

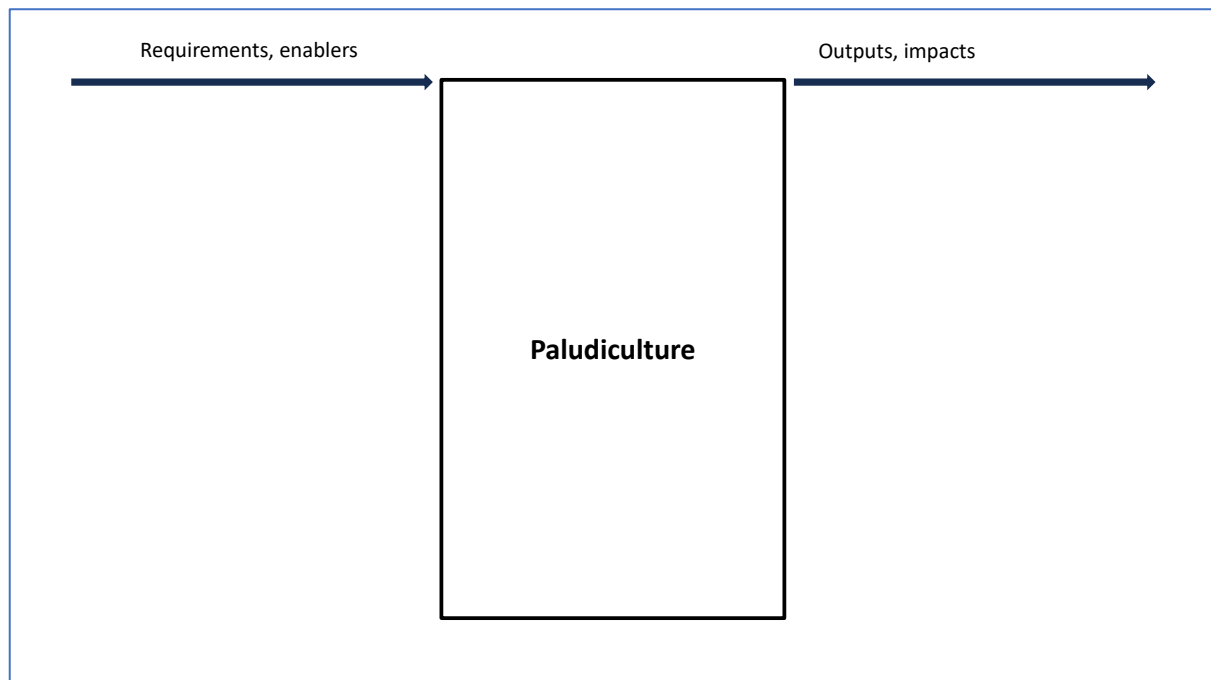
## Peatland Programme conference 2023 workshop summary: Principles of sustainable peatland paludiculture

### Context and aims

Paludiculture is a farming system modelled on the profitable production of wetland crops. In fact, this is not new: reeds, mosses and sedges have been harvested from wetlands for household and commercial uses for centuries. However, paludiculture could provide a new opportunity to meet the challenges of the 21<sup>st</sup> century (climate change, biodiversity loss, food/fibre/energy security), particularly for farmers on marginal land, by enabling the profitable production of fibre and food crops suited to wetland whilst better managing carbon stocks and enhancing biodiversity. One recommendation of the Lowland Agricultural Peat Task Force (published Thursday 29th June 2023) was the adoption of a roadmap that sets out how the widescale adoption of paludiculture might become a commercial reality. The Paludiculture Exploration Fund is delivering an integrated series of projects and engagement activity to help overcome barriers to adoption of paludiculture in practice. But paludiculture is not a panacea. In this workshop we will explore how the benefits and risks of paludiculture should be considered and addressed within the landscape context. Is paludiculture good for natural lowland peat habitats or does it bring new threats?

### Workshop activities

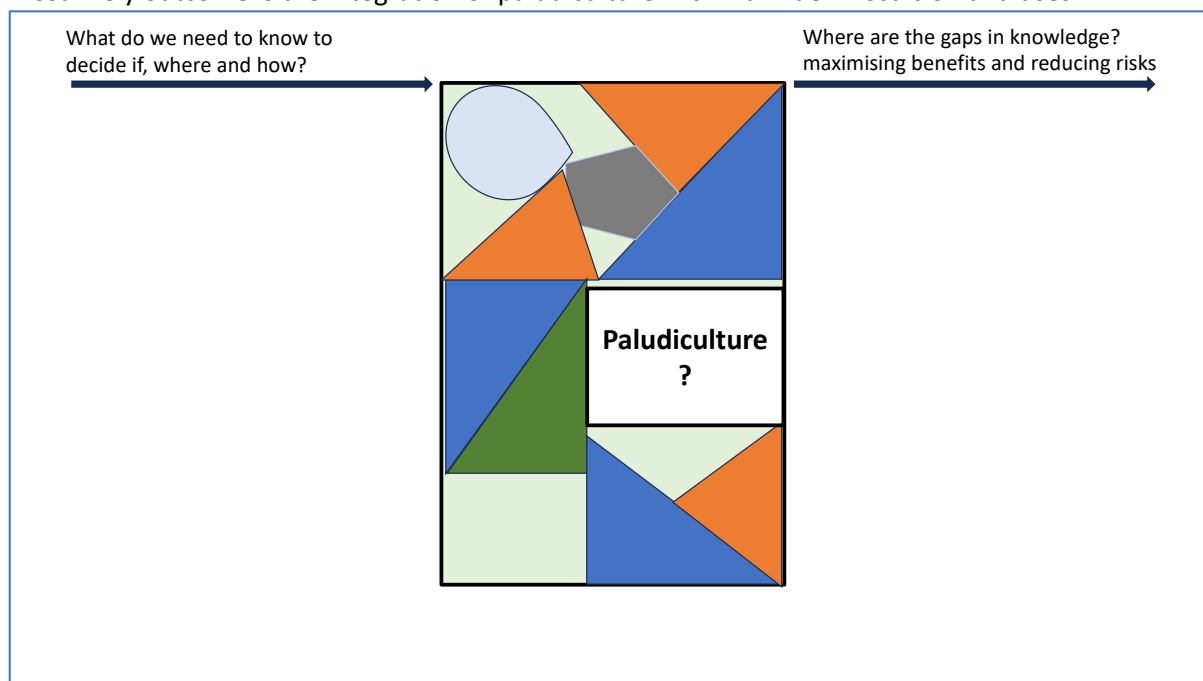
To begin the workshop, small groups identified and discussed the requirements and enablers for paludiculture together with the potential outputs and impacts.



**Summary of feedback** (grouped, but in no particular order)

<b>Requirements, enablers</b>	<b>Outputs, impacts</b>
<ul style="list-style-type: none"> <li>• Water management structures</li> <li>• Abstraction regulations allowing: More water Stable / manageable high-water table Irrigation</li> <li>• Peat or other water-holding soil</li> <li>• Market for goods</li> <li>• Commercial business models</li> <li>• Sustainable reliable seed / transplanting materials</li> <li>• Accessible investment funding</li> <li>• Landowner engagement</li> <li>• Willingness to explore change in land management</li> <li>• Proof of concept at field scale</li> <li>• Grower training</li> <li>• Community engagement</li> <li>• Enabling government policies</li> <li>• Government incentives</li>   <li>• Public funding for priming action</li> <li>• Funding for R&amp;D and innovation</li> <li>• Biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• Novel products</li> <li>• Low carbon products</li> <li>• Developing markets</li> <li>• Materials to develop peat-free growing media (e.g., harvested <i>Sphagnum</i>, typha fibre)</li> <li>• Profit</li> <li>• Diversification of farm income</li> <li>• Job creation / loss +</li> <li>• Reduced land-based carbon emissions</li>   <li>• Replacement of fossil fuels</li> <li>• Peat soil preservation</li> <li>• Carbon sequestration</li>   <li>• Stable and controllable water tables</li> <li>• Flood storage</li> <li>• Clean water</li> <li>• Improved habitat and biodiversity ++</li> <li>• More sustainable use of farmland surrounding peatland nature reserves to support those habitats</li> </ul>

To bring together the thoughts of the workshop, we finished by collecting up reflections on the knowledge gaps both to identify the most suitable locations for paludiculture and to assess the benefits and risks associated with implementation, recognising that in lowland peat landscapes the most likely outcome is the integration of paludiculture within a wider mosaic of land uses.



### Summary of feedback (grouped, but in no particular order)

What do we need to know to decide if, where and how?	What are the gaps in knowledge? Maximising benefits and reducing risks.
<ul style="list-style-type: none"> <li>• What emissions savings are possible – in any area and with each possible crop?</li> </ul>	<ul style="list-style-type: none"> <li>• Defining and understanding paludiculture options for blanket bogs vs fens</li> </ul>
<ul style="list-style-type: none"> <li>• In which areas (soil, climate, crop) are the potential emissions savings highest?</li> </ul>	<ul style="list-style-type: none"> <li>• Is there a role for paludiculture in the uplands?</li> </ul>
<ul style="list-style-type: none"> <li>• Is the overall benefit greater on peat soils in unfavourable condition?</li> </ul>	<ul style="list-style-type: none"> <li>• Research into crops – agronomy, yields and profitability</li> </ul>
<ul style="list-style-type: none"> <li>• What are the impacts on neighbouring land uses?</li> </ul>	<ul style="list-style-type: none"> <li>• Impact of climate change on water availability / crop success</li> </ul>
<ul style="list-style-type: none"> <li>• What impacts of changes for adjacent designated sites or species e.g., protection of wet grassland for lapwing</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring that machinery development fits alongside or spearheads the move to low carbon vehicle development for agriculture</li> </ul>
<ul style="list-style-type: none"> <li>• Need better understanding of the role of livestock grazing or not? e.g., sheep in the uplands, lowland marshes.</li> </ul>	<ul style="list-style-type: none"> <li>• Farmer-focussed support – it would be better if engagement was not only through the Wildlife Trusts</li> </ul>
<ul style="list-style-type: none"> <li>• Where is the water available; how much is needed and how best to manage it across the year?</li> </ul>	<ul style="list-style-type: none"> <li>• Emissions savings data for each specific crop in each wetland type / region</li> </ul>

<ul style="list-style-type: none"> <li>• What is the water table baseline? How does that relate to water management e.g., levels in ditches</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term economic viability and management</li> </ul>
<ul style="list-style-type: none"> <li>• Can we have methods to rapidly determine whether the hydrology will work for the site / catchment in the short and longer-term?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the max. market demand for paludi-products?</li> </ul>
<ul style="list-style-type: none"> <li>• Do same benefits accrue from a perched surface water table as from an overall higher water table?</li> </ul>	<ul style="list-style-type: none"> <li>• Engagement with the fibre / construction industry to identify barriers and consider what is needed to incentivise use of reed/typha</li> </ul>
<ul style="list-style-type: none"> <li>• What capital investment is needed in water infra-structure? Are any changes best done at field or catchment-scale?</li> </ul>	<ul style="list-style-type: none"> <li>• Engagement with the horticulture industry to identify barriers and consider what is needed to incentivise use of Sphagnum/typha as a viable and affordable peat alternative</li> </ul>
<ul style="list-style-type: none"> <li>• Is it financially viable in this place? – needs coming together of market opportunity with supply, as well as subsidy to prime action</li> </ul>	<ul style="list-style-type: none"> <li>• Conditions that determine financial viability – where / how</li> </ul>
<ul style="list-style-type: none"> <li>• What level of incentive is available for different paludi-crops and wider market development?</li> </ul>	<ul style="list-style-type: none"> <li>• More information and engagement with surrounding communities to look at labour, food, and water security</li> </ul>
<ul style="list-style-type: none"> <li>• Funding availability – when, how much, for what? Many steps in implementation and hence many potential barriers to overcome, e.g., specialist harvesting machinery</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts on nearby wildlife habitats / designated sites</li> </ul>
<ul style="list-style-type: none"> <li>• Is the policy environment secure?</li> </ul>	<ul style="list-style-type: none"> <li>• Can Sphagnum harvest be designed to work and be cost effective in natural environments as part of restoration?</li> </ul>
<ul style="list-style-type: none"> <li>• Is the land use change expected to be permanent or is it reversible?</li> </ul>	<ul style="list-style-type: none"> <li>• A peatland champion – a celebrity focus</li> </ul>
<ul style="list-style-type: none"> <li>• Impacts of previous land use on ease of conversion and impacts – positive and negative</li> </ul>	