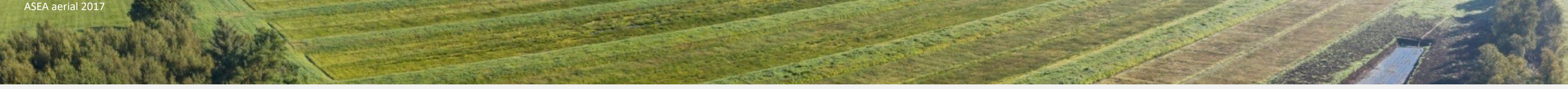

Climate protection through peat moss paludiculture

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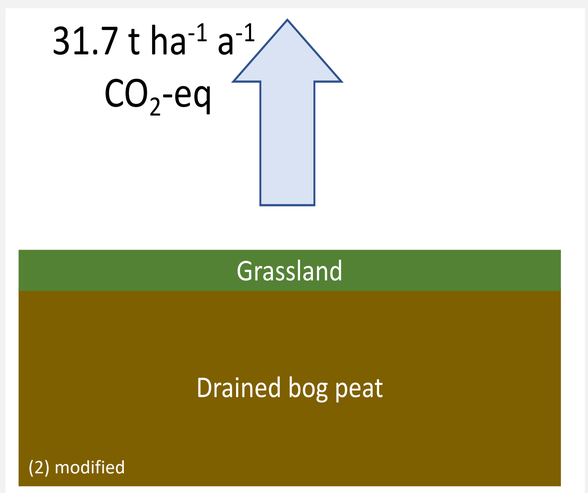
ABSTRACT

- Peatlands are terrestrial wetlands that, in their natural undisturbed state, act as carbon sinks by storing carbon in their peat
- Peat extraction for horticulture is one main reason for peatland destruction, which lead to greenhouse gas (GHG) emissions
- Peat moss (*Sphagnum*) paludiculture could be solution for sustainable renewable growing media in horticulture
- High potential for climate protection through GHG savings
- Paludiculture site can contribute to nature conservation and work as surrogate habitat for rare bog species

Peat moss = Climate moss!

CHALLENGE - PEATLANDS AND GREENHOUSE GASES (GHG)

Drained peatland

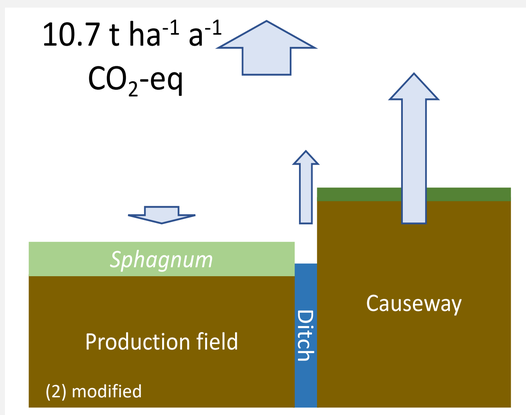


- Terrestrial **wetland ecosystems**
- **Store carbo**n within peat
- **Release carbon as GHG** when drained (6)

CO_2 SAVINGS POTENTIAL IN GERMANY

- If all 90,000 ha drained bog grassland in NW Germany (main bog distribution) were used for *Sphagnum* paludiculture (3)

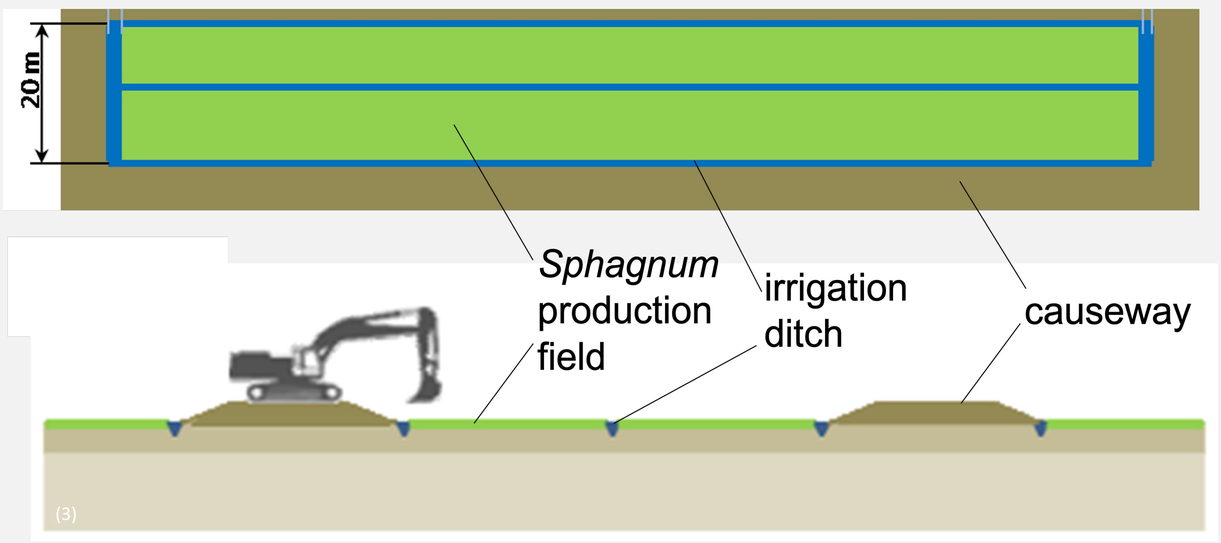
Current paludiculture



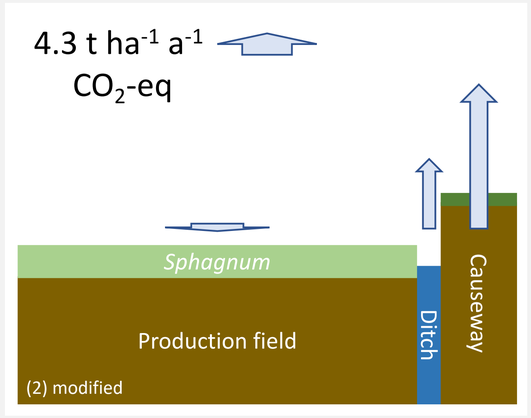
1,8 Mio. t

CO_2 equivalent per year

POSSIBLE SOLUTION - PEAT MOSS PALUDICULTURE

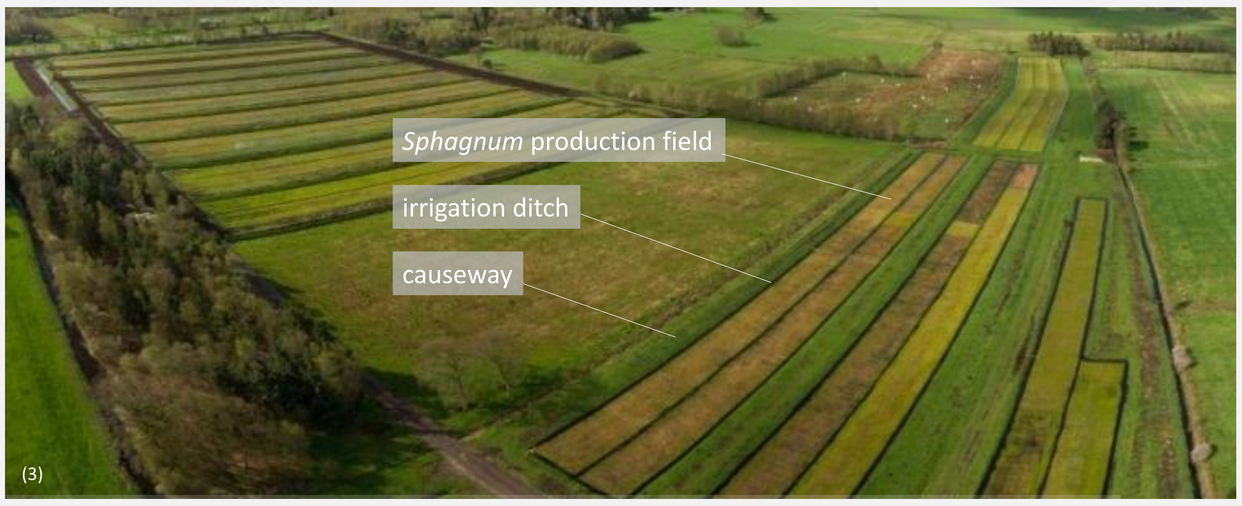


Future optimization



> 2,4 Mio. t

CO_2 equivalent per year



Sphagnum paludiculture site in Rastede, NW Germany

PROBLEMS

- High investment costs
- Special machines needed
- Competition with conventional agriculture
- Peat extraction still cheaper
- Currently no broad sales market (8)

Cattle on bog grassland, Rastede

BENEFITS

- Climate protection
- Sustainability
- Water filtration and stabilization of the regional water balance (7)
- Surrogate habitats for rare bog species, like beetles (4) and spiders (5)

(1) cocoonapothecary.com
(2) Daun et al. 2023, Science of The Total Environment
(3) Greifswald Mire Centre, internal materials
(4) Mainda 2021, Bachelor Thesis, University of Greifswald
(5) Muster et al. 2020, Journal of Arachnology
(6) peatlands.org
(7) Vroom et al. 2020, Science of the Total Environment
(8) Wichmann et al. 2020, Mires and Peat