

Carbon farming potential and practices

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24 March, 2022

Communication on Sustainable Carbon Cycles

“Carbon farming can be defined as a green business model that rewards land managers for taking up improved land management practices, resulting in the increase of **carbon sequestration in living biomass, dead organic matter and soils by enhancing carbon capture and/or reducing the release of carbon to the atmosphere**, in respect of ecological principles favourable to biodiversity and the natural capital overall.”

Options, mitigation potential, and co-benefits

Assessment criterion	Managing peatlands
Key practices	Maintenance / rewetting /management, paludiculture
Total EU mitigation potential (Mt CO ₂ -e/yr)	51- 54 Mt CO ₂ -e/yr
Per hectare mitigation potential (t CO ₂ -e/ha/yr)	3.5 - 29
Mitigation mechanism	Avoided emissions
Co-benefits for farmers	Paludiculture as a new business model
Societal co-benefits	Biodiversity, flood regulation, water quality

Options, mitigation potential, and co-benefits

Assessment criterion	Managing peatlands	Agroforestry
Key practices	Maintenance / rewetting /management, paludiculture	Creation, restoration, and management of woody features in the landscape (silvo-pastoral, silvo-arable, hedges, tree rows)
Total EU mitigation potential (Mt CO₂-e/yr)	51- 54 Mt CO ₂ -e/yr	8 – 235 Mt CO ₂ -e/yr
Per hectare mitigation potential (t CO₂-e/ha/yr)	3.5 - 29	0.03 – 27
Mitigation mechanism	Avoided emissions	Removal (and emissions?)
Co-benefits for farmers	Paludiculture as a new business model	Diversification of outputs, protection against single crop failure
Societal co-benefits	Biodiversity, flood regulation, water quality	Improved water retention, microclimate, soil health, biodiversity

Options, mitigation potential, and co-benefits

Assessment criterion	Managing peatlands	Agroforestry	Maintain and enhance SOC on mineral soils
Key practices	Maintenance / rewetting /management, paludiculture	Creation, restoration, and management of woody features in the landscape (silvo-pastoral, silvo-arable, hedges, tree rows)	cover cropping, crop rotations, legumes, deep rooting crops, improved grassland management, conversion of arable to grassland
Total EU mitigation potential (Mt CO₂-e/yr)	51- 54 Mt CO ₂ -e/yr	8 – 235 Mt CO ₂ -e/yr	9 – 70 Mt CO ₂ -e/yr
Per hectare mitigation potential (t CO₂-e/ha/yr)	3.5 - 29	0.03 – 27	0.5-7
Mitigation mechanism	Avoided emissions	Removal (and emissions?)	Removal and avoided emissions
Co-benefits for farmers	Paludiculture as a new business model	Diversification of outputs, protection against single crop failure	Improved water holding capacity and workability of soils, yield stability, reduced fertiliser costs
Societal co-benefits	Biodiversity, flood regulation, water quality	Improved water retention, microclimate, soil health, biodiversity	Soil health, drought resilience, reduced risk of soil erosion

Challenges

- **Uncertainties around mitigation potentials:** What to focus on where?
- **Non-permanence:** Carbon sequestered and stored in soils and biomass can be released back to the atmosphere
- **Total mitigation potential, not just C matters**
 - N₂O emissions associated with SOC maintenance/ increase → what is the total climate impact?
 - CH₄ emissions & decrease in production for peatland rewetting → how best to manage?
 - Additionality of applying compost / manure vs circularity
 - Conflicts with mitigation practices (nitrification inhibitors, low-emission slurry application)
- **Risks of biochar, municipal compost, no agroforestry on peatlands**
- **Monitoring, reporting and verification:** Accurate quantification of real, additional mitigation from carbon farming is difficult and costly.



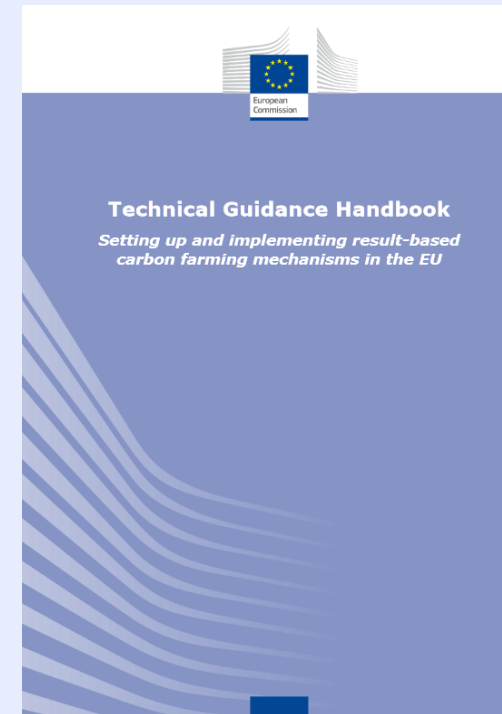
Concluding thoughts

1. **Significant mitigation potential for carbon farming**
2. **Uncertainties:** Importance of national & regional integrated assessments of carbon farming potential, synergies and trade-offs
3. **MRV needs to focus on total climate impact**
4. **Resilience strengthens permanence**
5. **Safeguards needed**
6. **One part of broader transition to a sustainable agri-food system**

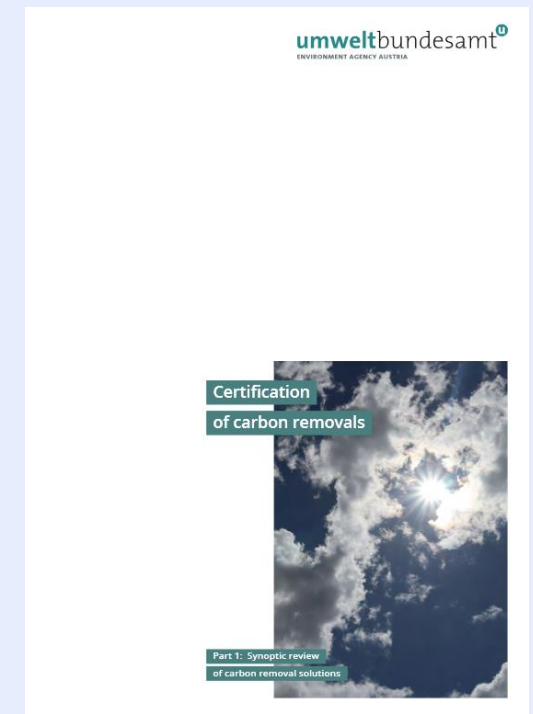
Publications & projects



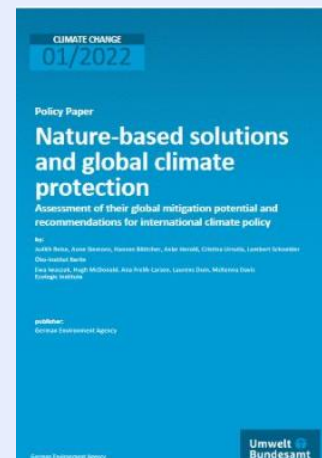
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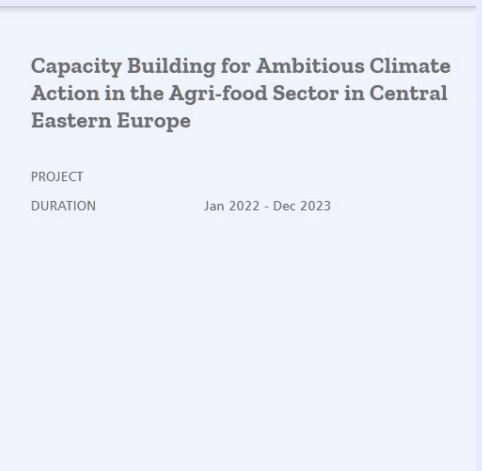
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Thank you.

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