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General presentation

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Alternative substrates with #LessPeat to support the Green Transition in horticulture

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12 partners from 4 countries

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Climate change and horticulture

Peat is vital for horticulture due to its unique qualities, including water retention, low pH, and pathogen-free nature.

However, peat extraction is unsustainable and contributes to greenhouse gas emissions, biodiversity loss, and soil degradation. **Horticulture's dependence on peat is expected to rise greatly by 2050.**

Alternatives like coconut fibre are being used but don't reduce greenhouse gas emissions or enhance Europe's resource independence.

Transitioning to sustainable horticulture with local alternatives is crucial to keeping food systems within ecological boundaries and achieving sustainability in the mid-term.

Defining Alternative Substrates

Alternative substrates to peat are materials like compost, Sphagnum moss, wood fibres , composted bark, and other local resources that aim to replace peat in horticulture.

They mimic peat's properties —such as water retention, porosity, and nutrient exchange —while being more sustainable.

Fully peat-free solutions are already available in some horticultural areas, though challenges remain for uses like mushroom cultivation, ornamentals and vegetable seedling production.

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Barriers to Adoption

Technical

Alternative raw materials, such as compost, wood fibre, and Sphagnum moss, generally underperform compared to peat. Additionally, ensuring consistent quality and availability of these substitutes is challenging, as no single material can match the large demand for peat (e.g., 16 Mm3 for horticulture in the EU).

Socio-cultural

Growers worry about the effectiveness of low-peat substrates versus traditional peat, fearing it may impact their income. There is also a lack of guidelines on using alternative substrates, highlighting the need for better support and advice for growers to facilitate a shift towards sustainable options.

Economic

The shift to peat substitutes may involve higher initial costs for growers and substrate producers due to investments and uncertainty about future returns, especially in a low-margin industry reliant on affordable inputs. Additionally, insufficient government support and lack of incentives for using alternative materials pose further challenges.

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PEATLESS Approach

Technical

Develop at least **18 alternative substrate blends** with a maximum of **30% peat**, using locally sourced materials like compost and wood fibres, to match the performance of traditional peat substrates in mushroom, seedling, and ornamental systems across key regions: La Rioja, Pistoia, Flanders, and Seeland.

Socio-cultural

Enhance grower confidence and adoption of these alternatives through activities like co-creation and educational materials, alongside innovative dissemination methods, such as exhibitions and WhatsApp channels.

Economic

Establish **new business models** to promote the market entry of peat-free substrates and foster **local value chains.**

Additionally, provide evidence to help decision-makers create over 30 policy recommendations aimed at reducing peat use in horticultural substrates at various governance levels.

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Expected Impact by 2050

- Save a significant amount of peat, preventing tons of CO_2 emissions.
- Support 5,000 horticultural businesses across 40 regions transition to using sustainable peat alternatives.
- Provide more than 30 practical recommendations for making growing media use more sustainable.

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Thank you