

SOILCRATES Ireland

Joint co-creation session and communication event

Saturday, January 24

SOILCRATES-Ireland LL

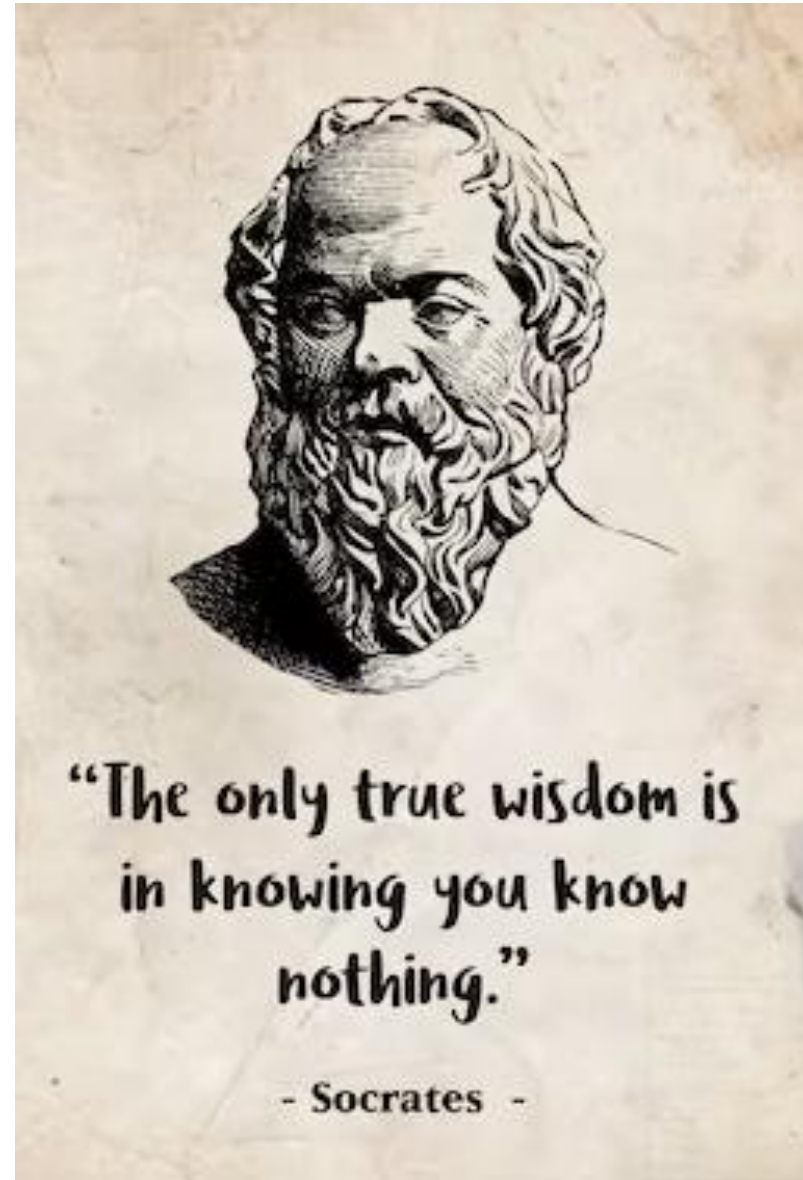
Dr Lena Madden



Funded by
the European Union

SOil Innovation Labs: Co-Regenerating And Transforming European Soils

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European consortium of SOILCRATES project

provinsje fryslân
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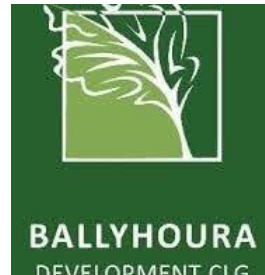


SOILCRATES Ireland



TUS

**Technological University of the Shannon:
Midlands Midwest**
Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir



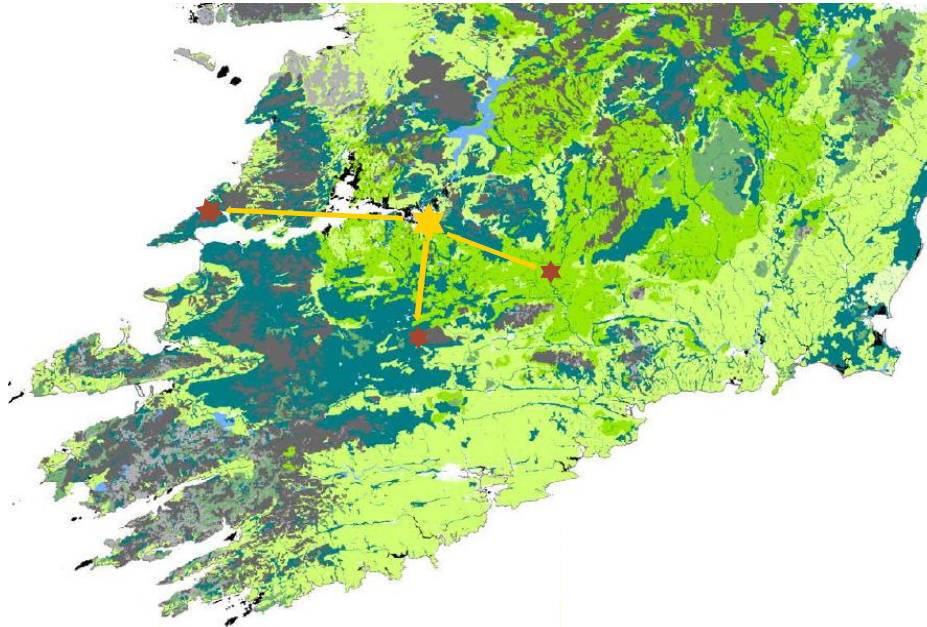
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LL activities in your region

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Divided equally between three counties with Main Location at TUS and branches at each social partner headquarters this will expand as the LL grows.

- 3 working groups – LL Co-creation, Technical, International consultation and knowledge exchange
- Monthly meetings of working groups
- On-line co-creation sessions
- Dissemination to partners and decisions on further actions.
- Bi-yearly consultations with governing bodies.
- Bi-yearly community events at all 3 locations
- Work in a background by TUS researchers on soil testing, assessments and AI.
- Demonstrations and field walks in the years 2, 3 and 4 - May - June
- Education program

Stakeholders and participants of LL – to date



Number and type of stakeholders involved and activities

Number and type of stakeholders involved

Light houses - 2

Local community organisations - 3

Academia - 2

Local and national government - 4

Agricultural advisory companies - 3

Novel fertilisers producers - 2

Agri-observatory companies - 1

Other companies - 3

Farmers - 123

165 in total 5 as the project beneficiaries

What was done to date

20 events held

<https://soilcratesireland.ie/events/>

Co-creation session, project preparation and much more

Future plans and partners to involve

Expanded of all stakeholder groups to **at least 100 ✓** and expansion to the Southern and Midlands regions of Ireland – on the way.

Other projects applications, i.e, SCEENE



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Soil challenge 2 – Compaction



- **Challenges – Soil compaction**

Poor drainage due to soil structure and use of machinery

- **Current solutions:**

- Drainage systems both deep and Shallow

- **Our solutions:** Depending on the soil/subsoil structure – combination of drainage and improvement of the top layer permeability through:

- **Cover cropping**
- **Thatch/compost**
- **Deep ploughing**
- **Biochar**
- **Circular solution**



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Soil challenge 1 – Overuse of Nitrogen



- **Problem** – Overuse of Nitrogen fertiliser. This results in low soil Ph, Disruption of the Nitrogen cycle and consequent biodiversity changes, eutrophication of waters.
- **Current solutions**
 - Liming,
 - Protected Urea
- **Novel approaches examples:**
 - Use of Biochar as a part of fertiliser
 - Multi-species swards, carbon sequestration into soil, mycorrhiza, etc.
 - Combination of several measures - circularity

Funded projects in Round 1

Practices to be tested

Round 1 funding allocated

9 projects in total

Total granted for RR1: 21 950€

Total granted for RR2: 191 800,12 €

Remaining for RR3/RR4: 186 249,88€

1. Crop rotation & **Cover crops**
2. **Cover crop** (nitrogen fixing) & **Biochar**
3. **Microbial bio stimulants** & Gypsum
4. **Biochar**; **Deep-Rooted Crops** & Deep Ploughing
5. **Intercropping** & Field Margins
6. **Microbial Bio stimulants** & **Compost**
7. High calcium minerals (marine-based soil enhancers)
8. **Microbial Bio stimulants** (KNF) & **Compost**
9. **Biochar** & **Deep-Rooted Crops**.



Pilot name (Coverchar2627 - IE RR2- App1)

Objective

- Restore and improve soil health through nature-based practices, by combining nitrogen-fixing leguminous cover crops like field beans, vetch and clover with biochar application to increase soil organic matter, enhance nutrient availability, improve soil structure, and support long-term carbon sequestration.
- Demonstrate sustainable, low-input horticultural systems, reducing reliance on imported organic fertilisers and synthetic inputs while improving soil fertility, crop performance, and the long-term economic resilience of the farm.
- Act as a SOILCRATES Living Lab Lighthouse and knowledge hub, using the farm as a teaching, learning, and dissemination platform through farm walks, Living Lab events, and community engagement to support peer-to-peer learning, replication, and wider adoption of soil-health practices.

Concept

The concept of the project is to restore degraded soils on an organic community farm by combining nitrogen-fixing cover crops with biochar as long-term soil amendments. These practices are used to improve soil structure, nutrient availability, microbiological activity, and carbon sequestration while reducing reliance on imported fertilisers. Implemented within the SOILCRATES Living Lab, the farm acts as a demonstration and learning hub, sharing results through education programs, farm walks, and community engagement to support wider adoption of sustainable soil-health practices



Pilot name (ICFM- IE RR2- App2)

Objective

- Improve soil health and fertility through intercropping, nitrogen fixation, and enhanced microbial activity.
- Increase on-farm biodiversity and reduce nutrient loss using field margins and buffer zones.
- Demonstrate and share sustainable, replicable farming practices through SOILCRATE S dissemination.

Concept

- Implement intercropping systems (pea–barley and bean–wheat) to improve soil structure and nutrient efficiency.
- Enhance soil health naturally through nitrogen fixation, organic matter build-up, and increased biological activity.
- Establish field margins to boost biodiversity and reduce nutrient runoff to waterways.
- Generate practical, results-based evidence to support sustainable and replicable farming practices via SOILCRATES



Pilot name (Crawford's Farm IE RR2- App3)

Objective

- Improve soil structure, biodiversity, and resilience in degraded organic grassland soils.
- Compare the effectiveness of solid compost versus liquid compost tea in enhancing soil biology and nutrient cycling.
- Increase plant biodiversity and improve forage quality and yield on a working organic farm.
- Share practical soil-health knowledge through the SOILCRATES Living Lab to support wider farmer learning and adoption

Concept

This project focuses on remediating degraded, certified organic soils previously under continuous tillage to restore productive, resilient grassland through biological soil amendments.

Using two comparable fields, the experiment evaluates and contrasts solid biologically complete compost and a liquid microbial bio-stimulant (compost tea) to understand their effects on soil biology, structure, nutrient cycling, and forage performance.

Delivered within the SOILCRATES Living Lab, the project combines farm trials, farmer engagement, and knowledge sharing to demonstrate practical, scalable soil-health practices for organic and small-scale farms.



Pilot name (Maximising Organic Potential IE RR2- App5)

Objective	• Restore soil structure and increase biological activity to improve long-term soil resilience. • Eliminate chemical fertilisers and sprays by strengthening natural nutrient cycling processes. • Improve grass productivity, nutrient retention, and water-holding capacity using biological and marine-based inputs • Demonstrate and share regenerative soil practices with other farmers through the SOILCRATES Living Lab and Lighthouse activities.
Concept	This project aims to enhance grassland soil health and productivity by applying marine-based soil enhancers and biologically treated cattle slurry to strengthen natural soil processes. By combining Physiolith, a calcium-rich marine amendment, and with slurry treated using Actiglène to boost microbial activity and nutrient availability, the project seeks to rebuild soil structure, improve nutrient and water retention, and eliminate reliance on chemical fertilisers. Delivered through the SOILCRATES Living Lab, the project integrates on-farm trials, soil monitoring, and farmer-led knowledge sharing to demonstrate practical, regenerative approaches to sustainable grass-based farming.

Pilot name (Biochar & Deep-Rooted plant for Decompaction IE RR2- App7)

Objective

- Improve soil structure, function, and resilience using a biochar–slurry blend and multispecies sward s.
- Reduce compaction, improve infiltration, and increase nutrient retention in contrasting grassland soils.
- Compare soil-improvement strategies side by side under shallow coastal and compacted field conditions.
- Generate practical evidence and share learning through the SOILCRATES Living Lab to support wider adoption.

Concept

This project evaluates the combined use of a biochar–slurry blend and multispecies grass swards with an increased proportion of deep-rooted chicory to improve soil structure, function, and resilience across two grassland fields with contrasting soil constraints.

By applying the same soil amendment under shallow coastal conditions and in a compacted, poorly drained field, the project enables side-by-side comparison of how biochar and deep-rooting species influence compaction, infiltration, nutrient retention, and root development.

Delivered through the SOILCRATES Living Lab, the experiment integrates farmer-led trials, standardised soil indicators, and knowledge sharing to generate practical, transferable evidence for soil-friendly grassland management.



Pilot name (Local Soil Fertility Solutions IE RR2- App9)

Objective

- Evaluate the effectiveness of Korean Natural Farming (KNF) inputs in stimulating soil biology and nutrient cycling.
- Improve soil fertility, structure, and resilience in grassland systems using low-cost, farmer-produced inputs.
- Increase grass yield, forage quality, and drought resilience through enhanced soil biological activity.
- Generate robust scientific data and share practical guidance through the SOILCRATES Living Lab.

Concept

This project tests Korean Natural Farming (KNF) practices as a low-cost, biological alternative for improving soil fertility and grassland productivity. By regularly applying farmer-produced microbial inputs such as Fermented Plant Juice (FPJ), Lactic Acid Bacteria (LAB), and Oriental Herbal Nutrient (OHN) the experiment aims to stimulate soil biology, enhance nutrient cycling, improve soil structure, and increase grass yield and resilience.

Delivered through the SOILCRATES Living Lab, the project combines rigorous field trials, soil biological monitoring, and strong stakeholder engagement to generate transferable, evidence-based guidance for regenerative grassland farming.



Pilot name (SoilMop IE-RR2-App13)

Objective

- Evaluate the effectiveness of microbial biostimulants and gypsum individually and in combination for improving soil health, plant health, and crop yield in grassland and arable systems.
- Assess the potential of these soil amendments to enhance nutrient use efficiency and reduce nutrient leaching under real farm conditions.
- Generate measurable soil health to support evidence-based decision-making for farmers.
- Educate and upskill farmers through Living Lab activities, demonstrations, and multispectral drone technology, fostering soil literacy and farmer-led innovation.

Concept

- SoilMop is a farmer-led, on-farm research project that investigates how microbial biostimulants and gypsum applied individually and in combination can improve soil health, nutrient retention, plant performance, and environmental resilience in both grassland and arable systems.
- Delivered through the SOILCRATES Living Lab, the project combines field trials, soil and crop monitoring, and multispectral drone technology with strong knowledge-transfer activities, enabling farmers to evaluate practical, scalable soil-health solutions while building soil literacy and encouraging wider adoption of sustainable, data-driven farming practices.



Pilot name (The Doonaha Fort Soil IE-RR2-App14)

Objective

- Restore acidic and compacted soils by improving soil structure, pH balance, and porosity through enriched biochar and decompaction practices.
- Increase soil organic carbon, microbial activity, and nutrient use efficiency to support long-term soil resilience.
- Combine mechanical subsoiling with deep-rooted multispecies crops to deliver both immediate and sustained reduction of soil compaction.
- Generate evidence-based, scalable regenerative soil practices through structured monitoring and Living Lab co-creation aligned with SOILCRATES and the EU Soil Mission.

Concept

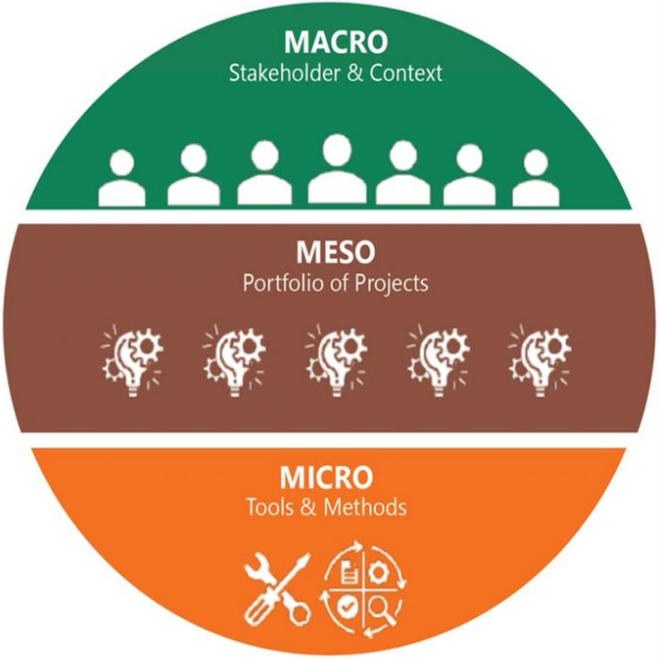
- The Doonaha Fort Soil Health project is a 24-month regenerative soil pilot aligned with the SOILCRATES Living Lab framework, focused on restoring acidic and compacted grassland soils through an integrated combination of enriched biochar application, deep rooted crops and soil decompaction through subsoiling.
- Biochar activated with bovine slurry is incorporated to enhance soil carbon, nutrient retention, pH stability, and microbial activity, while compaction is addressed through targeted mechanical subsoiling followed by biological regeneration using deep-rooted multispecies swards (including flax, barley, and chicory).
- Supported by baseline and twice-yearly soil monitoring and strong stakeholder co-creation, the project aims to generate robust, scalable evidence for improving soil structure, resilience, and long-term productivity in line with the Horizon Europe Soil Mission.



What future holds

- **Second round of applications – 25th of January**
- **Approval and final project design with SOILCRATES Ireland– February**
- **Sampling Campaign – March April**
- **General Assembly – 18th-21st of May - farm walks on the 19th of June in 3 counties, all welcome**
- **Soilcrates development as a living lab, governance, meetings, and communication**
- **Soil and field work**
- **Meetings and events**
- **More sampling**
- **Learning events and courses design**
- **Joint funding application**





	Frequence meetings	Participants teams	Main task teams
Core team	Every three months	Scientific director, LL coordinator, experts, farmers associations, researchers from knowledge institutes	Establish overarching vision of the region, deciding which proposed projects will be applied for
Project team	monthly	Scientific director, LL coordinator, lighthouse representatives	Planning and aligning the meetings, coordination of project proposals, disseminate knowledge
Lighthouse team	Depending on the stage of the project; monthly	Farmers, stakeholders, members of the project team,	Identify common problems, deepening content/knowledge, learning together, preparing project proposals

THANK YOU