



# EU Horizon Projects Leading Soil Health Innovation.

States General for soil health - 4th edition -  
Circular bioeconomy and opportunities for  
soil regeneration.

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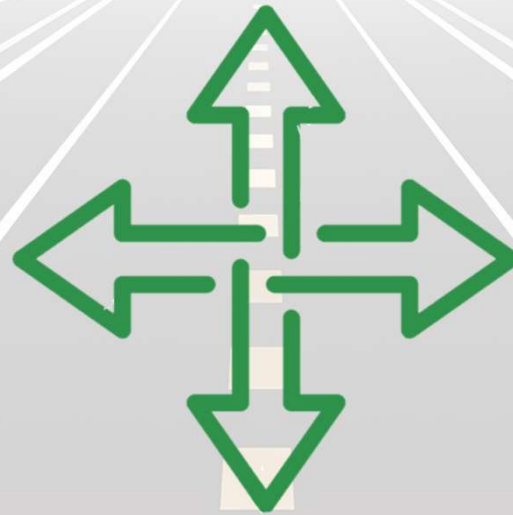
**Castillo-González H**<sup>1</sup>, Boisson Y<sup>1</sup>, Lebrun M<sup>1</sup>, Ciadamidaro L<sup>1</sup>, Zhou J<sup>1</sup>, Tatin-Froux F<sup>1</sup>, Parelle J<sup>1</sup>, Alexopoulou E<sup>2</sup>, Iordanoglou K<sup>2</sup>, Zegada-Lizarazu W<sup>3</sup>, Madejon E<sup>4</sup>, Madejon P<sup>4</sup>, Zgórska A<sup>5</sup>, Welters P<sup>6</sup>, Manier N<sup>7</sup>, Fabre S<sup>8</sup>, Gallego JR<sup>9</sup>, Mishra A<sup>10</sup>, Franco M<sup>10</sup>, Gil-Guerrero S<sup>10</sup>, Martos A<sup>10</sup>, Chalot M<sup>1</sup>.

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**ECOMONDO**  
The green technology expo.

# Europe at a Crossroads: From Degraded Land to Shared Prosperity

How can soil regeneration fuel the EU's Green Transition.



# Europe at a Crossroads: From Degraded Land to Shared Prosperity

How can soil regeneration fuel the EU's Green Transition?



**Soil  
Monitoring  
Law**



**60 - 70%**



**+50B/  
year**

# The Challenge: A Fragmented Approach.

- Policies fragmented across countries.
- Threats tackled separately.
- No holistic, multidimensional approach.





# A Solution: Cohesive, Integrated Solutions 🤝

From fragmented risk assessment to cohesive Nature-Based Strategy.



**ALL4BIOREM**  
Alliance for Environmental Bioremediation

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# Three Projects, One Mission

Distinctive  
Innovation Angles:  
Turning Liability into  
Prosperity



From  
contamina-  
ted land to  
sustainable  
feedstock  
for textiles.



Metabolic  
and meta-  
genomic  
modelling  
for  
pollutant  
removal.



Nature-  
based land  
rehabilita-  
tion for  
Europe's  
restoration  
market.



[edaphos.eu](https://edaphos.eu)

- Deployed in urban and peri-urban demo sites.
- Remote sensing tracks vegetation response to detect contamination hotspots.
- Phytomanagement with companion plants and soil amendments.
- Ecosystem services valuation for circular markets.



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[biosysmo.eu](http://biosysmo.eu)

- Computational design of synergistic biosystems: bacteria + fungi + plants.
- Targets mixtures of pollutants: heavy metals, organics, emerging contaminants.
- Applied to soil, sediment and water: expanding the soil-water nexus.

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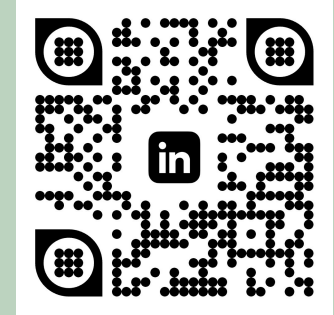
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[phybi.eu](http://phybi.eu)

- Applied to new and legacy contaminated sites.
- Industrial crops in degraded, polluted, or saline land.
- Lignocellulosic fibers via organosolv fractionation.
- Virtual Replication Tool to simulate and scale phytomanagement systems across Europe.



# From Soil Deal to Bioeconomic Value

Strategic Impact: Creating Tangible Levers for EU Policies



Evidence  
Based Policy  
Integration



Transforming  
liability into  
value.



Scalability &  
Replication



# A Regenerative Future for Europe



Sustainability  
& climate  
adaptation



Soil is the  
foundation of  
Europe's green  
transition.



Innovation &  
economic  
opportunities



Benefits for  
communities  
and landscapes

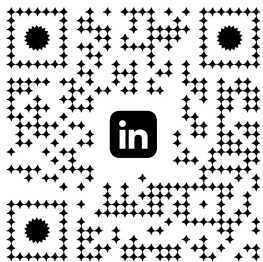




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Presented by Humberto Castillo-González

Université Marie & Louis Pasteur

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