Sustainable harvests from wet peat (Paludiculture)

Hans Schutten

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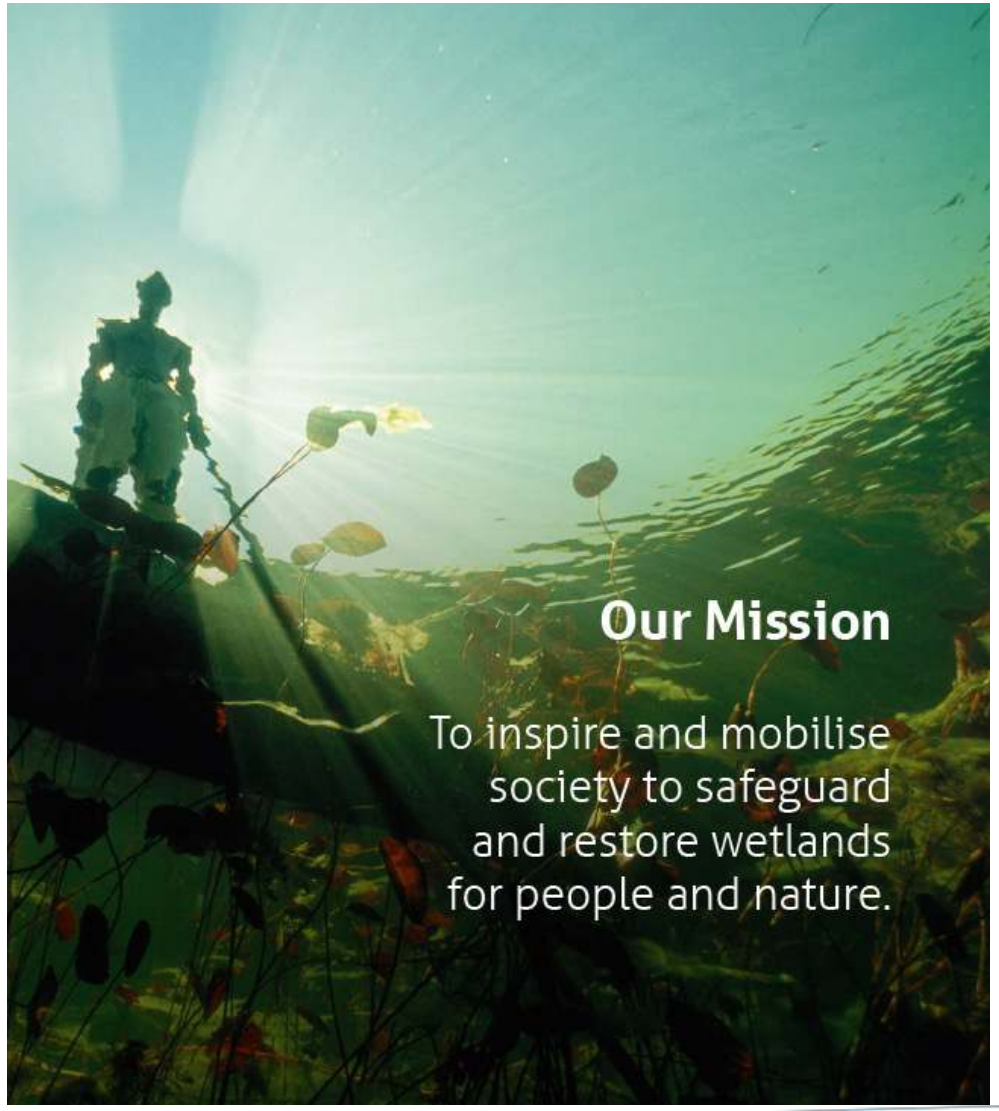
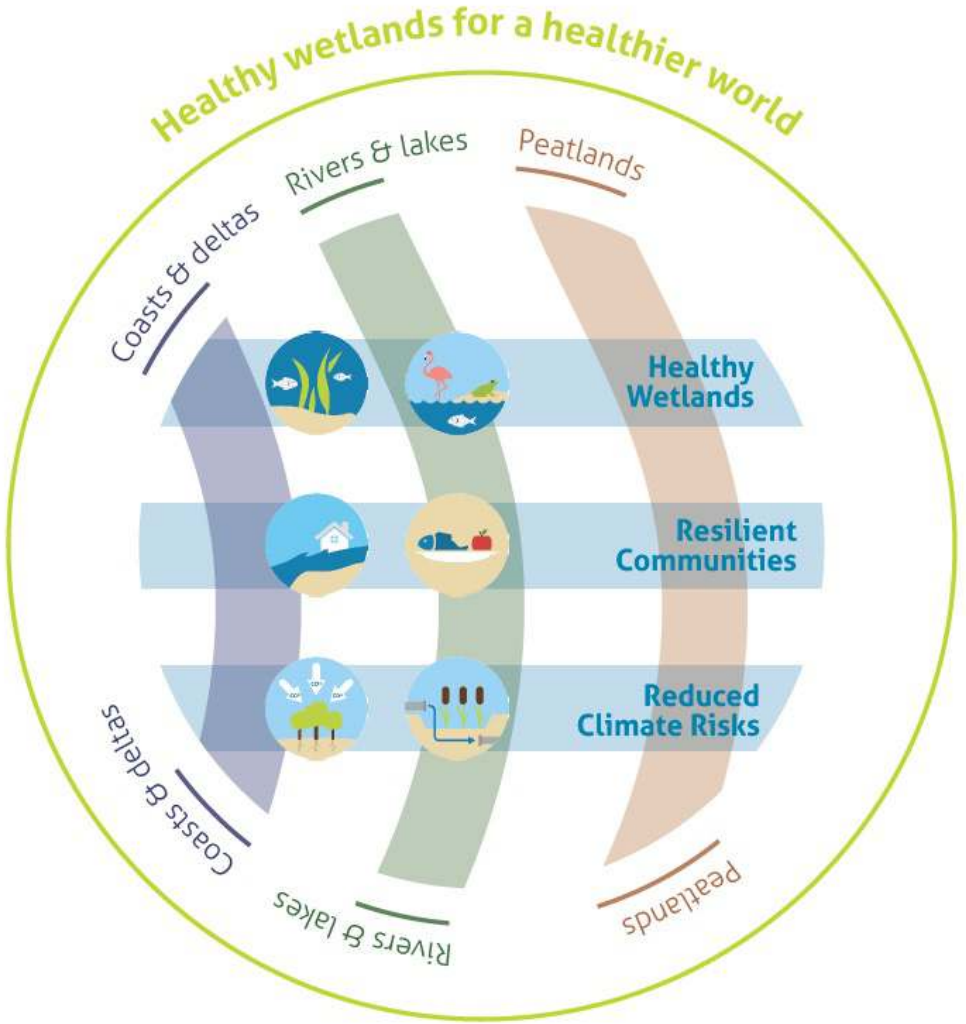
Our mission and focus





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Our wetland carbon & peatland restoration track record (examples)

SCIENCE
Wetland carbon is key

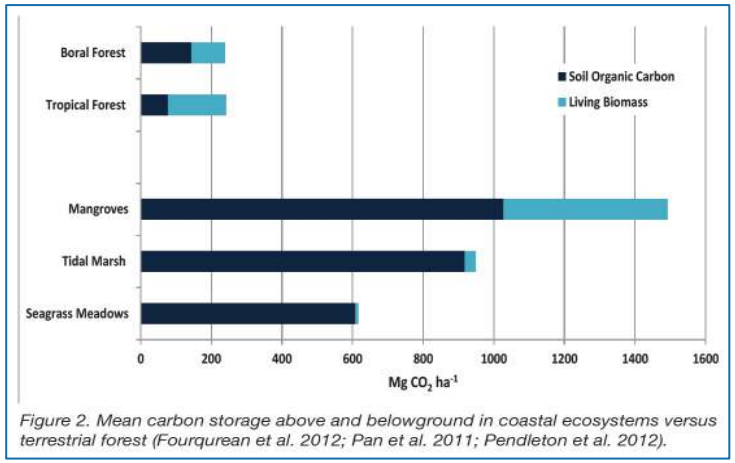
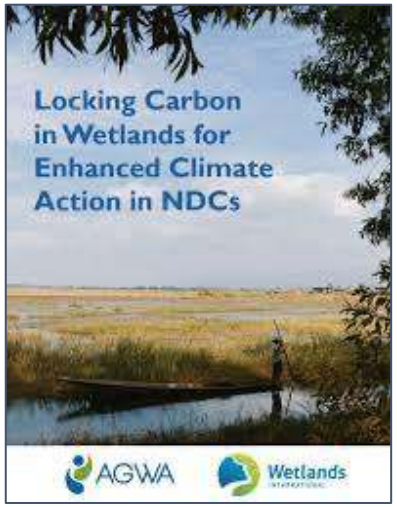


Figure 2. Mean carbon storage above and belowground in coastal ecosystems versus terrestrial forest (Fourqurean et al. 2012; Pan et al. 2011; Pendleton et al. 2012).

- Verra REDD+ Methodologies for tropical peatswamp
- IPCC supplement on wetland carbon – peatland rewetting
- Land-based GHG emissions hydraulic engineering
- GMC (peatland science, Paludiculture)

POLICY & communications
Wetlands in NDCs



- "Saving the peat for less heat" campaign
- Advising Indonesian government on peatland restoration > 750,000 ha
- Guidance on integration of wetlands in NDCs (2020 report +practical Mongolia, Russia etc)
- #Power of Wetlands campaign
- European Policy (CAP, Conservation etc)

PRACTICE
Real impact on the ground

- UNFCCC Momentum for change award peatlands Russia (100,000 ha)
- Largest VCS verified REDD+ project globally peatswamp forest Kalimantan (>300,000 ha)
- Best practice on peatland restoration and paludiculture
- Collaboration with Permian Global, dialogues with investors and commodity chains (RSPO, CANOPY)

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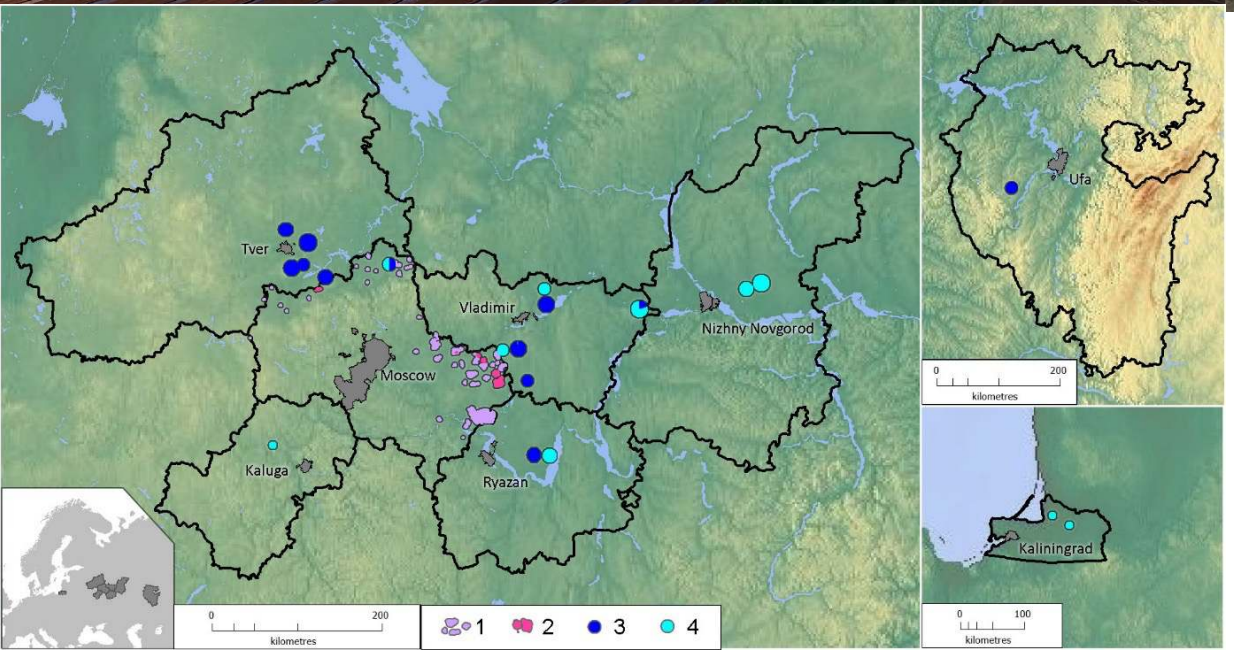
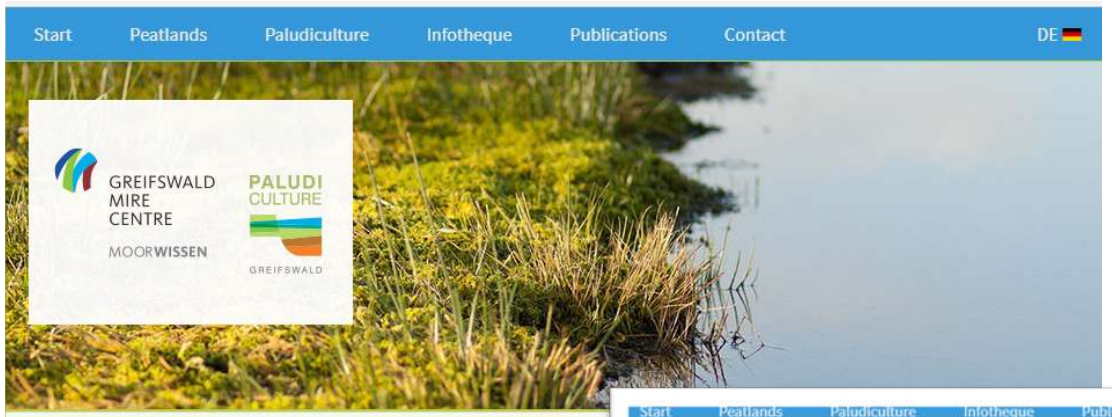
Peatland restoration Russia



Short term needs: more ecological restoration principles and development of acceptance for paludiculture , awareness about carbon storage function
Opportunities: long term collaboration and large area affected

- PeatRus project 2011-2023: Reducing Peat Fire and GHG Emissions in Central Russia (European part)
- Areas: Rewetting of ~100.000 ha degraded peatlands, reducing peat fire on ~120.000 ha, climate-smart peatland rewetting 75.000 ha, 9.500 ha with pilot paludiculture application and ecological restoration, spanning 10 provinces. Rewetting plans and prioritization for additional 90.000 ha of drained peatland.
- Ecosystem: Vast areas of boreal bogs and some fens, drained mostly for forestry
- Beneficiaries: Several regions in Russia, local communities and population of large cities (lower peat fires and air pollution risk); and protected areas.
- Threats: drainage and afforestation, peat extraction, peat fires and lack of capacity to implement ecosystem restoration
- Carbon - Emission reductions of 5-10t CO2eq/a/ha GHG, targeting a reduction of 650,000 tonnes of CO2eq emission reductions per year at the end of the project, currently achieved: emission reduction of 320,000 metric tonnes CO2 eq/a.
- Innovative solutions: Pilot paludiculture sites are established and demonstrate sustainable peatland cultivation and relevant capacity for larger-scale implementation is being developed in two regions (Tver, Kaliningrad)
- Setting up a system for monitoring for GHG emissions and biodiversity and integrating it into national reporting systems for conventions and policy

Paludiculture



MoorWissen | Paludiculture | Paludiculture in detail | Best practice examp

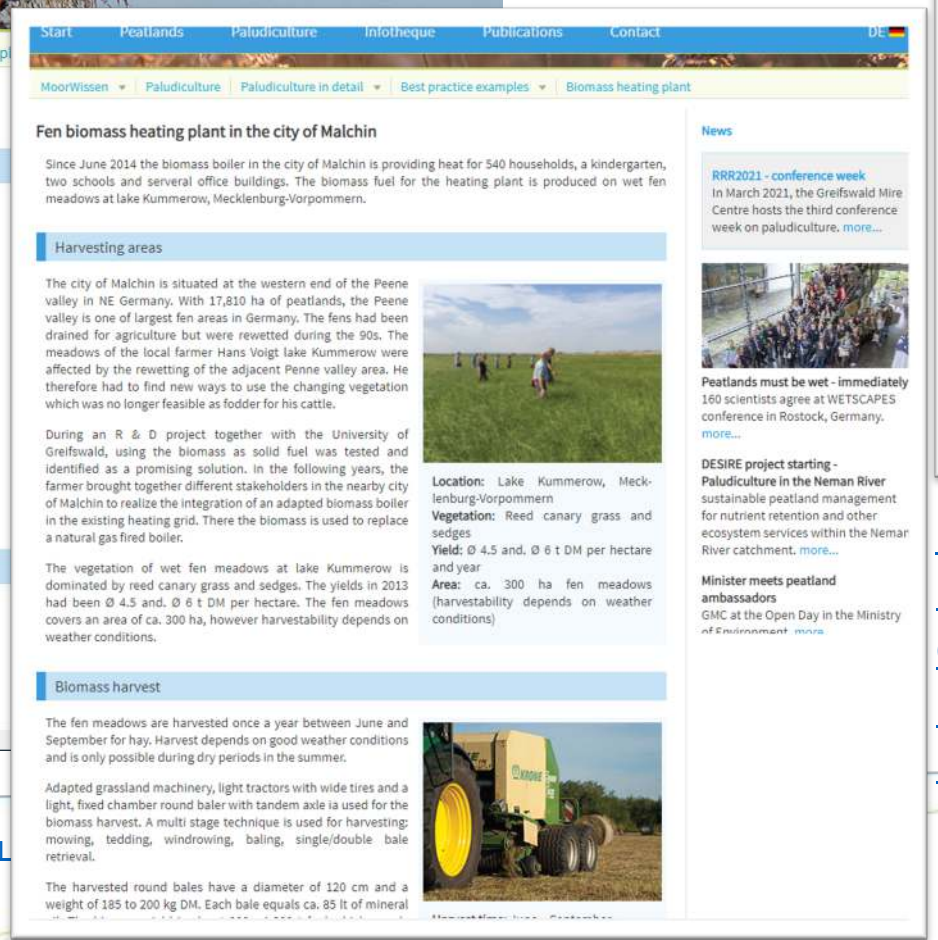
Best practice examples

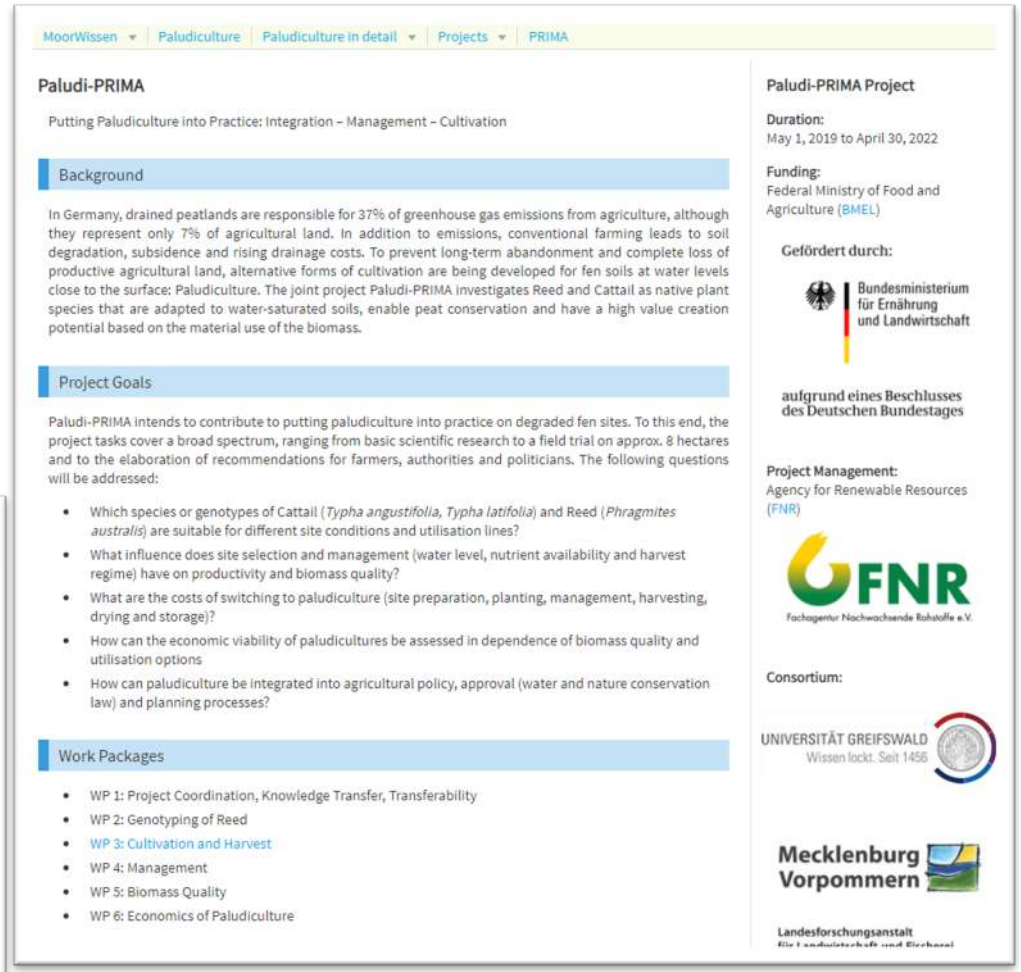
Paludiculture on fen peatlands

Biomass heating plant
The heating plant in the city of Malchin combines bioenergy with climate, landscape and water protection and results in benefits for biodiversity and tourism. more...

Cultivation of Cattail (Typha)
In the Project Paludi-PRIMA, Cattail (Typha) is cultivated on 10 ha. more...

Paludiculture on bog peatlands





[MoorWissen | Paludiculture | in detail | Bhttps://www.moorwissen.de/en/paludikultur/imdetail/umsetzungsbeispiele/biomasseheizwerkmalchin.phpest practice examples | Biomass heating plant]

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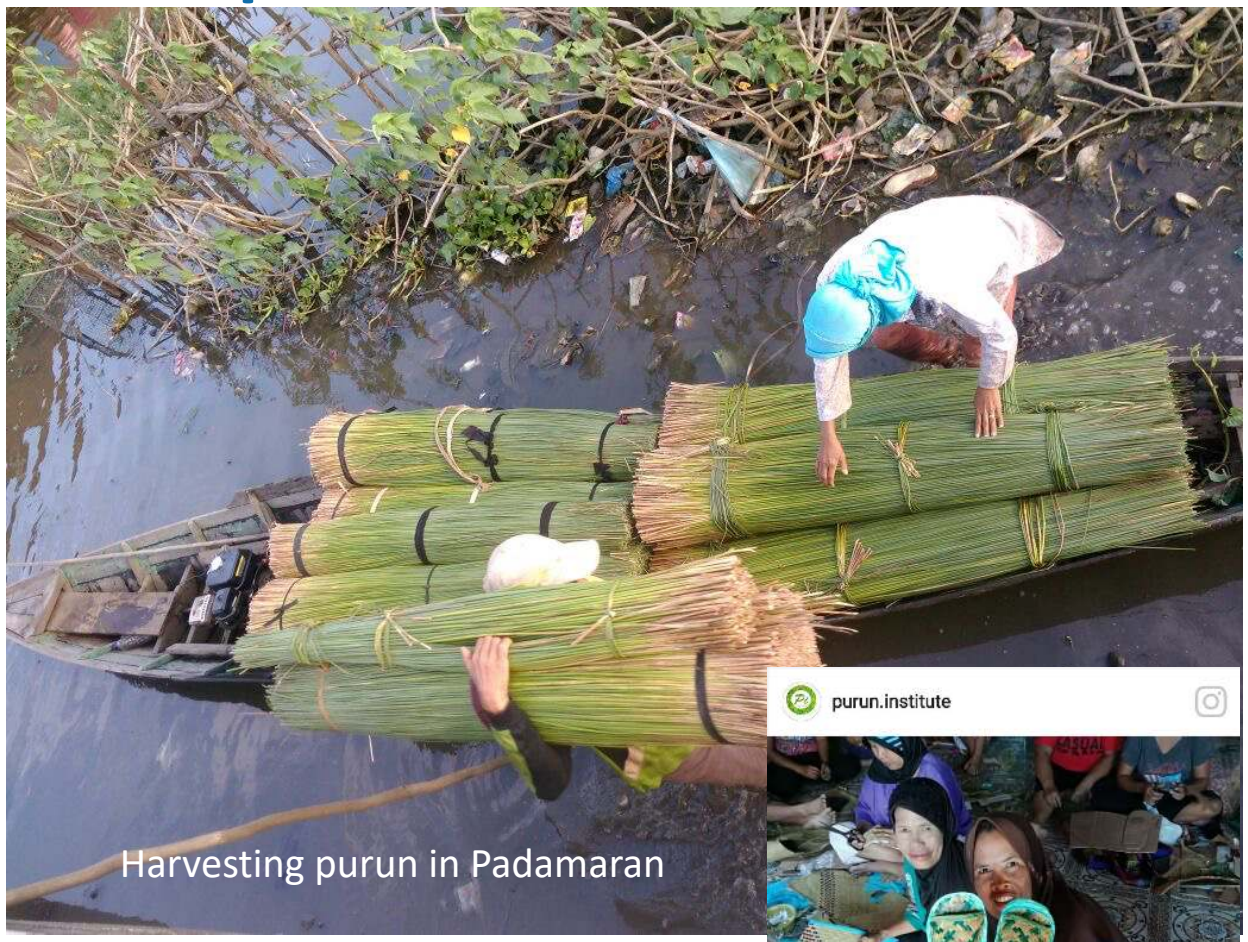
Landscape track record – Katingan, Kalimantan

- Area: 149,800 ha of intact peatswamp forest; 155,869 ha mixed use community buffer zone (305,699 ha total)
- Ecosystem: restoration and conservation of tropical peatland forest, incl. habitat for endangered wildlife (Orangutan)
- Community: we work closely with communities to create sustainable development opportunities and develop alternatives to palm oil and timber plantations
- Partners: PT Rimba Makmur Utama, Permian Global and Yayasan Puter Indonesia, Silvestrum, Greifswald Mire Centre, Wageningen Univeristy
- Carbon storage: 7,4 million tonnes of CO2e per year, REDD+ VCS verified
- Threats: felling and draining of tropical peatland forests to make place for plantations; leading to huge GHG emissions, fires and biodiversity decline
- Short term needs: extracting lessons learned and documenting/sharing best practices
- Opportunities: this project could be used as an example to inspire replication and/or enhance standards and policies

Tropical livelihoods

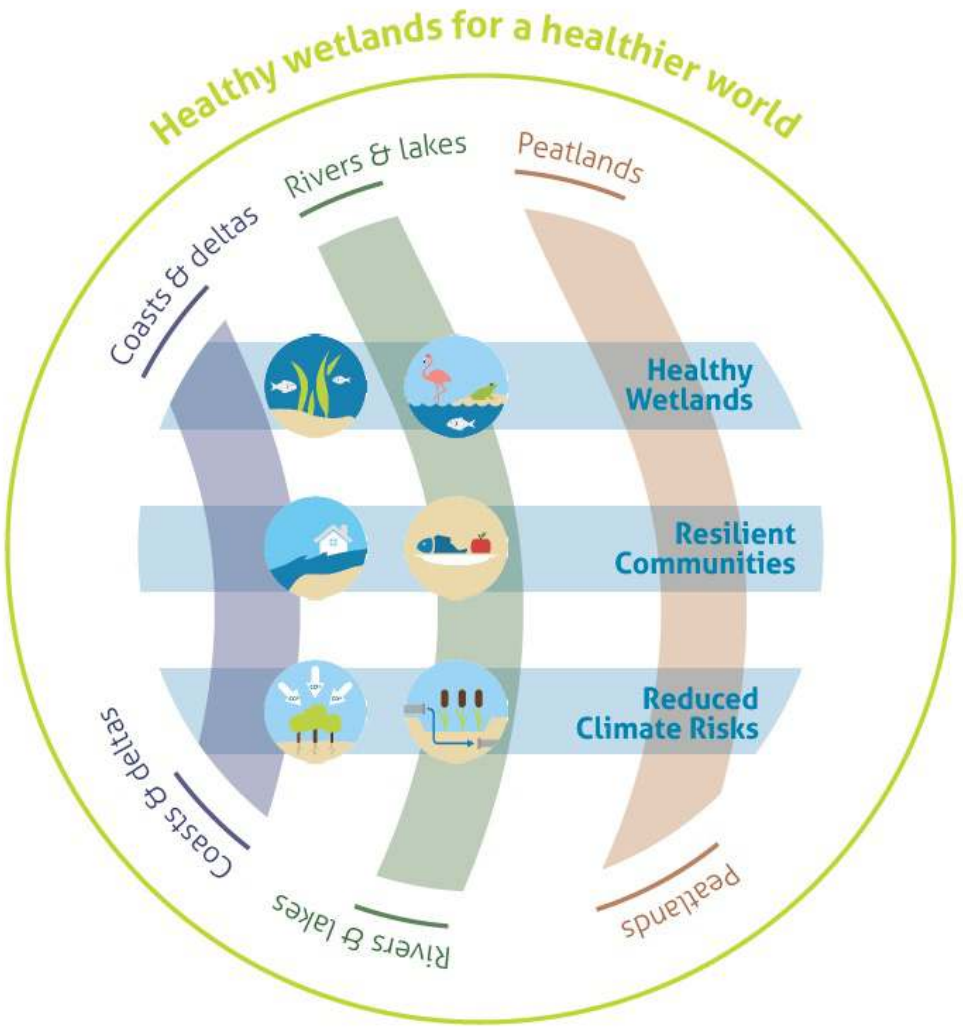


Harvesting purun in Padamaran

Sago-Duck-feed business model.

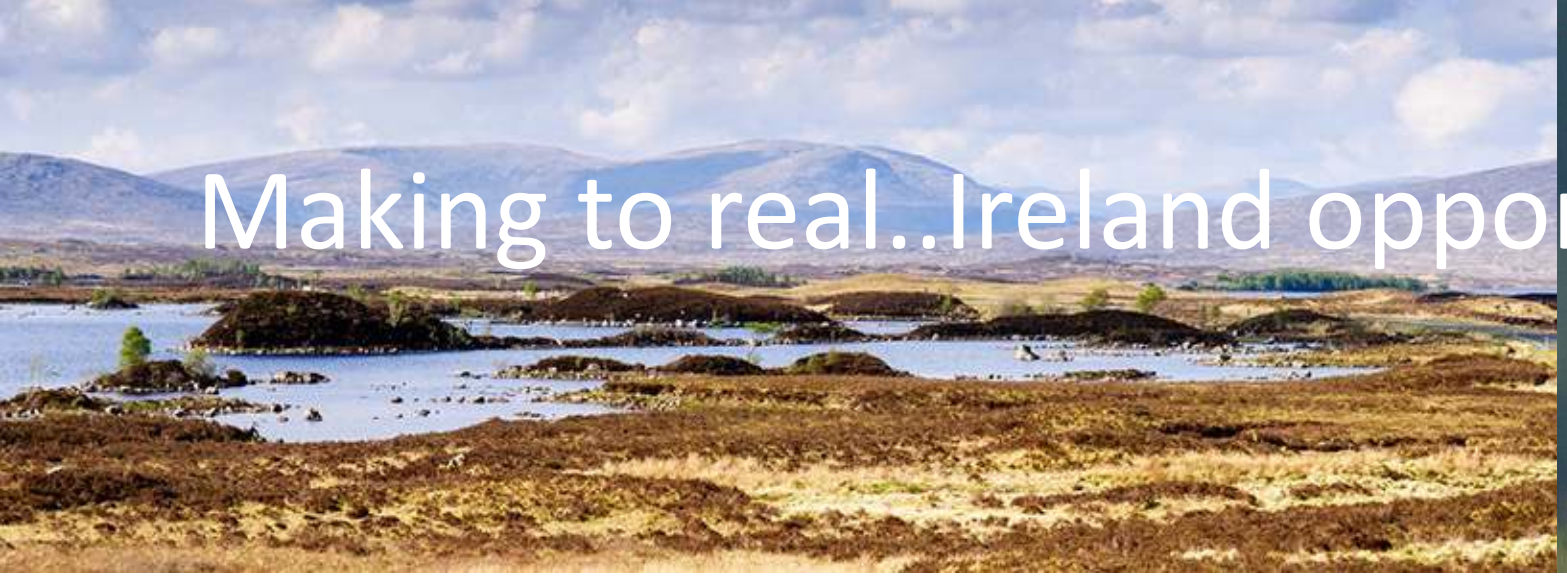
Sago is a palm species that can be grown successfully on wet peatland soils and thus providing sustainable crops that protect the ecohydrology of the peatland. The produce or crop is used for food. The waste products are re-purposed into animal feed for ducks, and thus provide another food source and the manure from the ducks and organic matter from the feed recirculate nutrients back to the soils. This business model creates sustainable local livelihoods and food sources, protects the functionality of the peatlands and creates a circular nutrient economy reducing the need for external feed and fertilizer, a real win-win for local economy and peatlands.

Summing it up



Next steps…. Let's think together

1. Scaling it up:
    1. supply chain analysis
    2. Linking to market
2. Enabling policy
    1. Governance and subsidies align
    2. Procurement and trade (EU and others)
3. Community benefit
    1. Sustainable livelihoods create ‘ownership’
    2. Longevity of solutions



Making to real..Ireland opportunities

- Area: >1,000,000 ha of lowland raised bogs in the Irish Midlands are drained for peat mining to feed power stations or grow-bags
- Ecosystem: lowland raised bogs; discrete low ‘mounds’ (typically 10 m deep)
- Restorability: Restoration through hydrological management (ditch and gully blocking). Experience across the country through dedicated state company (Bord na Mona) program
- Community: ??
- Partners: Bord na Mona – state owned Energy Company
- Carbon storage: to be determined. Lots of sites which are now abandoned with 50 cm to 2 m of peat remaining. The early gain is reduced emissions of carbon from these drained peat soils
- Opportunities: as large areas are still with 1 owner (Bord na Mona) with an ambition ; 108M Europe for restoration**, but no real thinking of opportunities for best use..**
- **Irish government now includes peatlands in their NDC’s**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