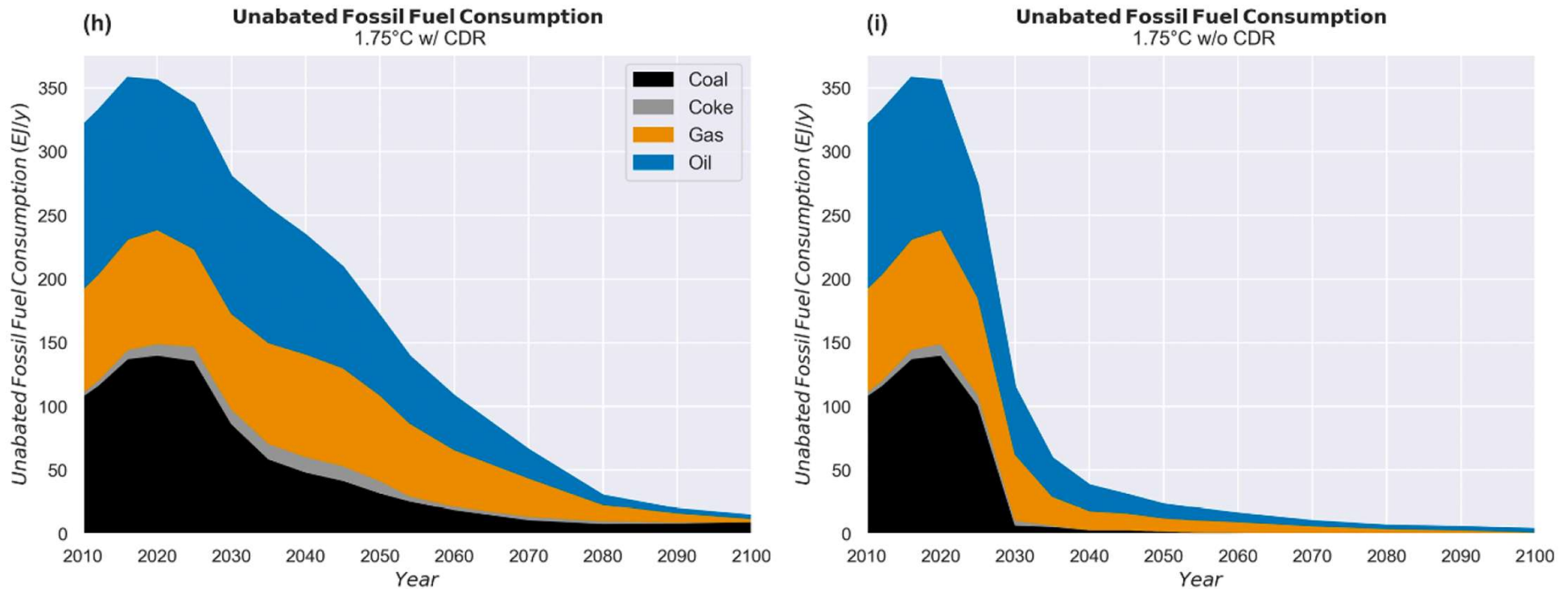


Source: Garnet et al 2018

<https://doi.org/10.1038/s41893-018-0100-6>

Conclusions

Can we consider climate mitigation options that phase-out fossil fuel emissions instead of relying on nature as an offset?



Grant et al 2021 *Environ. Res. Lett.* 16 064099