



EUROPEAN UNION

# EUROPEAN MISSION SOIL WEEK

Soil health for a sustainable forest-  
based bioeconomy

Co-creation breakout session

12/11/2024



#MissionSoil  
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# State-of-play

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*DG AGRI, European Commission*

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# Toolbox for promoting sustainably managed and multifunctional forests



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Research & Innovation  
Cluster 6 Work Programme

EU partnerships



Candidate partnership:  
Forests and forestry for a sustainable future





Innovation & Knowledge exchange

Missions

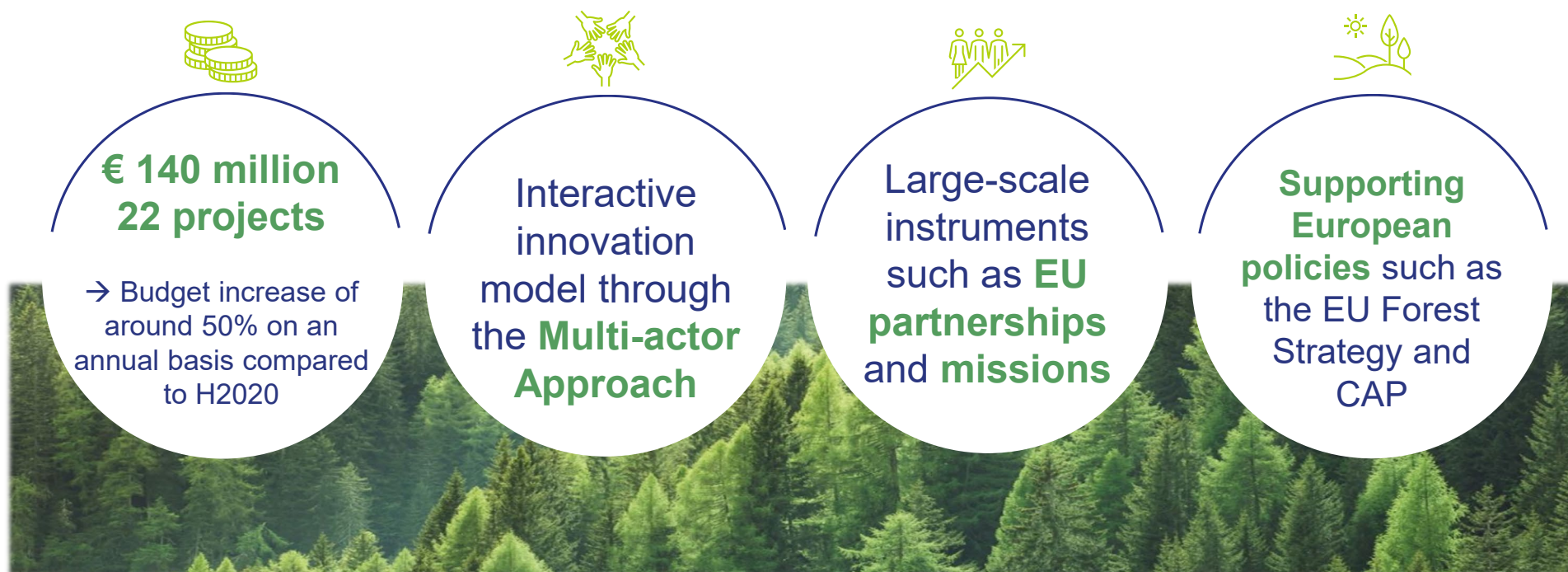


'A Soil Deal for Europe'



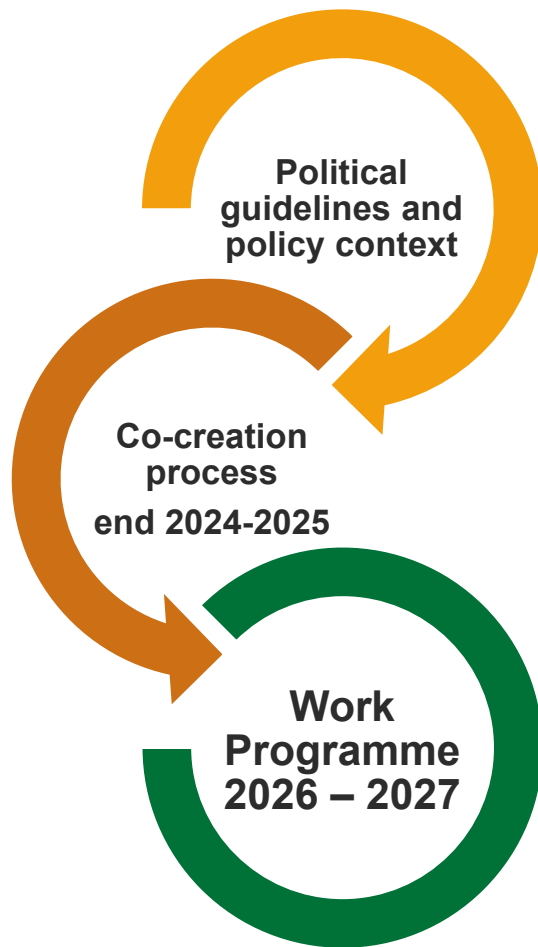
-  Horizon 2020 / Horizon Europe
-  Common Agricultural Policy

## Forestry research under Horizon Europe (2021-24)



**Forest research areas:****Forest bioeconomy****Forest and Climate Change****Forest Monitoring and R&I****Forest Management, Conservation and Restoration****Forest Resilience & Forest Fire Risk Management**

# Work Programme preparation cycle



- New political guidelines
- Relevant policies and strategies, for example, the Common Agricultural Policy (CAP), the EU Soil Strategy and the Soil Monitoring Law (proposal)
- Horizon Europe Strategic Plan 2025-2027
- Mission Soil Implementation Plan

- Analysis of the state of the art including results of Mission Soil projects
- Commission internal consultation on policy needs
- Early involvement and continuous exchange with Member States
- Stakeholder and general public consultation

- Publication of the Work Programme

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## Andrea Martos

Project Coordinator  
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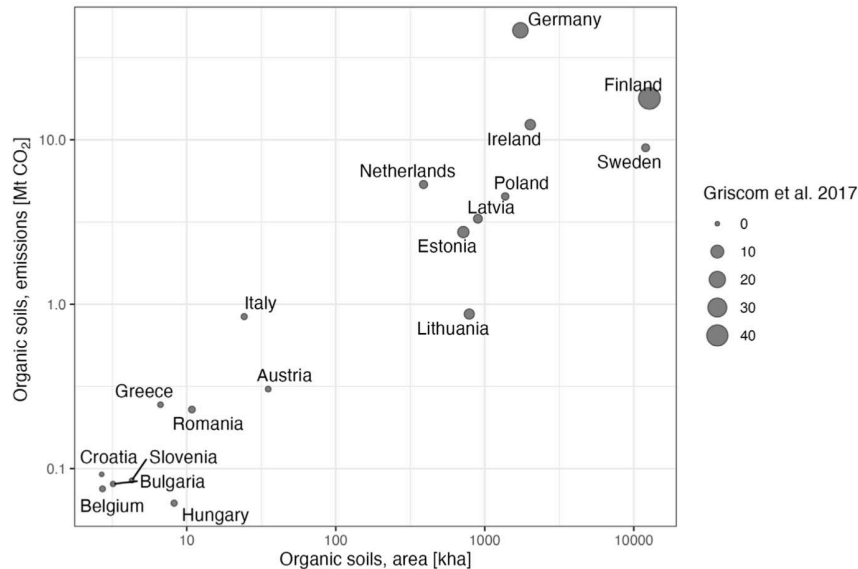
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# In the EU, current CO<sub>2</sub> emissions from organic soils are 98 Mt CO<sub>2</sub> eq. from forest land and from agricultural land

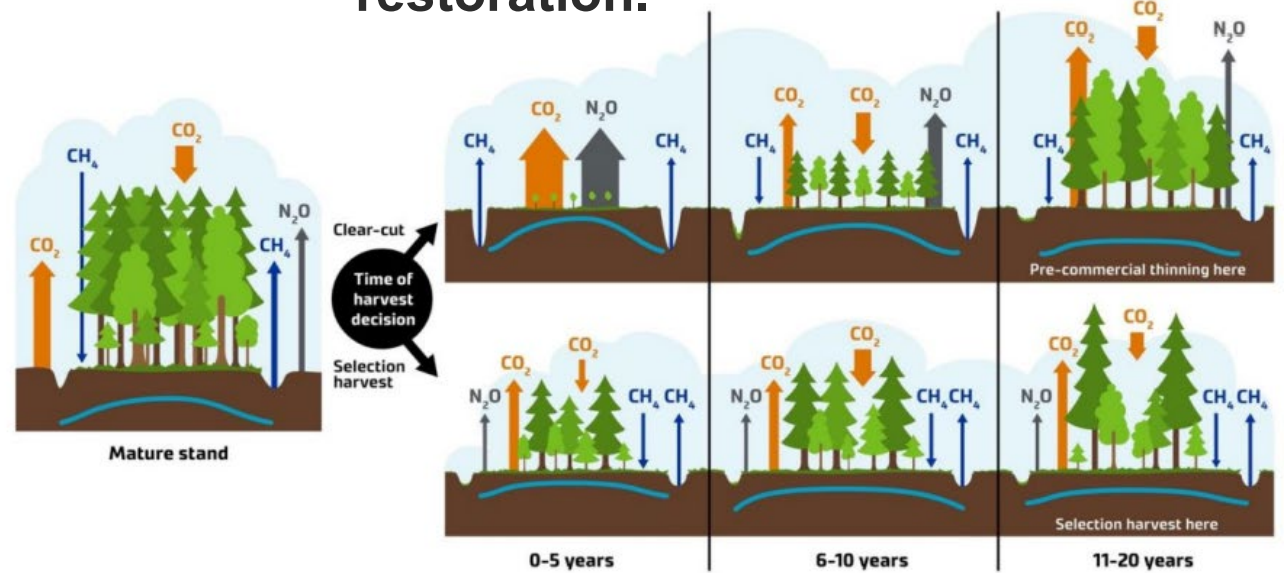
frontiers | Frontiers in Environmental Science

We need targeted policy interventions in the EU to save soil carbon

R. Mäkipää<sup>1\*</sup>, O. Bruun<sup>2</sup>, A. Lehtonen<sup>1</sup>, M. Peltoniemi<sup>1</sup> and K. Kulovesi<sup>2</sup>



In drained peatland forests one could avoid clear-cut emissions by continuous cover forestry or restoration.



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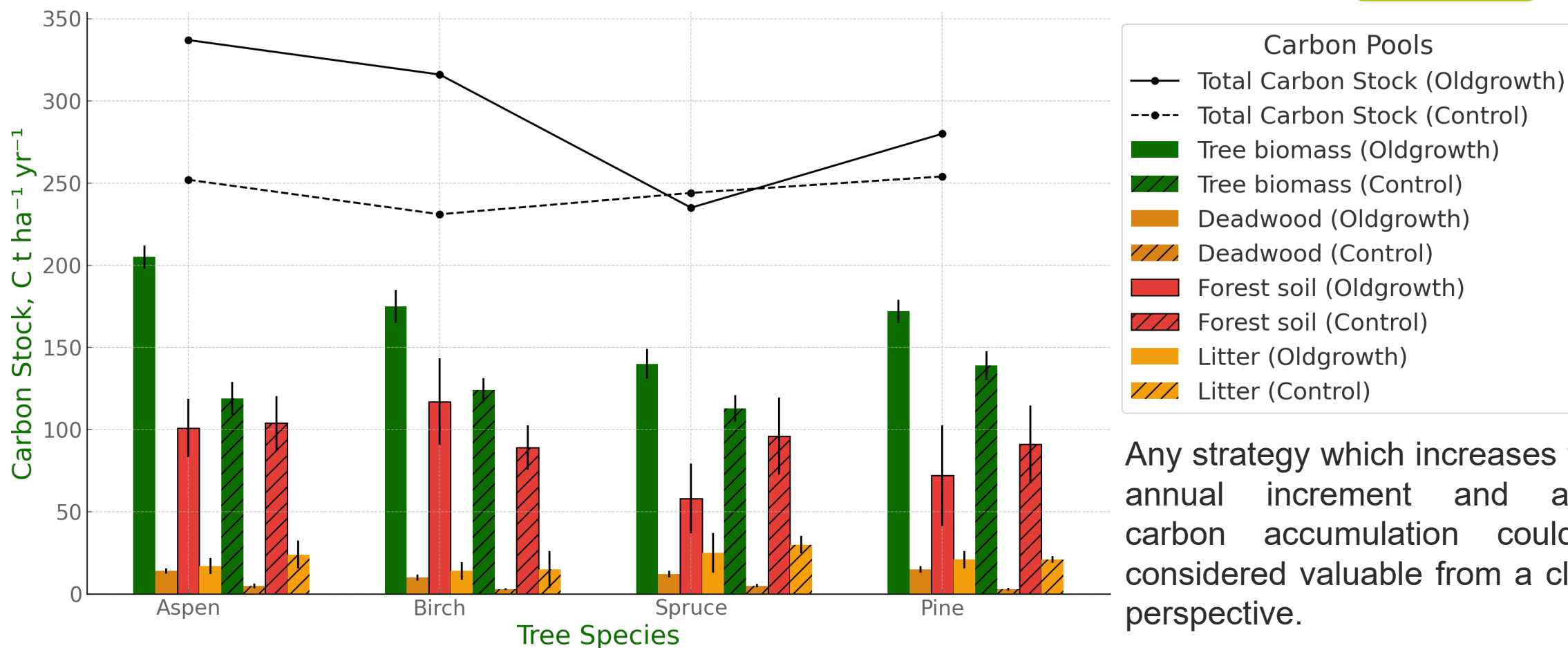
FIGURE 1 Land areas of organic soils for forest land, cropland, grassland, and wetlands under UNFCCC reporting for 2021, based on the 2023 submissions of the countries that reported organic soils, y-axis for corresponding organic soils CO<sub>2</sub> emissions, while size of the circle indicates estimated emission reduction potential by *Griscom et al. (2017)* (peatland restoration and avoided peatland impacts).



## Climate change mitigation measures:

- **Afforestation, small potential when only focussed on marginal lands, slow in Boreal conditions**
- **Nitrogen fertilisation in Boreal conditions increase soil C stocks**
- **Ash fertilisation in drained peatland as circular economy solution → more tree biomass sink**
- **Mixed forests → potentially good for soil health and resilience**
- **Managing forests in south to minimize risk of forest fires → avoiding large emissions**

# Carbon stock ( $\pm$ 95% confidence interval) in carbon pools of old and control forest stands

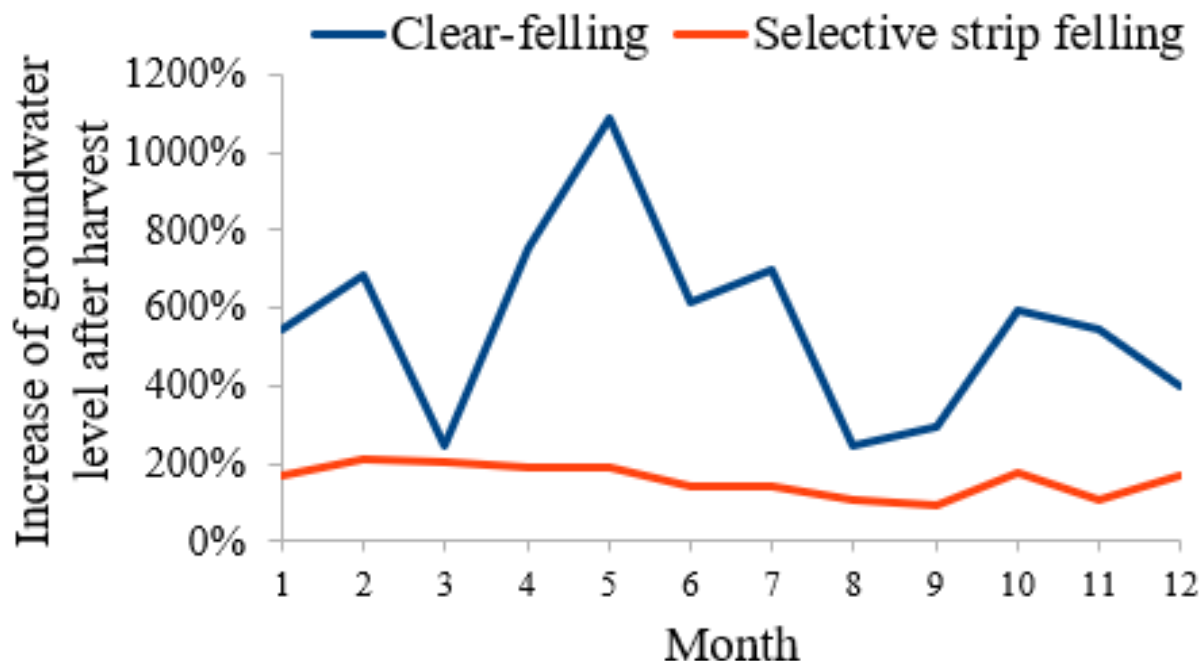


Any strategy which increases forest annual increment and annual carbon accumulation could be considered valuable from a climate perspective.

# Strip harvesting as an alternative harvesting approach (peatland forest)



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The relative increase in groundwater level (compared to the groundwater level before logging in the respective month) after strip-harvest and clear-cut in a mature pine stand on peat soil.

**Strip harvesting** in pine stands on peat soil as possibly promising forest management strategy:

**Initial research results show lower groundwater levels and lower methane emissions;**

More research (data and modelling) is needed to detect the optimal opening size, which would allow for lower methane emissions and not negatively impact increment (because of shadowing).

### Project Name

PHYtomangement as a sustainable feedstock source of lignocellulosic-based high-value Bio-based products for textile applications

### Call Topic

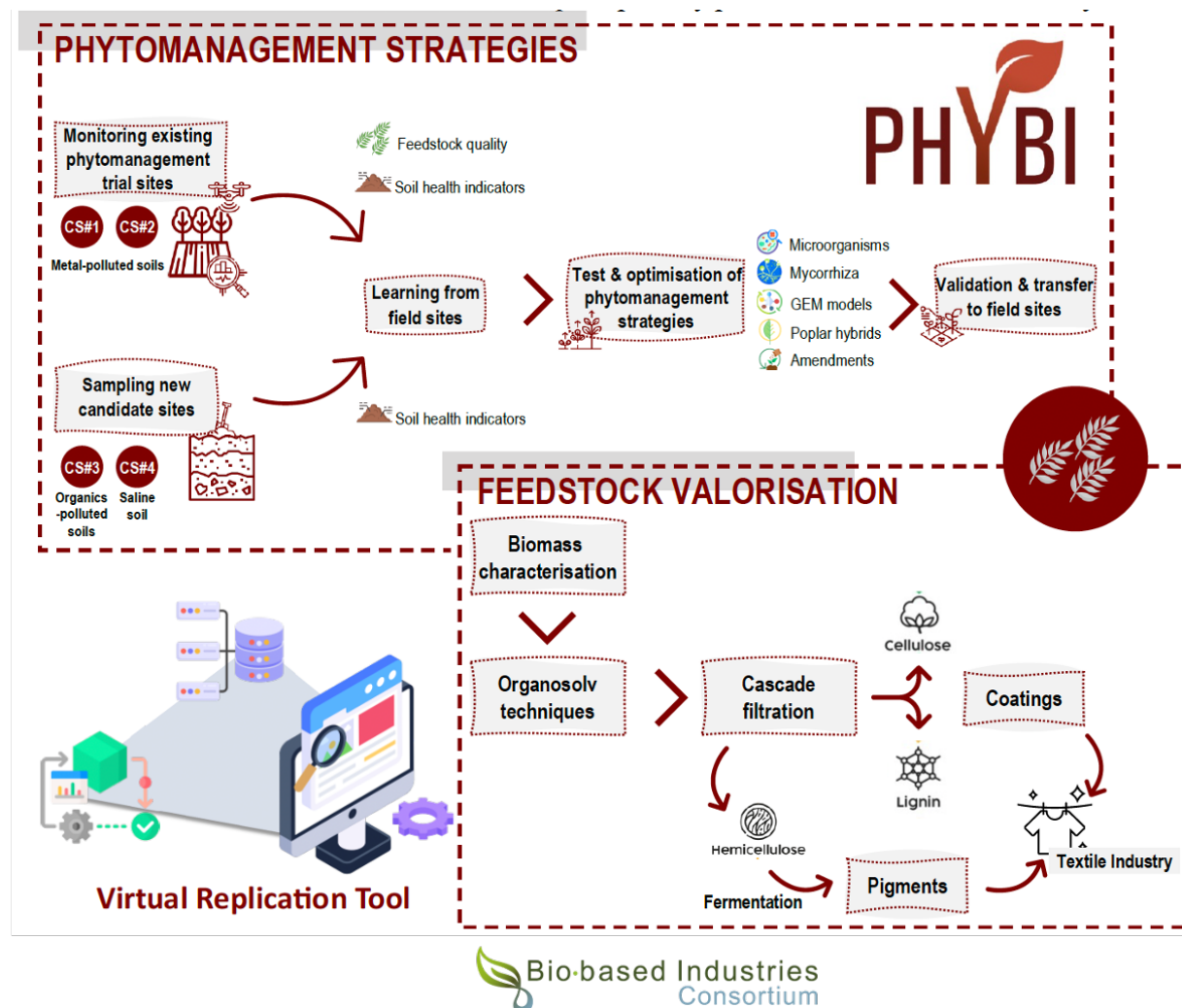
- HORIZON-JU-CBE-2023-R-01 Phyto-management; curing soil with industrial crops, utilising contaminated and saline land for industrial crop production
- RIA TRL 5

### Duration

- 4 year
- 2024 - 2028

### Partnership

- 11 partners
- 5 countries





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## Thank you!

Website: [mission-soil-platform.ec.europa.eu](https://mission-soil-platform.ec.europa.eu)



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