



HuMUS Soil Steward Training Course

Mayte Gallego (FUNDECYT-PCTEX)

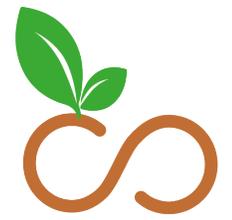
HuMUS Webinar: Soil Health Training

20 March 2024

Online (Zoom)



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Task Content

As indicated in the Project Proposal...

- We (the HuMUS Consortium) will developed a **Training Programme for Soil Stewards**.
- The training will be built in **3 phases/** stages:

PHASE 1	PHASE 2	PHASE 3
<ul style="list-style-type: none">➤ Development of the course in an Online Platform and based on the outputs of previous tasks.➤ Content provided by the HuMUS Partners.	<ul style="list-style-type: none">➤ Further development of the course with the integration of information related to 14 pilot sites in 8 European Countries (partners territories).➤ The course will be improved with the participants comments and suggestions.	<ul style="list-style-type: none">➤ Further development with more detailed information derived from the political, scientific and social contexts involved.➤ Information regarding the 20 Call for Proposals (Pilot Projects) will be also included within the course.

Soil Steward Course *Outline*



HuMUS
Healthy Municipal Soils

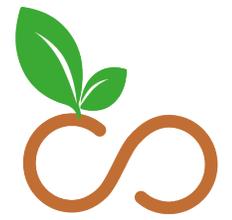
Why this course?

- European Soils are facing many and different **challenges** that need of an urgent reaction.
- Can we **act individually**? The answer is **NO**.
- We need to count on **public and private stakeholders** from all around Europe, who must be informed and engaged around this important issue: Soil Health.

Stakeholders that can guide others in this path.



Photo by krakenimages on Unsplash



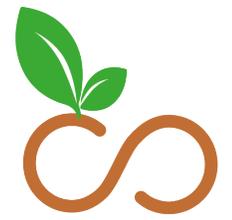
Soil Steward Course *Outline*

Main Objective

To provide *knowledge and tools mainly to civil servants - working at regional and/or municipal levels* - and enable them to become a Soil Steward

a person that carefully, responsibly, and voluntarily contributes to spreading her/his knowledge and experience regarding Soil Health.

Simultaneously, they would serve as an *advocate for raising awareness about soil health and care* within the local or regional community.

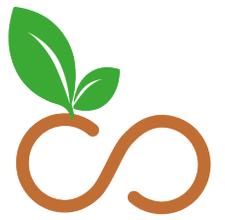


Soil Steward Course *Outline*

Other Objectives

- to ***deliver clear and concise information*** about the significance of soil, the concept of soil health, and relevant policies and practices, both ***at a general level and within the context of local/regional considerations***.
- ***to address the challenges stakeholders may encounter*** and explore potential means of support, encompassing financial aspects, stakeholder engagement, and the facilitation of interactions.
- to ***explore replication and transfer potential of the 14 pilot sites and the additional 20 pilots*** (identified via the Open Call for Proposals).

Soil Steward Course *Outline*



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Expected results

- ✓ to *create a next generation of Civil Servants* that may act as Soil Stewards and facilitators of *local dialogues* on Soil Health Management and Health improvement,
- ✓ using a wide range of *tools and methods* that the Course will provide to help guide the process.



Photo by Markus Spiske and Unsplash

Soil Steward Course *Outline*

Training Material

The Course will be *divided into 4 Modules* that address several relevant topics:

Module 1. What do we mean by Soil Health in general, principles, benefits of healthy soils and related European Strategies;

Module 2. Where do we start from to assess the soil health, which assessment methods exist to perform directly on site and demonstration of the relationship between soil health and other ecosystems;

Module 3. What is the state of the art of Participatory Soil Governance, including knowledge on tools to facilitate local dialogues, conflict management techniques and existing good practice examples, including evidence on local Living Labs and Lighthouses;

Module 4. What is the state of the art of regional and local policies on Soil Health, available funding opportunities, and guidelines to retrieve and apply for financial support.

Soil Steward Course

Training Material “aesthetics”

- In order to better define, identify and standardise the contents, we have created a ***Word and a PowerPoint templates for each of the modules.***
- When required, ***factsheets*** will be also available.
- Once the pilots are developed, we will create ***videos*** of each of them (with the same structure) and upload into the online Course.



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INTRODUCTION

MODULE 1

UNIT

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Actualizar tabla...

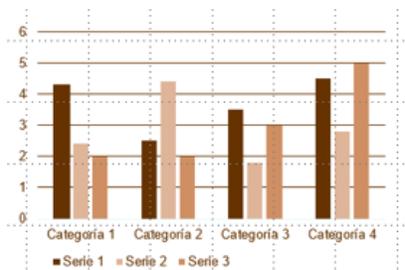
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INTRODUCTION

Haga clic o pulse aquí para escribir texto.



ADDITIONAL RESOURCES

Haga clic o pulse aquí para escribir texto.

LINKS TO EXTERNAL CONTENTS

	Title
	Link to the site
	Title
	Link to the site

RECOMMENDED READINGS

	Document Title
	Link to the site
	Document Title
	Link to the site





INTRODUCTION

MODULE 1

UNIT 1



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101091050. Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the EU nor the EC can be held responsible for them.

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INTRODUCTION

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- » Ut fermentum a magna ut eleifend. Integer convallis suscipit ante eu varius.
- » Morbi a purus dolor. Suspendisse sit amet ipsum finibus justo viverra blandit.
- » Ut congue quis tortor eget sodales.



HEALTHY MUNICIPAL SOILS
THE SOIL THAT NOURISHES US

2

2

Table

	Proveedores	Usuarios	Consultores	Compradores de anuncios	Ingresos brutos	Ingresos de la empresa
20AA	0	0	2	0	0 €	0 €
20AA	10	100	50	10	6750 €	1013 €
20AA	50	500	60	500	33 750 €	5063 €
20AA	200	2000	100	5000	135 000 €	20 250 €
20AA	400	4000	120	50 000	270 000 €	40 500 €

HEALTHY MUNICIPAL SOILS
THE SOIL THAT NOURISHES US

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Licenses



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HEALTHY MUNICIPAL SOILS
THE SOIL THAT NOURISHES US

Soil Steward Course

CAPACYT Platform

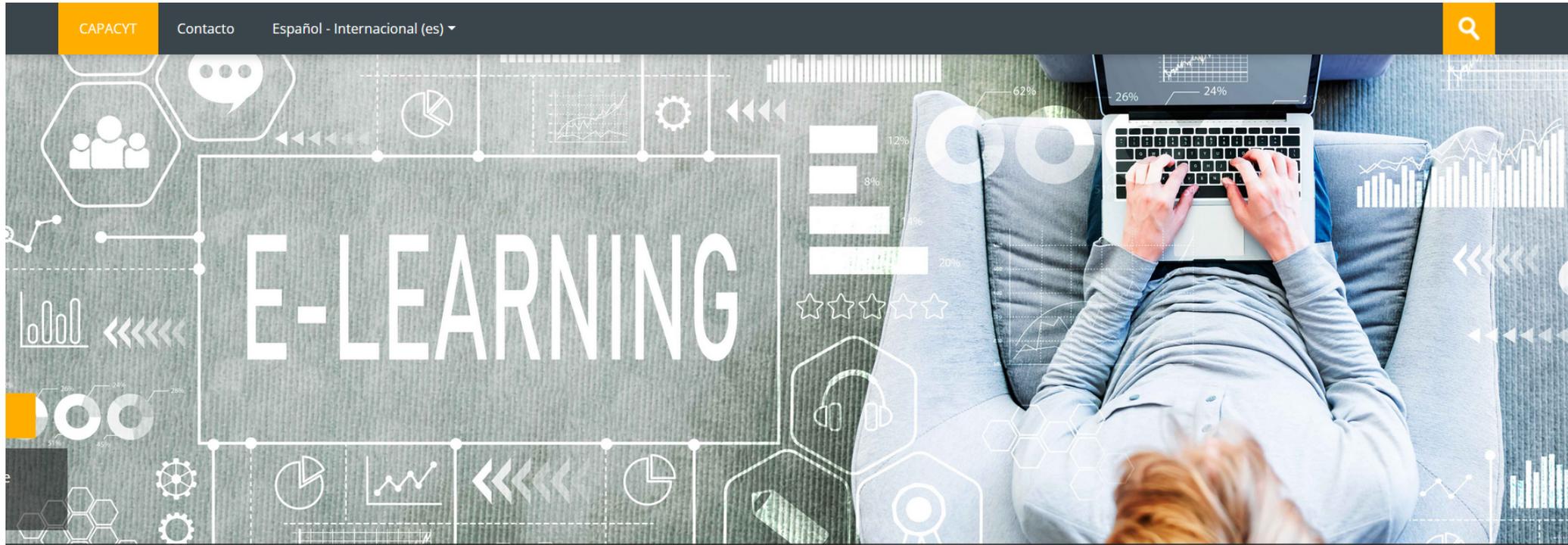
- We will use a ***FUNDECYT-PCTEX tool*** to host the course.
- ***CAPACYT*** aims to offer a service of access to training in areas such as science, technology, innovation, research and development.
- CAPACYT uses ***asynchronous online training tools*** together with specific and general actions that combine the experience of FUNDECYT in international, European, national and regional projects with the ***exchange of knowledge*** that we can obtain from institutions, organisations and companies.
- It is an ***Open and Free online tool***.



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CAPACYT

[¿Olvidó su nombre de usuario o contraseña?](#)



Plataforma de Capacitación Tecnológica de Extremadura

¿Quieres formarte en ciencia, tecnología, innovación, investigación y desarrollo? No pierdas la oportunidad.



Fundecyt-Pctex tiene como uno de sus fines la promoción de la I+D+i para los ciudadanos y empresas extremeñas, abarcando al SECTI y dentro del pacto por la ciencia y la tecnología en Extremadura. Capact pretende ofrecer un servicio de acceso a la capacitación de los sectores descritos, en áreas tan específicas como la ciencia, la tecnología, la innovación, la investigación y el desarrollo, para ello promovemos en formato formativo y mediante herramientas de formación online asincrónicas, acciones específicas y generales que combinan la experiencia de nuestra fundación en proyectos internacionales, europeos, nacionales y regionales con el intercambio de conocimiento que podamos obtener de instituciones, organismos y empresas que generalmente colaboran y forman la red del Parque Científico y Tecnológico de Extremadura.

Cursos disponibles



Programa de Innovación y Talento Plus (PIT+) 2023.

Fundecyt-Pctex forma parte de las entidades adscritas a la formación de la innovación y el talento para formar a sus trabajadores.

[Haga clic aquí para entrar al curso](#)



Programa DINA-ITC

El curso pretende promover en la comunidad científica la reflexión sobre el enfoque de sus líneas y objetivos científicos y cómo tener en cuenta las necesidades sociales en su definición.

[Haga clic aquí para entrar al curso](#)



SOSTENIBILIDAD E INNOVACIÓN EN AGRICULTURA ECOLÓGICA

Aprende los principios básicos de la ecología, la permacultura y cómo aplicarlos en el diseño de un sistema agroforestal sostenible.

[Haga clic aquí para entrar al curso](#)



SUSTAIN-PALS: Cómo elaborar y ejecutar planes de acción para aumentar el rendimiento de las empresas en materia de sostenibilidad*

[Haga clic aquí para entrar al curso](#)



SUSTAIN PALS: Cómo elaborar y ejecutar planes de acción.

El objetivo del curso es el de: "Aprender a elaborar y ejecutar planes de acción a partir del diagnóstico de nivel de sostenibilidad de la empresa. La



Sustains Pals: El modelo de negocio canvas

La conciencia para abordar la base no sostenible de la actividad económica actual está aumentando rápidamente entre las empresas. La sostenibilidad



SUSTAIN- PALS curso dos Alianzas estratégicas, oportunidades y beneficios del desarrollo sostenible

A través de este curso conocerás las alianzas estratégicas, las oportunidades y los beneficios del



SUSTAIN- PALS curso uno Tendencias futuras y estrategias empresariales sostenibles

A través de este curso conocerás como integrar los Objetivos de Desarrollo Sostenible a la estrategia empresarial de cara a mejorar la sostenibilidad.



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Soil Steward Course

How will we do it?



Soil Steward Course



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Timing

- ***Contents of Phase 1*** will be made public on the CAPACYT Platform by ***April 30***.
- We will **announce** it through our webpage and other channels.
- The ***link*** to the course will be on the ***HuMUS webpage***.

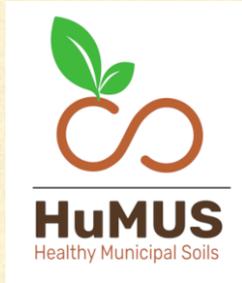


Photo by Samantha Borges on Unsplash

Thank you!



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SOIL HEALTH FROM AN EDUCATIONAL AND CITIZEN PERSPECTIVE

Manuel Pulido Fernández

Universidad de Extremadura, Spain



Funded by
the European Union

Questions:

1. Who am I?
2. What **ECHO** is?
3. What does **soil health** mean?
4. Why **education** on soil health is important?
5. Why scientists need **regular citizens** interested in soil health?



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- Geographer (PhD, 2014)
- **Teaching:** Physical Geography
- **Research:** Soil Health Indicators
- Responsible of WP2 (**ECHO**): app, tools, etc.
- Pilot ambassador (**AGROMIX**): farmers
- Participatory activities (**GANAWA**): focus groups

Engaging citizens in soil science: the road to Healthier sOils (ECHO)

- Grant Agreement ID: 101112869
- **Time:** 1 June 2023 – 31 May 2027
- **Money:** ≈**5,3 M EUR**
- Coordinator: Tanja Mimmo (UNIBZN, Italy)
- 16 partners (academia, companies, etc.)
- Website: <https://echosoil.eu>

28

taylor-made **citizen science initiatives** across EU Member States

16,500

sites in different climate and biogeographic regions assessed

TOOLBOX

Citizen Science Toolbox - a free resource including open access field guidelines, protocols and forums

ECHOREPO

a long-term open access repository with a direct link to the EUSO (The EU Soil Observatory)



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Soil health



Citizen



ECHO Citizens



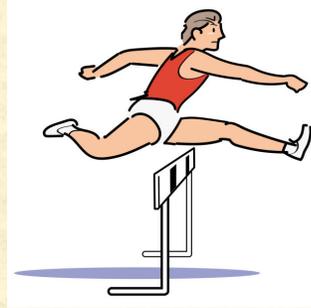
Soil degradation

Soil health: “the capacity of a specific kind of soil to function, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation” (NRCS, USDA)

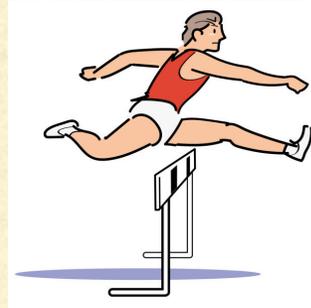
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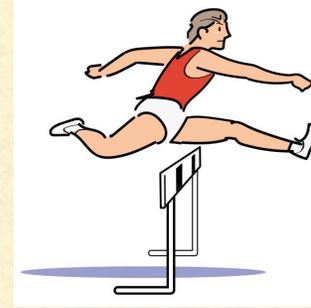
H1 - Dimensionless



H2 - Indicators



H3 - Sampling



H4 - Analysis



H5 - Interpretation

ECHO provides 8 indicators, included in a toolbox developed on an app with instructions, to be determined on-site and off-site

INDICATOR	APPROACH
Pollutants: heavy metals, plastics, etc.	Instructions for shipping (handbook)
Percentage of soil organic matter	Colour grid
Soil structure	Spade test
Soil biodiversity	Instructions for shipping (handbook)
Soil pH	Stripes
Vegetation cover	GPS Coordinates Illustrative pictures
Landscape heterogeneity	
Forest cover	



- **ECHO** is preparing **specific initiatives and learning materials** focused on kids (school and high school)
- Our main goals are to **raise awareness** and to increase **soil literacy**
- **Soil health** should be a concept to be worked in class with the same importance than **climate change**
- Kids need to be in touch with their **surrounding landscapes**

Education



Citizens

- **ECHO** is preparing many **specific initiatives** and **learning materials** focused on regular citizens
- Our main goals are to **raise awareness** and to increase **soil literacy**
- **ECHO** is engaging citizens to participate in research and educational initiatives: soil sampling, data collection, shipping samples, etc.
- **ECHO Repo** will be composed by data from **16,500 sites** in which regular citizens have collected samples

Conclusions:

1. **ECHO** will provide skills on soil health to many citizens (including kids)
2. ECHO app, repository and materials will be useful after the project life
3. We must raise awareness about the importance of soil health
4. Soil health should be studied at the school and high school
5. The participation of regular citizens in research activities will increase the number of data and spatial representativeness



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RE SOIL FOUNDATION

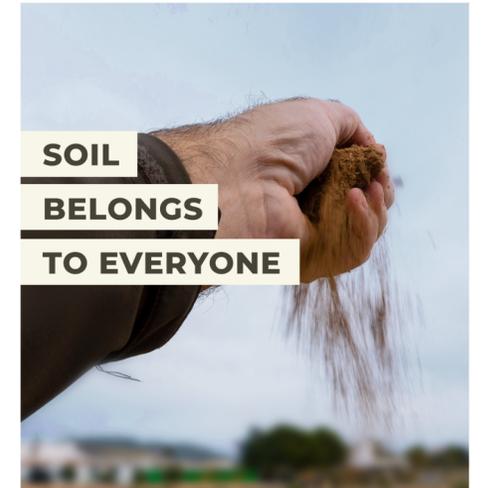
Regeneration for a clean and healthy soil.





RE SOIL FOUNDATION: TO PROTECT ONE OF OUR PLANET'S MOST IMPORTANT NATURAL RESOURCES

Promoted by **University of Bologna, Coldiretti, Novamont and Turin Polytechnic**, Re Soil Foundation works with the aim to enable a step change in soil health and local regeneration.



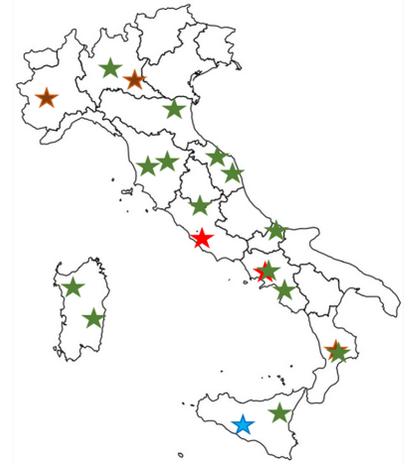


RE SOIL FOUNDATION: MISSION AND GOALS

1. Promote soil health in Italy and Europe, in synergy with the Mission «A Soil Deal for Europe»



3. Promote the connection between agriculture and research, support the development of living labs e lighthouse farms



2. Education, communication, dissemination, soil literacy improvement



4. Policy shaping and advocacy



PRIORITÀ PER LA RIGENERAZIONE DEL SUOLO

- **Stakeholder engagement:** è necessario mettere a si e lavorare in sinergia per portarle sui territori attraverso l'armonizzazione delle diverse iniziative in corso e la raccolta e analisi dei dati. Occorre individuare iniziative che favoriscano l'adozione di sistemi di monitoraggio.
- **Dati e sistemi di monitoraggio:** vanno potenziati e raccolti. Occorre individuare iniziative che favoriscano l'adozione di sistemi di monitoraggio.
- **Agricoltura:** occorre riposizionare l'agricoltura all'interno della bioeconomia, promuovendo il ricorso a buone pratiche della risorsa suolo, ad esempio sistemi di allevamento biometano a partire dai reflui zootecnici, utilizzo di...



RE SOIL FOUNDATION
Regeneration for a clean and healthy soil.





SOIL: A VITAL AND UNDERVALUED RESOURCE

SOIL LITERACY IS CRUCIAL TO IMPROVE SOIL PROTECTION



Quality education and **training** based on a **holistic approach** are key elements



A transdisciplinary approach that connects scientific, technologic, economic and humanistic competencies is essential



Local and practical projects need to be promoted and shared





INITIATIVES FOR STUDENTS - SOILAB

7000 downloads

RE SOIL FOUNDATION
Preoccuparsi per la terra non è mai stato così facile.

SOILAB
IL MONDO NASCOSTO SOTTO I NOSTRI PIEDI

conoscere i segreti del SUOLO per difenderlo

Come è fatto?

Il suolo è costituito per metà del suo volume da una miscela porosa. I pori sono vitalità per il suolo: sono per metà pieni di acqua e per metà pieni d'aria, sebbene la percentuale possa variare enormemente secondo la **testatura del suolo**, il suolo delle radici, l'uso che le piante fanno dell'acqua e il clima.

La sua composizione è apparentemente semplicissima, a base di **sostanze inorganiche** (quella contenenti carbonio), **aria, acqua e vita** (componente biologica).

Mediamente, il 45% del suolo è composto da tre minerali: **sabbia, argilla e limo**. Una pasta base composta da granuli non più grandi di 2 mm di diametro. Sopra questa soglia parliamo di ciottoli o ghiaia (Superiore ai 2 mm di diametro) che i pedologi chiamano "scheletro" dei suoli.

Quando lo scheletro è un componente importante nel suolo significa che la **quantità di pietre e sassi è notevole** e questo è un indicatore di **scarsa qualità agronomica**. Al contrario un suolo senza scheletro, come è quello delle fertili pianure, è molto adatto alla produzione agraria.

LETTERIERA (foglie, fienami, ecc)

Orizzonte O
"in pedologia gli strati di suolo si chiamano orizzonti"

HUMUS (decomposizione letteriera)

STRATO MINERALE (granuli biociclici) **Orizzonte A (topsoil)**

STRATO DI ROCCIA SREYOLATA (sostanze minerali compatte) **Orizzonte B (sottosuolo)**

ROCCIA MADRE **Orizzonte D**

Architettura del suolo (5 orizzonti)

Curiosità: I granuli che compongono la sabbia sono più grandi, quelli dell'argilla più piccoli, quelli del limo sono di grandezza intermedia. La differenza di dimensione tra i tre granuli è paragonabile, in una scala molto più grande, a quella che c'è fra una foglia (sabbia), un pannello (limo) e una moneta (argilla). L'acqua si muove in acqua e i minerali le sabbia il fango passare.

Composizione media dei suoli

- 5% materia organica
- 25% aria
- 25% acqua
- 45% minerali

Curiosità: La sabbia (2, 6 e 8) rappresenta i fenomeni naturali aggravati da cattivi comportamenti dell'uomo e dai cambiamenti climatici.

Le 8 minacce al suolo

- sigillatura o impermeabilizzazione**: compromettono la capacità del suolo di farsi attraversare dall'acqua e di trattenerne buona parte una volta che un suolo viene coperto (edifici, strade). Si smette per sempre di assorbire acqua! Ma nel frattempo non smette di piovere.
- erosione**: 24 miliardi di tonnellate di suoli fertili ogni anno, nel mondo, scompaiono per gli effetti naturali di vento, acqua corrente, ghiaccio e gravità. L'uomo può aggravare l'erosione: ad esempio disboscando.
- impoverimento materia organica**: il livello di carbonio nel suolo deve mantenere entro certi livelli, diversi a seconda se si tratta di un suolo sabbioso, limoso o argilloso. Erosione, deforestazioni, trasformazioni e usi agricoli eccessivi, riducono il livello di carbonio nel suolo fino a provocarne la morte.
- perdita biodiversità**: la perdita di sostanza organica o la contaminazione di un suolo con sostanze estranee e tossiche, anche solo per qualcuno della specie che vi vivono, può spazzare via coloro e dunque l'interscambio di acqua e carbonio. La compattazione è, al contrario dell'impermeabilizzazione, reversibile.
- contaminazione e inquinamento**: una proprietà dei suoli è la porosità, che li rende capaci di assorbire acqua, ma allo stesso modo anche altri liquidi inquinanti prodotti dall'uomo. I suoli contaminati diventano inerte per le produzioni agrarie perché gli inquinanti possono essere assorbiti dalle radici delle piante.
- salinizzazione**: l'eccesso di sali uccidono il fimo, minacciano la produzione alimentare. Si tratta di sale comune (NaCl) ma anche di sali di calcio, magnesio, solfati e altri prodotti. Oltre agli apporti naturali, il sale può giungere nel suolo attraverso l'irrigazione e l'abusivo, in agricoltura, dei fertilizzanti.
- frane, smottamenti, colate fangose, scioglimenti e distacchi**: si tratta degli effetti del rischio idrogeologico che producono perdita di suolo fertile, aggravati da trascuratezza di alcune aree agricole e a pascolo, dall'imboschimento di aree con ridotta profondità pedologica, dalla realizzazione di infrastrutture e edifici dove non si dovrebbe.
- Le minacce verdi (2, 6 e 8)** rappresentano fenomeni naturali aggravati da cattivi comportamenti dell'uomo e dai cambiamenti climatici.

Una risorsa non rinnovabile la cura del suolo è la cura della vita

33% Il 33% dei suoli globali è oggi degradato (fonte FAO).

30/34% Il 24% della superficie europea è soggetta a erosione e i terreni produttivi si riducono di 1000 km² ogni anno a causa dell'impermeabilizzazione.

Il 30% delle aree urbane e il 34% della popolazione urbana si trovano già in regioni aride e nei prossimi quarant'anni si prevede che il 40% della popolazione globale delle risorse raddoppierà.

Il suolo è una risorsa non rinnovabile e fondamentale per la vita sulla Terra. Dato che occorrono più di 2000 anni per formare 10 cm di terreno fertile, nel corso della propria esistenza, ognuno di noi assiste alla crescita di poco meno di 0,4 centimetri di suolo.

Negli ultimi due secoli, il carbonio organico del suolo ha registrato una perdita stimata dell'8% a livello globale.

-8%

Lo stadio finale dei danni, naturali e antropici, al suolo è la **DESERTIFICAZIONE**: la prima fase inizia con la distruzione dello strato superficiale e della sua fertilità, la seconda fase favorisce l'erosione e rende difficile il ripristino della fertilità. La terza fase è la desertificazione che impedisce, per lungo tempo o in modo irreversibile, la ricostituzione.

Il suo degrado rappresenta una minaccia per la nostra vita e i cambiamenti climatici possono accelerare questo processo con importanti impatti a livello ambientale, economico e sociale su tutto il Pianeta.

Agire per il suolo

Cosa possiamo fare noi? Alcuni suggerimenti...

Cercati con un pollice verde: Nel giardino, nel fienile, per le piante sul balcone e in casa, scopri che tipo di fertilizzante, compost o semi sono utilizzati e di ai tuoi "giardinieri ideati" di creare prodotti sostenibili.

Contribuisci a piantare più alberi: Sostieni, nella tua comunità o scuola, le campagne per piantare alberi, se non ce ne sono, iniziarli tu!

Mangia meglio!: Diversifica le tue abitudini alimentari, e osszando a dieta più salutare che potrebbero consentirti di risparmiare milioni di litri di terreni agricoli di migliorare la nostra salute, quella dei suoli e di ridurre le emissioni di 0,7/0,8 t di CO₂ equivalenti.

Acquista prodotti biologici e a chilometro zero: Scegli di acquistare frutta e ortaggi siccittati come biologici, possibilmente coltivati vicino a casa. Nel tempo, questo significherebbe un minor uso di pesticidi e fertilizzanti artificiali, minori colture ad alto rendimento che danneggiano la biodiversità del suolo.

Prodotti meno rifiuti: Acquista responsabilmente, producendo così meno rifiuti alimentari. In Europa i rifiuti alimentari rappresentano 80 milioni di tonnellate/anno, rappresentando circa il 20% del cibo totale prodotto.

Fai la raccolta differenziata del rifiuto organico e a casa, a scuola, in massa, prestando attenzione a separare bene i rifiuti in modo tale che il compost riassume tutti di questi.

Spargi la voce: Parla con i tuoi insegnanti, genitori, amici, persino agricoltori locali... per diffondere il messaggio sull'importanza del suolo e su come conservarlo. Più diffondiamo consapevolezza, più possiamo fermare la distruzione del nostro prezioso pianeta!

Curiosità: Se noi umani consumiamo 2,2 cm ogni 500 anni come è suolo, ci vorrebbero 36000 anni prima di averne, ad esempio, l'abbazia di san Pietro.

Dai rifiuti organici al terriccio fertile

Dai rifiuti organici o "umidi" (gli scarti che derivano dalle abitazioni, dai ristoranti/bar, mensa e mercati) si possono ricavare **biogas e compost**. Il compost è un fertilizzante biologico con cui è possibile sostituire prodotti di sintesi e migliorare la qualità dei suoli. Del processo di compostaggio si occupano in Italia 280 impianti.

Il "tempo di qualità" in agricoltura permette la manutenzione e il mantenimento della fertilità del suolo e la disinquinazione dell'atmosfera. Per ogni kg di rifiuto organico in quanto tale (73% di acqua) "sottostato" alla discarica e recuperato biologicamente è possibile trattenere 1,4 kg di CO₂ equivalente.

In Europa i rifiuti organici prodotti in città sono circa 96 milioni di tonnellate, di cui il 66% non è recuperato. L'Italia, raccogliendo il 47% contro il 16% della media europea, è però al primo posto in Europa per il riciclo del rifiuto alimentare. Ma sono necessari altri impianti di compostaggio industriale per poterlo trattare.



INITIATIVES FOR STUDENTS - EVENTS

Terra madre



Science Festival





INITIATIVES FOR STUDENTS





INITIATIVES FOR TEACHERS

Workshop series

evento organizzato a sostegno di
PREP SOIL
Funded by the European Union

elementi di didattica per insegnare il suolo: la fabbrica della vita

cibo, cambiamenti climatici, biodiversità, bioeconomia circolare

Transition2Bio is a two-year project funded by the European funding programme for research and innovation Horizon 2020 under Grant Agreement No. 101000029

Contest

Bioeconomy4YOU

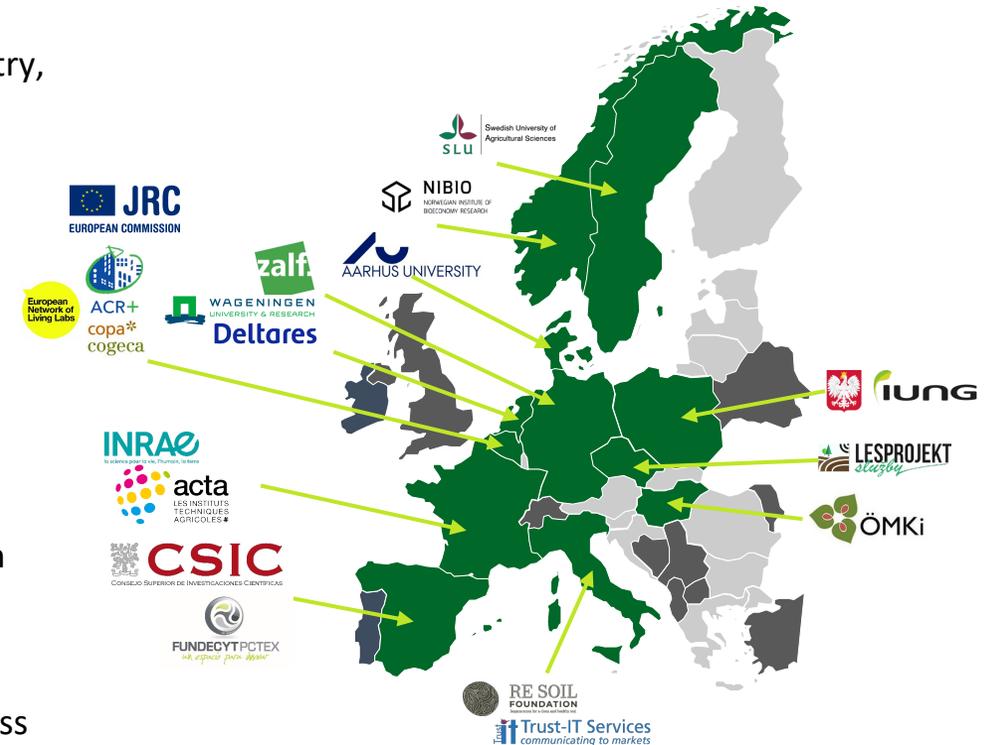
Concorso per le scuole primarie, secondarie di primo e secondo grado e per docenti

AMBASCIATORI della BIOECONOMIA

SPRING RE SOIL FOUNDATION Fondazione Raul Gardini. APRE transition2bio NOVAMONT

CSA: Preparing for the ‘Soil Deal for Europe’ Mission – Preparing the ground for healthy soils: building capacities for engagement, outreach and knowledge

- To evaluate soil needs in regions of Europe across different soil use types (Agriculture, Forestry, Urban, post-industrial, ..)
- To organise the expansion of EJP SOIL Hubs to broader Soil Health National Hubs
- To define model business plans for LL and LHs
- To map current and emerging LL and LH to promote networking and knowledge exchange
- To develop and launch a web portal to support networking, knowledge exchange and availability
- To generate spaces for knowledge exchange, capacity building and cross-regional connection
- To connect and promote exemplary education and social initiatives, and soil ambassadors
- To pave the path towards harmonised, standardised soil monitoring and data collection across the EU
- To explore the incorporation of EO and citizen observatories data in soil monitoring





PREPSOIL INITIATIVES - Soil literacy and good examples on soil education for youth



OPEN CALL
Best Teaching Practices in Soil Education in Primary & Secondary Schools

DEADLINE
25 January 2023


prepsoil.eu

 Funded by the European Union



Raising Soil Awareness among Austrian Pupils and Students

In order to raise awareness and understanding of the importance of soil, ASSS, the Austrian Soil Science Society

School: Environment Agency Austria and more (see text),

Teacher: Barbara Birlì



Foligno (Perugia), Italy

Carbon Cycle, Soil and Biodiversity within Italian students

The aim of the project was to explore soil-related topics, a subject that is scarcely or not at all present in the Liceo

School: Liceo Scientifico e Artistico G Marconi, **Teacher:** Stefania Minelli



The vital soil

At Naturskolan (The Nature School) in Lund, we have taught about soil using outdoor pedagogy. At the Nature school, we

School: Naturskolan, **Teacher:** Carolina Lindeblad

THANK YOU!

www.resoilfoundation.org

info@resoilfoundation.org

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**RE SOIL
FOUNDATION**

Regeneration for a clean and healthy soil.





LOESS

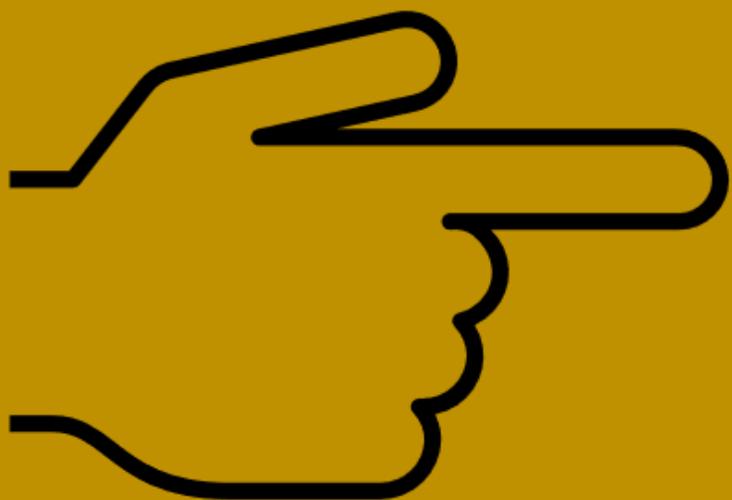
LITERACY BOOST THROUGH AN OPERATIONAL EDUCATIONAL
ECOSYSTEM OF SOCIETAL ACTORS ON SOIL HEALTH

HUMUS WEBINAR-SOIL HEALTH TRAINING

20.03.2024



LOESS Project has received funding from the European Union



HORIZON-MISS-2022-SOIL-01-07

Foster soil education across society

1 project funded

- teaching programs and targeted communication, education and engagement materials on soil are more widely available;
- higher uptake and diffusion of good practices and hands-on activities related to soil education;
- soil literacy is more firmly embedded in educational curricula at all levels and supports the adoption of sustainable practices;
- increased awareness of the importance of soil and its functions, as well as of the Mission objectives, amongst pupils, students and professionals across Europe.



LITERACY BOOST THROUGH AN OPERATIONAL EDUCATIONAL ECOSYSTEM OF SOCIAL ACTORS ON SOIL HEALTH -LOESS



Project Time: 1 June 2023 – 31 May 2026

EU contribution €: 5.462.932,50

Coordinator organization: Wissenschaftsladen
Bonn, Norbert Steinhaus

Mission Specific Objectives covered:

Improve soil literacy in society

Mission Operational Objectives covered:

Engage with the soil user community and society
at large





A PROJECT TO INCREASE SOIL LITERACY

WE ALL NEED TO UNDERSTAND HOW SOILS IMPACT
OUR LIVES

WHAT IS LOESS? WHY IS LOESS?

EU Missions are a new way to bring concrete solutions to some of our greatest challenges. They have ambitious goals at delivering concrete results by 2030. In this context,

LOESS is being funded by the Mission 'A SOIL DEAL FOR EUROPE'.

LOESS focuses on increasing *soil literacy* via developing *educational offers and continuous training program* as well as *skills development activities* addressing multiple actors, stakeholders and target groups connected to 'SOIL EDUCATION'

Soil is an indispensable ally for climate change mitigation and adaptation, that is why people need more than *scientific information*, we all need to understand *HOW HEALTHY SOILS IMPACT OUR LIVES!*



PROJECT

ACTIVITIES-1

- ❖ Mapping of existing soil-related materials and educational programs and identification of educational needs;
- ❖ Engagement and connection of stakeholders in Communities of Practice-CoP in 15 European countries;
- ❖ Co-creation and piloting of new courses, teaching modules, educational materials and learning tools for soil education for use in primary and secondary schools as well as universities and vocational colleges;
- ❖ Hands-on engagement activities related to soil education through community projects involving students and local communities;

PROJECT ACTIVITIES-2

- ❖ Development of an augmented reality application; and crowd mapping to identify, visualize and address local soil problems.
- ❖ Development of a toolkit of soil education and training materials and resources based on existing good examples as well as new ones developed by LOESS;
- ❖ Campaigns and dissemination activities aimed at schools, universities and members of the public;
- ❖ Engagement with policymakers and lobbying for the advantages of integrating soil-related activities into formal education.

WHO IS LOESS? WHY LOESS?

The LOESS project

- is coordinated by *Wila Bonn Science Shop* (Germany)
- involves *20 partners in 16 different countries*
- includes *universities, a public research institute, NGOs, VET centers, science engagement organizations and a digital tool company*, each contributing different knowledge, skills and networks.

Each consortium partner will lead a *Community of Practice* (CoP). **CoPs** are relevant actors like soil experts, behavioral scientists, specialists in pedagogy, in education, and in communication, policy makers as well as soil dependent business representatives, interested communities and citizen's organizations. LOESS will put multi-actor panels in place to support *the identification and mapping of training resources* and needs and to help co-create new modules to bridge identified gaps in the field of soil literacy.



Key exploitable results and outputs

- ❑ Crowd Mapping Tool to identify and address local soil problems
- ❑ Methodology and guidelines for Community Engaged Research and Learning (CERL) in HEI and online module
- ❑ Action Plans for Campaigns
- ❑ Atlas of Soil Education (Yellow Pages), Case Studies, Needs and Visions
- ❑ Training modules and courses for schools and HEIs
- ❑ Augmented Reality (AR) application with 3D models, animations, simulations and interactive parts



Potential areas of synergies /



loess-project.eu

TYPE	PROJECTS
Preparatory action	PREPSOIL
Living lab support structure	SOILL
Carbon farming	CREDIBLE
Soil pollution and restoration	ARAGORN , EDAPHOS , ISLANDR
Soil biodiversity	SOB4ES , BioServices
Circular economy solutions	DELISOIL , WASTE4SOIL , BIN2BEAN , FENIX , SOILUTIONS
Business dimension	INBESTSOIL , NOVASOIL , SOILVALUES
R&I supporting mission objectives and knowledge management	SOIL O-LIVE , SOLO , SOILWISE
Living labs and lighthouses	NATIOONS
Monitoring	BENCHMARKS , AI4SOILHEALTH , MARVIC , MRV4SOC
Citizen engagement	HUMUS , NB SOIL , ECHO , LOESS
Soil Literacy	CURIOSOIL

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THANK YOU



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**ANS Education & Consultancy
Türkiye**

ANS
Eğitim ve Proje Danışmanlık



Farmland for public good?

Local authorities take action to enable access to land for agroecology and regenerative farming

Alice Martin-Prével, Access to Land Network & Terre de Liens

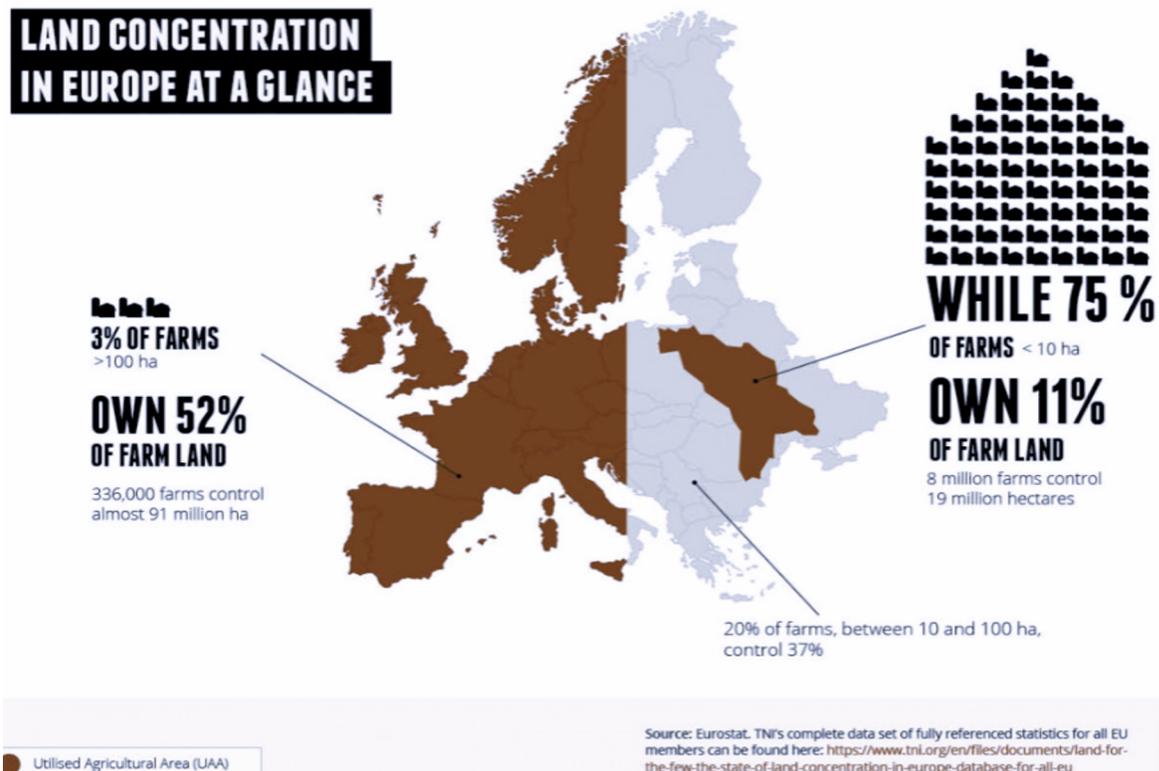
Agroecology to steward land & preserve soils in Europe

- Farms use nearly 40% of the EU's total land area > agriculture is closely linked with soil health

- Many drivers of soil degradation are linked to **intensive agricultural practices** (monocultures, chemical inputs, machinery...). Today a few large companies (3,3% of farms) own over half of EU's farmland.

- On the other hand, **agroecology corresponds closely with a philosophy of land stewardship**, making **healthy soils allies** to maximize water infiltration, improve nutrient cycling, save money on inputs, and improve farm resiliency.

LAND CONCENTRATION IN EUROPE AT A GLANCE



Worldwide « rapid expansion and unsustainable management of croplands and grazing lands is the most extensive global direct driver of land degradation » (IPBES 2018)

Why local authorities?

- **Witnesses** of changing land, food, and ecological systems
- **Dual pressures to act** (from citizens & national or international levels)
- Land as a **catalyzer** for local development, resilience, and sustainable transitions
- A variety of **levers** to act, depending on national contexts

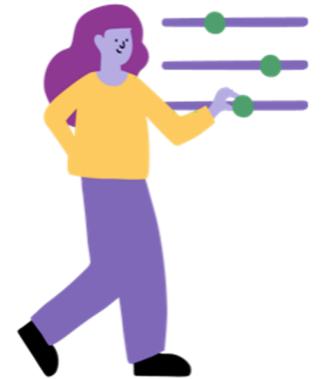


Levers of local authorities



- **Acting as a landowner:** use public land in exemplary ways to produce the food we eat and improve the quality and diversity of our local environments

- **Acting as a facilitator:** use the legitimacy and convening power of local authorities to involve more people in land governance



- **Acting as a regulator:** leverage the land-use planning system, control over land access rights, taxing, or other regulations to improve land systems



Acting as an owner



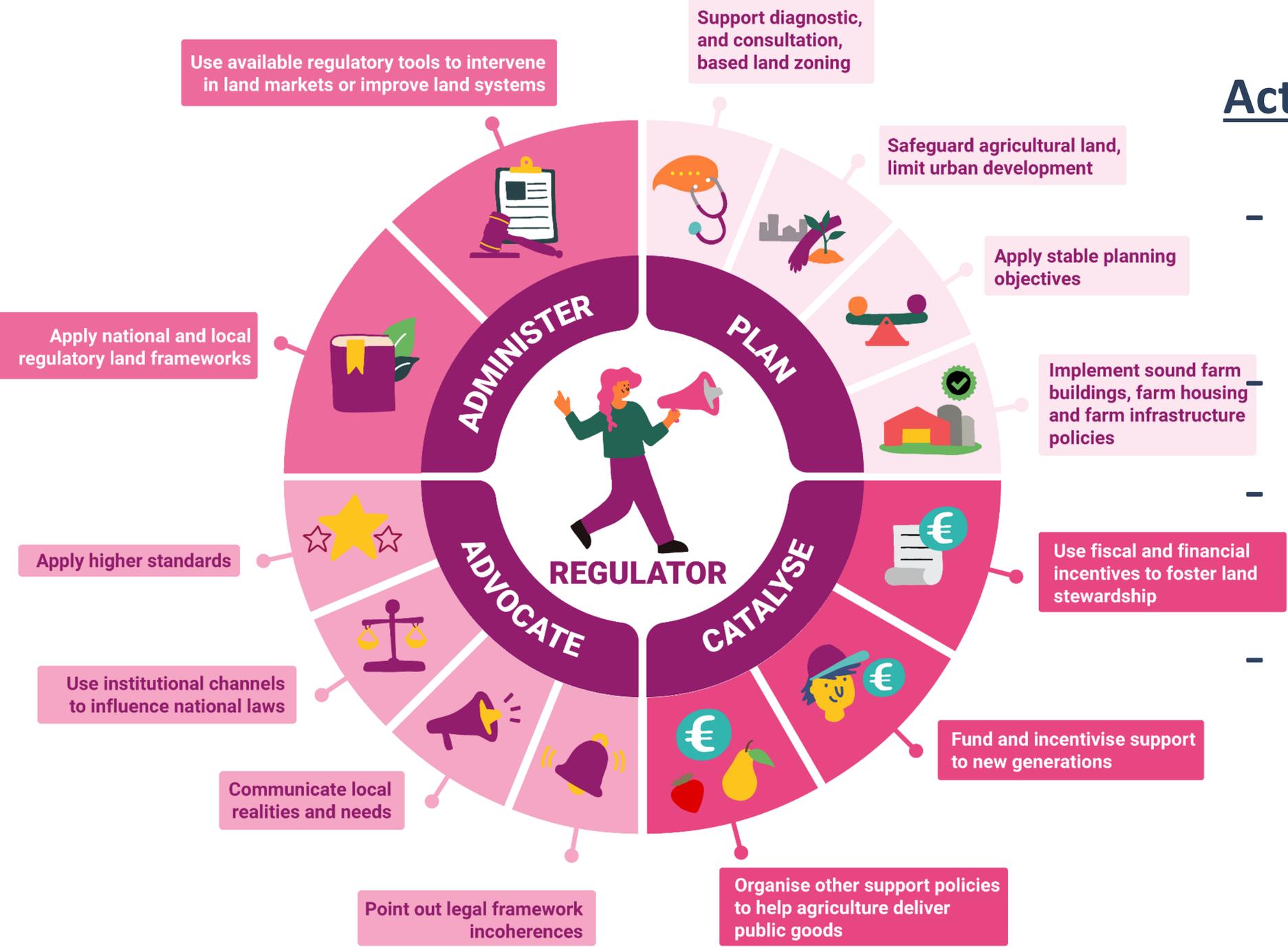
- Investment is required
- Concerted, data-based strategies
- Grounded in the management realities of a landowner
- Sharing practices with others to improve



Acting as a facilitator

- Access to information on land is a form of power
- Involving more people in land governance to rebalance power
- Educating Using local gov. legitimacy and knowledge of actors to connect them

Acting as a regulator



- Shifting the perspective on planning
- Intervening in land markets
- Indirect intervention & policy favouring better uses
- Experience-based advocacy & using international principles

Conclusion

- Need for **political courage** and motivation
- Possibility to **make changes with low means**
- Land as a **systemic lever** for local development

The decisions we make **today** on land can create a more **regenerative, more prosperous land and soil-based economy**





Thank you!

contact: a.martin-prevel@terredeliens.org

Handbook: accesstoland.eu/farmland-for-public-good



HuMUS Webinar Soil Health Training

Open discussion
Question & answer time



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