



EUROPEAN UNION

EUROPEAN MISSION SOIL WEEK

Break-out session
'Farming practices for soil health'

21/11/2023

Blas Cabrera Institute - Building B



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#MissionSoilWeek #MissionSoil #EUMissions





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Moderator



Luis Sanchez Alvarez

Head of Sector “New Research and Innovation Concepts”

European Commission - DG AGRI

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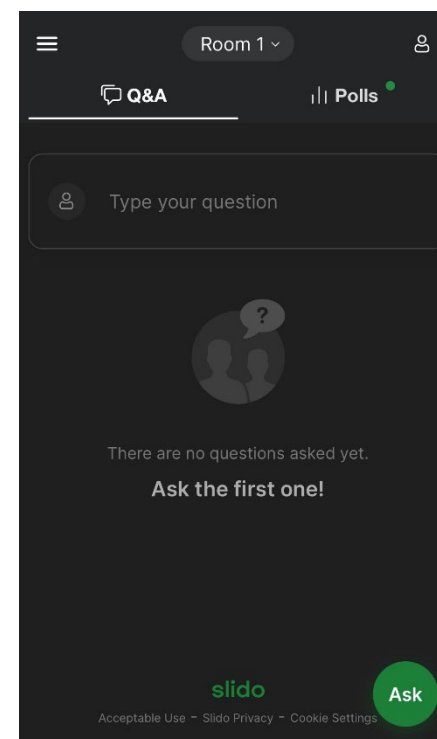
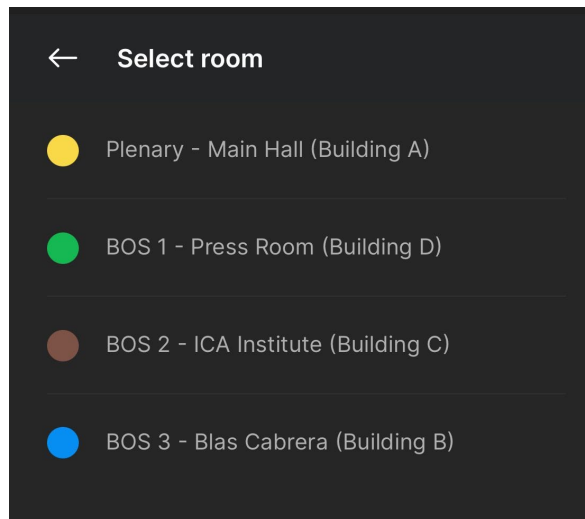
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Housekeeping rules

- **WIFI**
 - Network : EMSW
 - Password : Mission.Soilw3ek2023
- **Questions**
 - Go to www.sli.do and enter event code **#ESMW2023** (or scan the QR code)
 - Select the 'room' of the session
 - Submit your questions



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Our speakers



Grzegorz Siebielec

Research scientist

*Institute of Soil Science and Plant
Cultivation - State Research
Institute*



Judith Treis

Farmer

Biohof Ruhlengut



Heather McKhann

Coordinator

*European Joint Programming
Initiative on Agriculture, Food
Security and Climate Change
(FACCE-JPI)*



Ulrich Schmutz

Professor for Organic Horticulture
and Ecological Economics

Coventry University

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Agenda

- Introduction (10')
- Round of presentations from panellists (45')
- Panel discussion (30')
- Q&A (15')
- Participatory exercise (15')
- Conclusions and closing (10')

Questions of the participatory exercise

- What do you think are the main gaps in promoting the implementation of farming practices for soil health that research still has not addressed?
- What are in your view the main needs or challenges for efficiently promoting the implementation of sustainable farming practices that contribute to soil health?
- What are in your opinion the most efficient way(s) to address those needs/challenges?
- What do you think the Mission Soil can / should do to efficiently promote farming practices for soil health?



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Farming practices for soil health

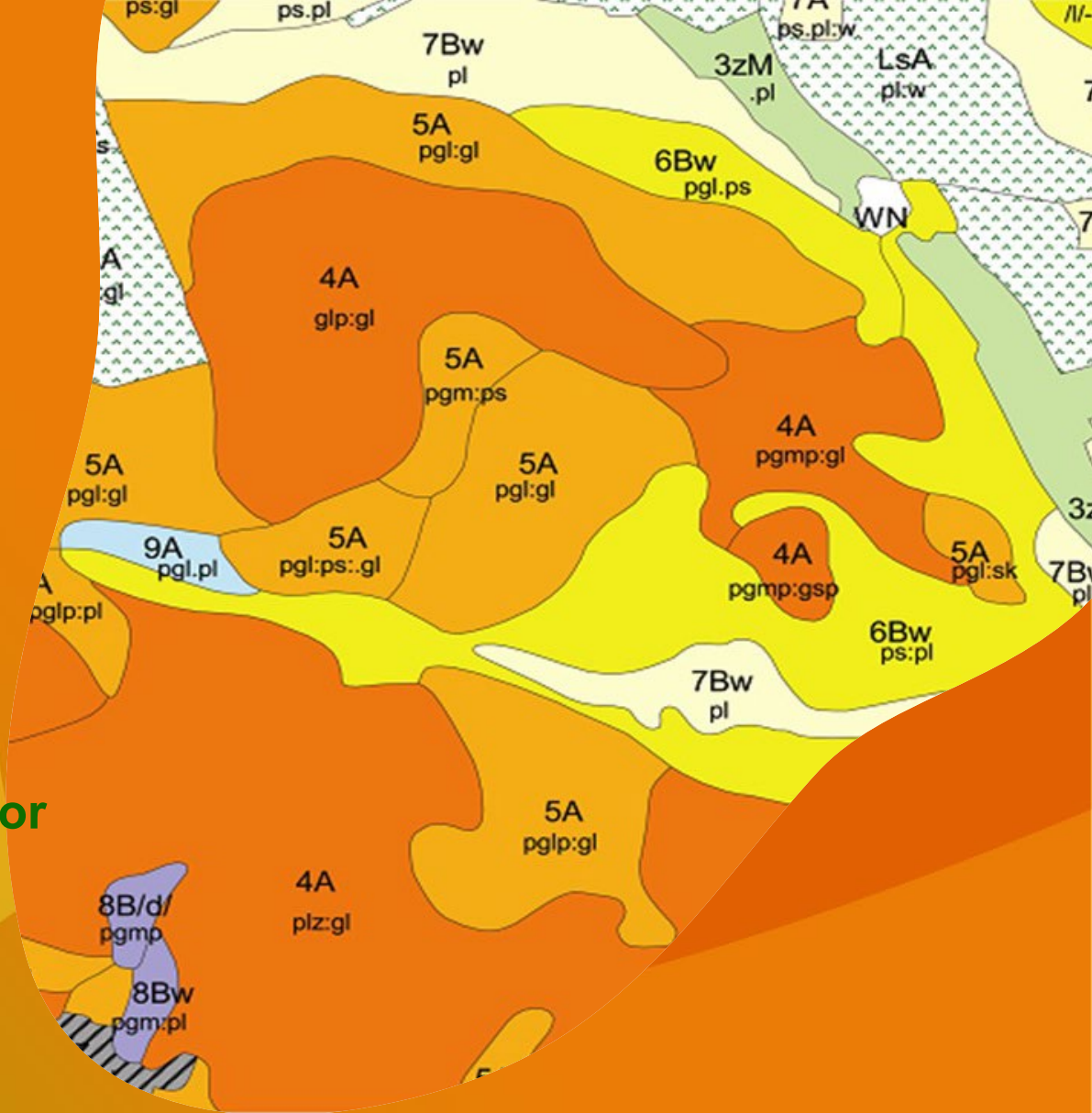
NBSOIL project to launch the learning program for soil advisors

Grzegorz Siebielec

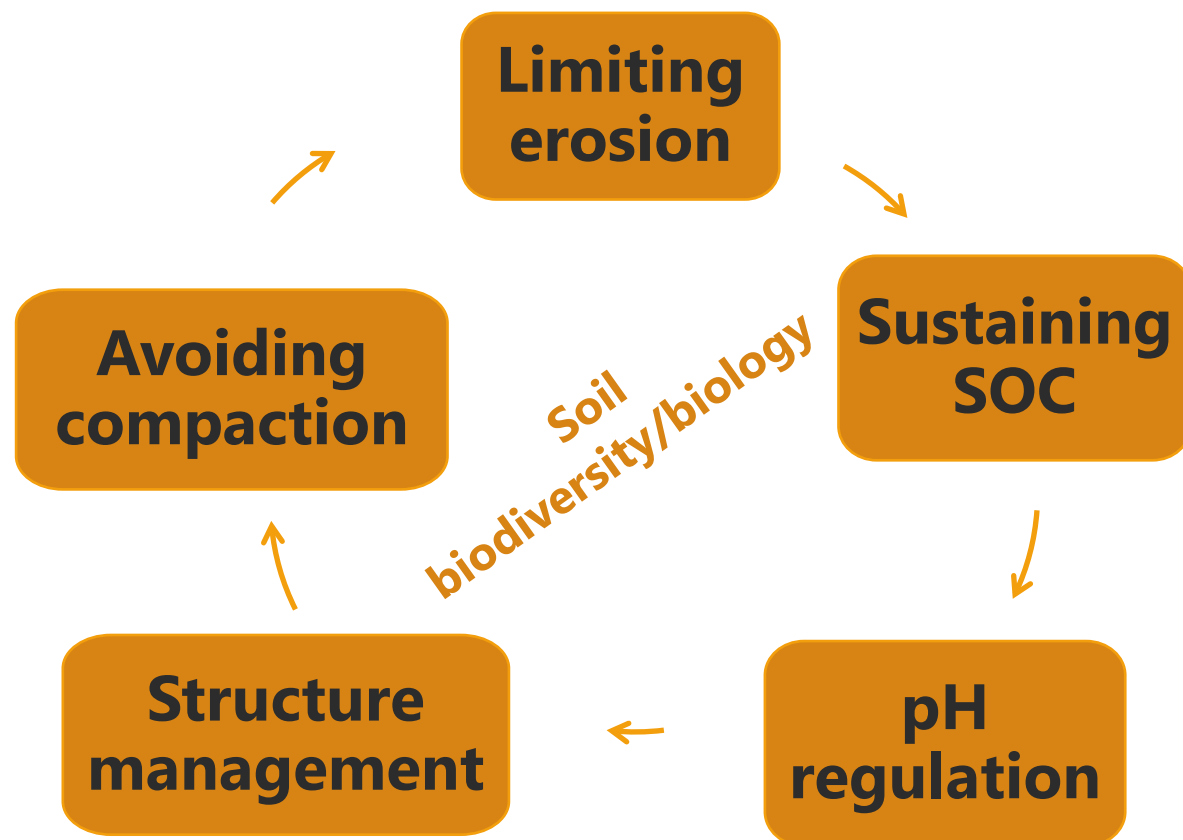
IUNG, NBSOIL coordinator

21/11/2023

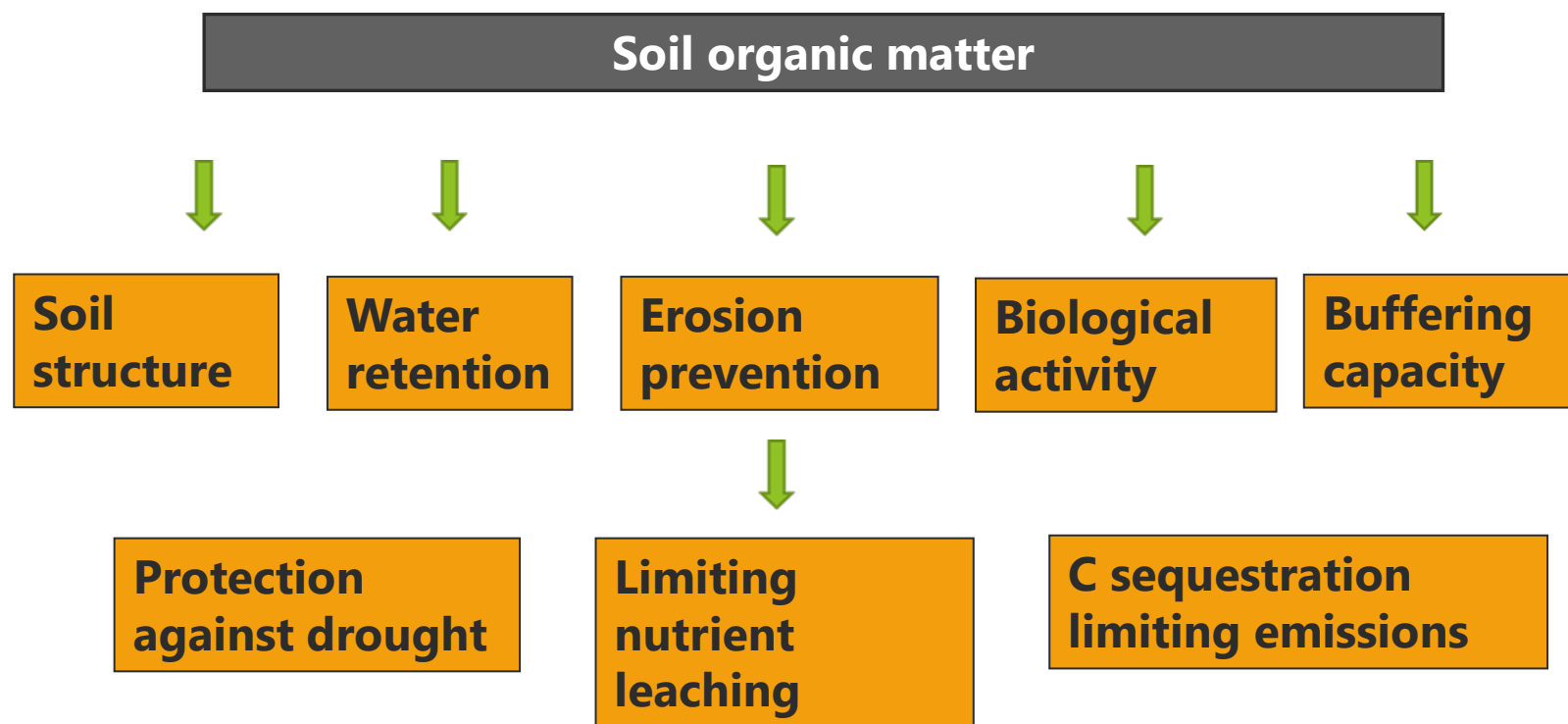
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Soil health – soil understood as an organism



Protecting SOC - benefits



SOC and pH regulation – the benefits from drought perspective

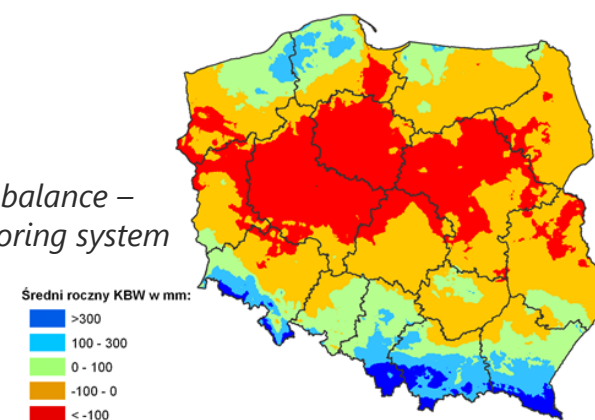
SOC in drought prevention

- ❑ Retention properties of the organic matter
 - ❑ Positive effect on soil structure
 - ❑ Greater resistance to compaction
- ❑ Positive effect on the activity of microorganisms that support plants during periods of drought (production of polysaccharides - soil structure, synthesis of deaminases, production of IAA and proline, improvement of water circulation by fungi)

pH in drought prevention

- ❑ Better conditions for the accumulation of organic matter - greater water retention
- ❑ Improving soil structure (pH plus calcium) - optimizing permeability and retention
 - ❑ Greater plant resistance to stress
- ❑ Greater biological activity supporting the efficiency of water use by plants

*Climatic water balance –
Drought monitoring system*

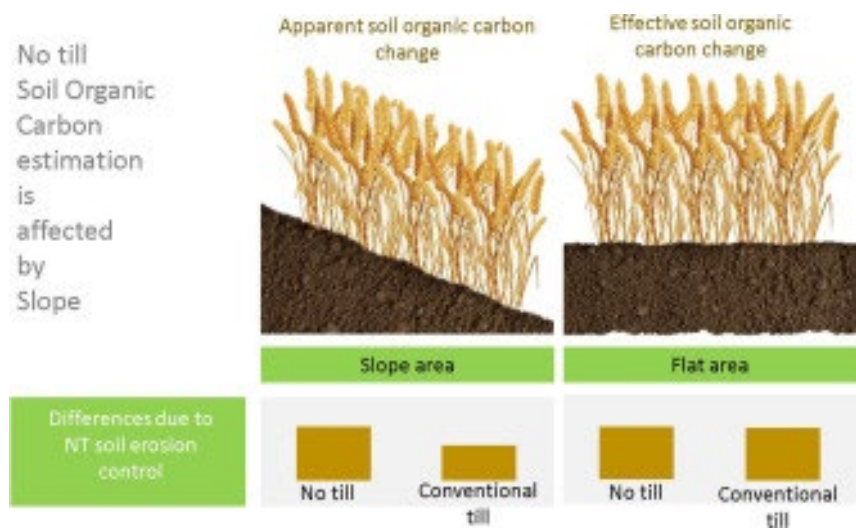


Regenerative farming practices – benefits for soil health

Practice	SOC	Soil structure /erosion prevention	Biological activity	Water conditions
Conversion arable-grassland	++	+	+	+
Cover crops/intercropping	+	+	+	?
Crop rotation	+	+	+	+
No-till	++	+	+	++
Mixing residues	+	+	+	+

Trade offs – water!

No-till effect on SOC



Novara et al. 2021. STOTEN

Organic fertilisation effect on crop performance in dry seasons



Challenges to be addressed:

Soil testing

Soil health as the principle

Nature based solutions in practice

Agricultural advisory focus

Insufficient demonstration/good examples

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Response

Living Labs and Lighthouses

Knowledge integration and sharing

Improved and innovative soil advisory services





NBSOIL
Nature Based Solutions
for Soil Management

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NBSoil - Nature Based Solutions for Soil Management, Project 101091246

Duration 48 months: 1 Dec. 2022 – 30 Nov. 2026

Coordination: Institute of Soil Science and Plant Cultivation – State Research Institute

Coordinator - Grzegorz Siebielec gs@iung.pulawy.pl, Project Manager – Javier Montellano javier.montellano.lopez@gmail.com

Partners: BOKU, BC3, AGRISAT, REVOLVE, CDR, CNA, ITAP, CAFS, ALCN,

ILOT, UNITO, AERES, IUCN, FIBL, Soil Association

Webpage: nbsoil.eu

Granted under the call: HORIZON-MISS-2021-SOIL-02



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.



This work has received funding from UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee grant number 10061997.



This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).

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Key objectives

- NBSOIL(Nature Based Solutions for Soil Management) is a four-year project which aims to **co-create and test a learning pathway for existing and aspiring soil advisors**.
- The co-creation process will engage stakeholders such as land managers, researchers, soil advisors, community organisers, entrepreneurs, technology developers, local authorities and policy makers. Pilot learning program will cover 300 participants from 8 countries (Poland, Austria, Switzerland, United Kingdom, France, Netherlands, Italy and Spain) completing the full 2 years training offered in 6 languages (English, Polish, German, Dutch, French, Italian, Spanish)

*Land uses covered by the project: **agricultural, urban, post-industrial, forest***

*Soil types: **mineral and organic soils***

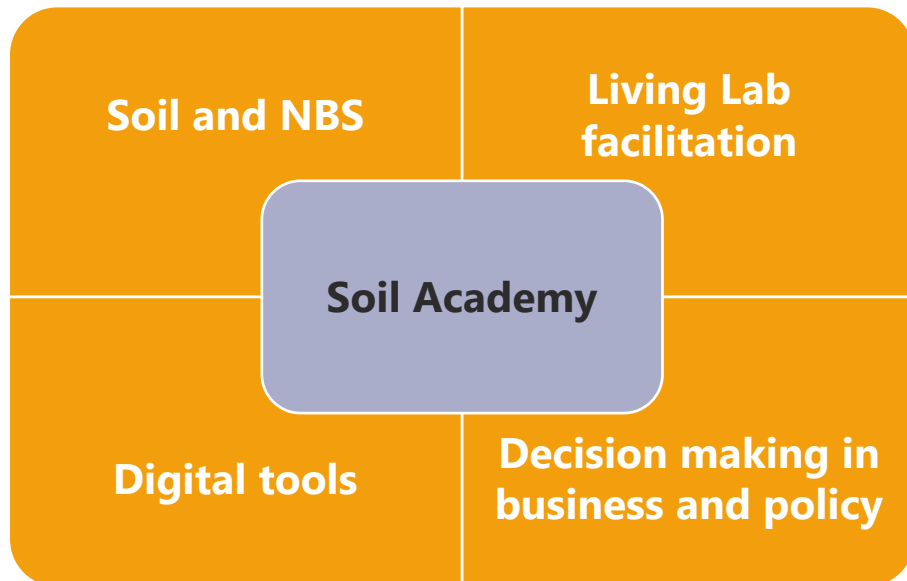
*NBS: **cover crops, paludiculture, forest diversification, blue/green infrastructure, bioremediation, organic fertilisers***

*These categories support soil advisory capacities for **agriculture, forestry, urban planning, and restoration of industrial and former mining sites***

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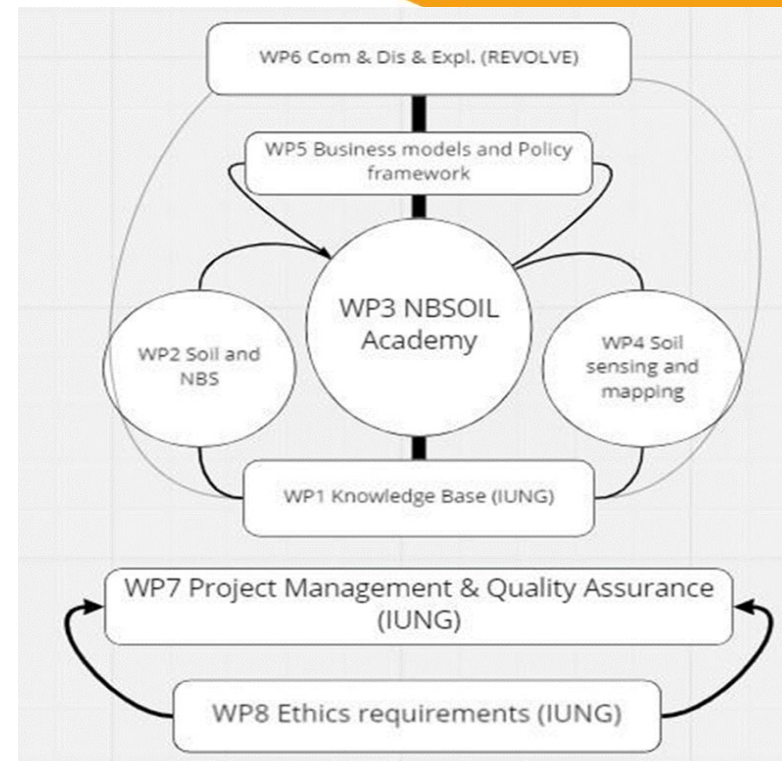
Soil Academy – the innovative learning program for soil advisors

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NBSOIL will enable soil advisors to:

- *Identify and recommend Nature based solutions*
- *Make use of digital tools for learning and soil monitoring, modelling and mapping*
- *Integrate and make data and models*
- *Collaborate among soil advisors and other experts*



Examples of other exploitable results and outputs

<i>Introductory MOOC (Massive Online Open Course)</i>	Online learning resources in various languages to raise soil literacy among the general public and to engage soil advisors
<i>Spatial planning and soil NBS toolkit</i>	A report on spatial planning to include the NBS use and greenness parameters in the decision tree
Marketplace, collaborative platform	Platform including videos, guides, feedbacks, concepts and e-learning modules developed within the programme
<i>Handbook - Soil Nature Based Solutions</i>	Practice abstracts in the EIP – AGRI format containing insights on the NBS categories
<i>GIS Tool and ARIES Soil Module</i>	A user-friendly GIS Tool integrating the information and dataset acquired from the pilot areas
<i>Remote Sensing Handbook</i>	A guide explaining how to integrate multiple data sources to assess and monitor Soil Health
<i>NBSOIL Card Game</i>	Card game representing images and icons for different soil related concepts and practices, to enable a storytelling approach

Thank you for your attention!

- Collaboration desired!
 - gs@iung.pulawy.pl
 - javier.montellano.lopez@gmail.com
 - marta@revolve.media
-
- Exchange on Nature Based Solutions (e.g. urban spatial planning, bioremediation, cover crops, etc.) in soil management
 - Selection of indicators, NBS monitoring,
 - Advisory learning programmes and digital tools
 - Reaching farmers, advisors, land managers, knowledge sharing
 - Engagement activities, LL and LH development, facilitators for LLs
 - Modelling
 - Soil sensing
 - Business in soil management





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“Farming practices for soil health”

Example organic farm Ruhlengut

Judith Treis

Farmer Ruhlengut

21.11.2023



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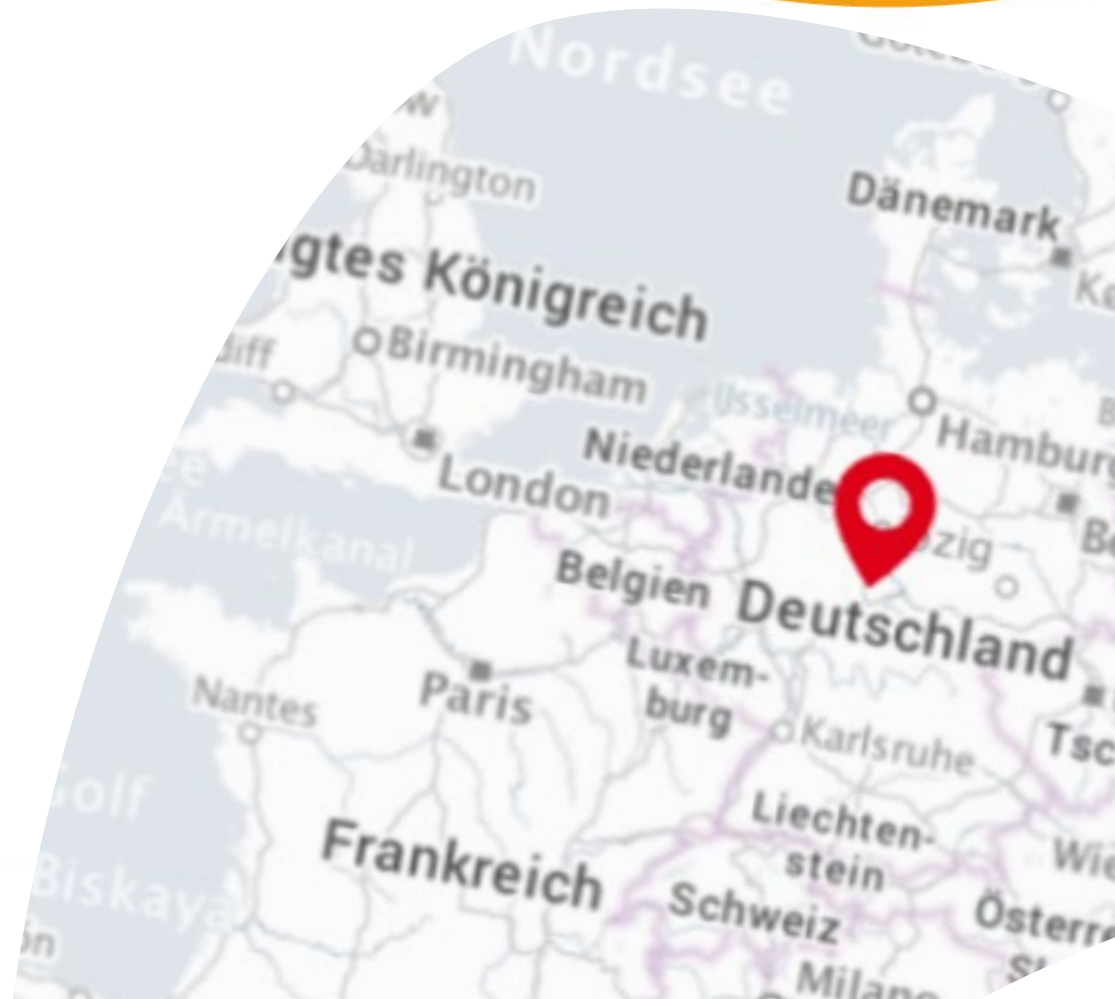
Biohof Ruhlengut, Germany Hesse

- Germany, Hesse
- Arable land 45 hectare
- Forest area 11 hectares
- Temperature: 9 C° average
- Rainfall: 560mm/Year
- Soil quality (Az) 62
- Organic Farming since 1997



RUHLENGUT

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Cultivated crops on “Ruhlgut”

- Alfalfa grass
- Wheat
- Triticale
- Oats
- Broad beans
- Potatoes
- Pumpkin





Farming practices on “Ruhlengut” that contribute to soil health



RUHLENGUT

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Using soil for agriculture and keeping it healthy is not a contradiction

Critical points can be managed with intelligent (organic) cultivation system

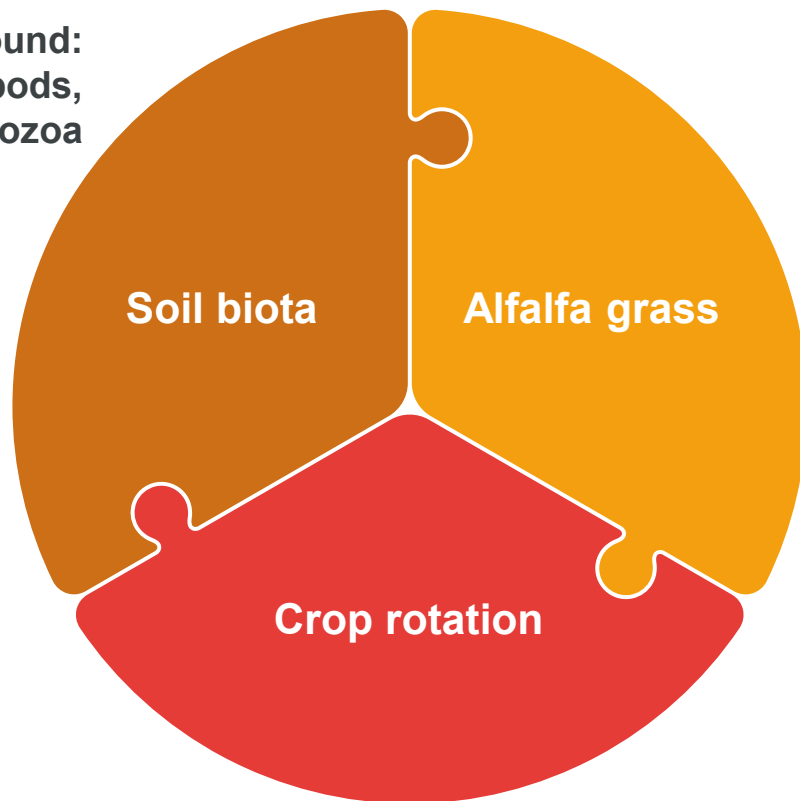
Farming practices that successfully contribute to soil health at our farm
“Ruhlenut”

1. Alfalfa grass- Success factor for soil structure
2. Strategies to conserve and increase soil organic carbon stocks
3. Farming practices to avoid soil pollution

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1. Alfalfa grass- Success factor for soil structure

Livestock under the Ground:
Lumbricids, arthropods,
nemathodes, bacteria, protozoa



- two years
Alfalfa grass

8 field System



2. Strategies to conserve and increase soil organic carbon stocks

- Two years alfalfa grass cultivation – Compost / Manure - Cover crops



RUHLENGUT

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Problems with farming practices to increase Organic carbon

- **Problem alfalfa grass:**

- Use of alfalfa grass on farms without livestock
- Competition for land with crops that generate income

Possible Solution: Using alfalfa to produce biogas
Biogas slurry comes back as fertilizer

- **Problem Cover crops**

- High costs for seeds and cultivation
- No monetary income possible

Possible Solution: Use of inexpensive species (rapeseed, mustard)

3. Farming practices to avoid soil pollution

The rules of organic farming in Germany provide strict guidelines to avoid soil pollution

1. **No chemical pesticides.** Alternative strategies to manage the crops is the System of crop rotation, phytosanitary measures and mechanical weed control
2. **No mineral fertilizers.** Instead, we practice careful use of Biogas slurry, manure and legumes

success factors:

- cooperation with local biogas plant
- feed-manure-cooperation



benefits and trade-offs of implementing farming practices that contribute to soil health

- It is a pleasure to use intelligent and sustainable farming practices to keep soils healthy.
- There are agricultural methods that are used successfully to keep soil healthy
- Maximizing yields with conventional fertilization and crop protection has led to soil degradation. “60-70% of soils in the EU are unhealthy”*
- However, cultivation methods that contribute to soil health cause additional costs, work and loss of yield
- Economics have to be seen with in all Farming practices for soil health
- Non-economic agricultural practices cannot be implemented on farms. Because farmers need to earn money for their families and their businesses

*European Missions A Soil Deal for Europe 100 living labs and lighthouses to lead the transition towards healthy soils by 2030-Implementation Plan

Thanks for your attention!





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Session: Farming Practices for Soil Health

*Benefits and Trade-offs for soil health in
'organic', 'agroforestry' and 'agroecology'?*

Professor Dr Ulrich Schmutz

Coventry University
(ISER/CAWR), England, United Kingdom
<https://pureportal.coventry.ac.uk/en/persons/ulrich-schmutz>

Madrid, 21 November 2023, Thematic Session 3



#StandWithU

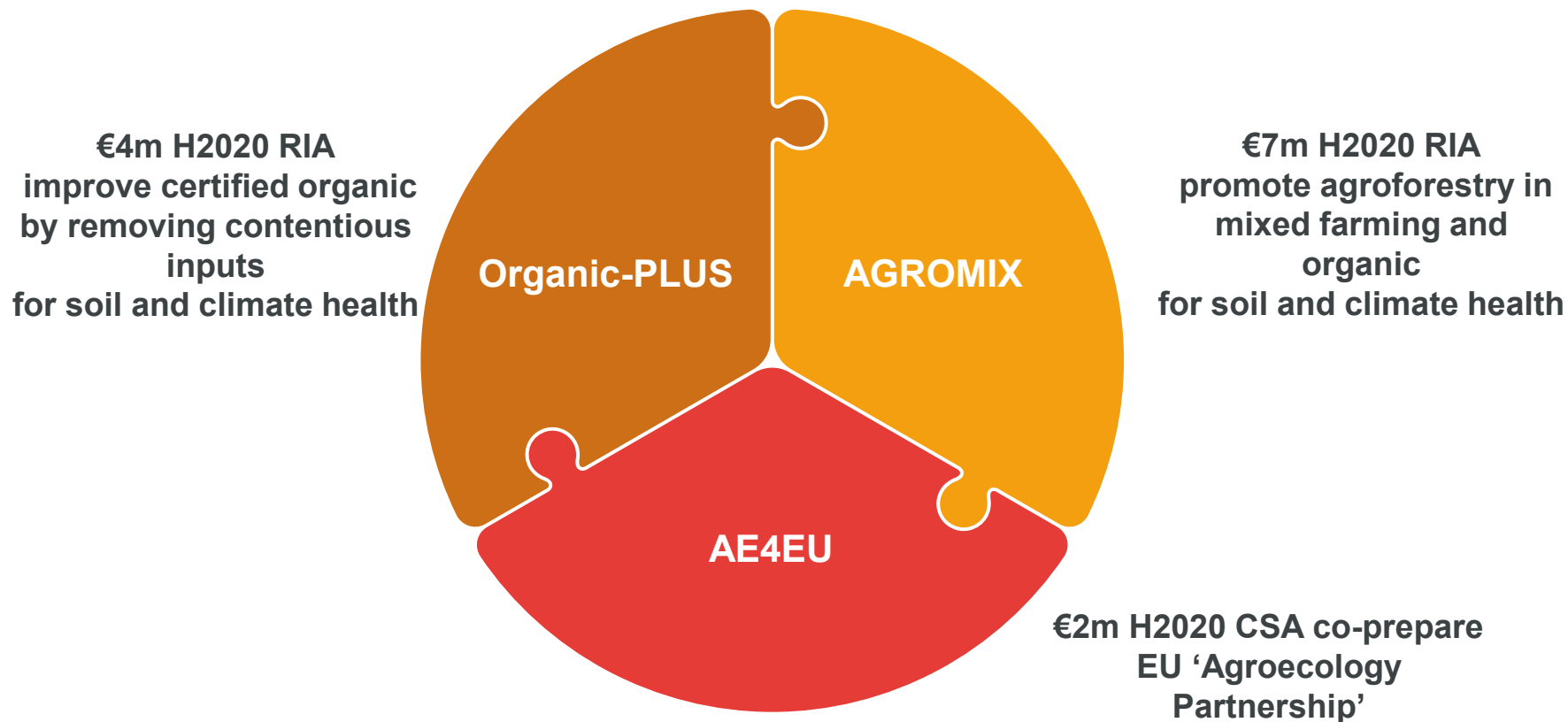
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Insights from Organic-PLUS, AGROMIX and AE4EU



H2020 = EU Horizon 2020 (8th framework programme of the European Union (EU))

RIA = Research and Innovation Action

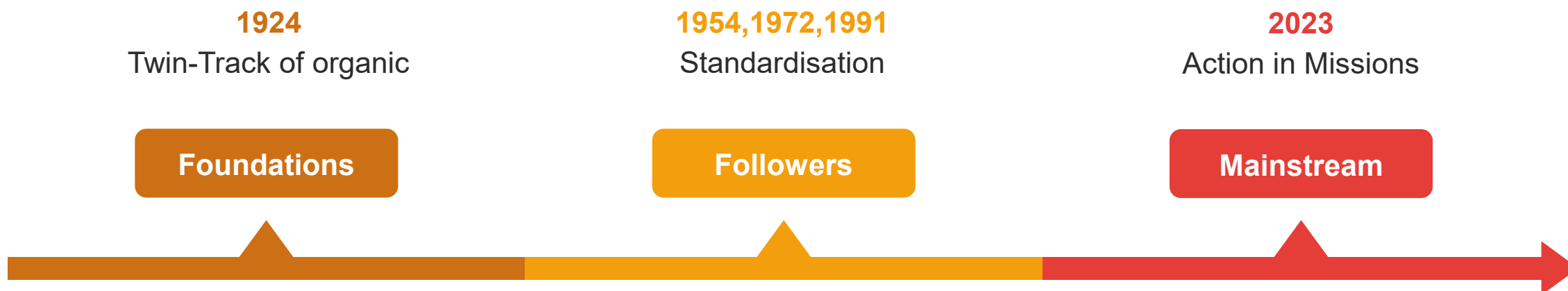
CSA = Coordination and Support Action

€m = total size of project in million Euro

'Sister' projects: RELACS, MIXED and ALL-Ready, with thanks for co-operation.

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Insights from Organic-PLUS, AGROMIX and AE4EU – start with history



garden organic !



Garden Organic Ryton,
Coventry, Warwickshire CV8
3LG, UK

www.gardenorganic.org.uk

Registered charity no 298104 Garden Organic is the working name of the Henry Doubleday Research Association.

Our vision: 'a healthy sustainable world that has embraced organic growing' -

Nuestra visión: 'Un mundo saludablemente sostenible y estrechamente unido a la producción ecológica'

1954

Founded over 60 years ago as Henry Doubleday Research Association (HDRA), a charity for research, education, empowering people to grow -

Fundado hace 60 años cómo Henry Doubleday Research Association (HDRA) una asociación sin ánimo de lucro para la investigación, educación y empoderamiento de las comunidades hacia el cultivo

Insights from Organic-PLUS, AGROMIX and AE4EU – start with history



2011

www.fao.org/agroecology/database/detail/en/c/455332/

Mainstreaming Agroecology: Implications for Global Food and Farming Systems

Discussion Paper

Foreword by
HRH the Prince of Wales

2013



2023

www.Coventry.ac.uk/cawr

Insights from Organic-PLUS, AGROMIX and AE4EU – start with history

1924

Jungbauernbewegung Grosshöchstetten (1923)
Bauernheimatschule Möschi (1932), Switzerland
- organic-biological

Landwirtschaftlicher Kurs, Gut Koberwitz/Kobierzyce, Silesia
(1924), Poland
- bio-dynamic

Insights from Organic-PLUS, AGROMIX and AE4EU – start with history

1972

IFOAM

International Federation of Organic Agriculture Movements
Paris, France

Insights from Organic-PLUS, AGROMIX and AE4EU – start with history

1991

EU 'Eco-regulation': EEC-No. 2092/1991

European Council Regulation on organic production of agricultural products

(plants in 1991 and animals in 1999) EC No. 1804/1999

further updates and improvements ever since, about every 7 years



Insights from Organic-PLUS, AGROMIX and AE4EU – start with history

2030

25% organic land use in EU = official policy

30% in some states, Germany, Bavaria, Austria,

Lichtenstein towards 50%



Certified

Organic = Agroecological = Biological

Food & Farming (COF)

growing in healthy soil legally required

**all three words and derivatives (eco-, bio-) are legally
protected against '*green-wash*'**

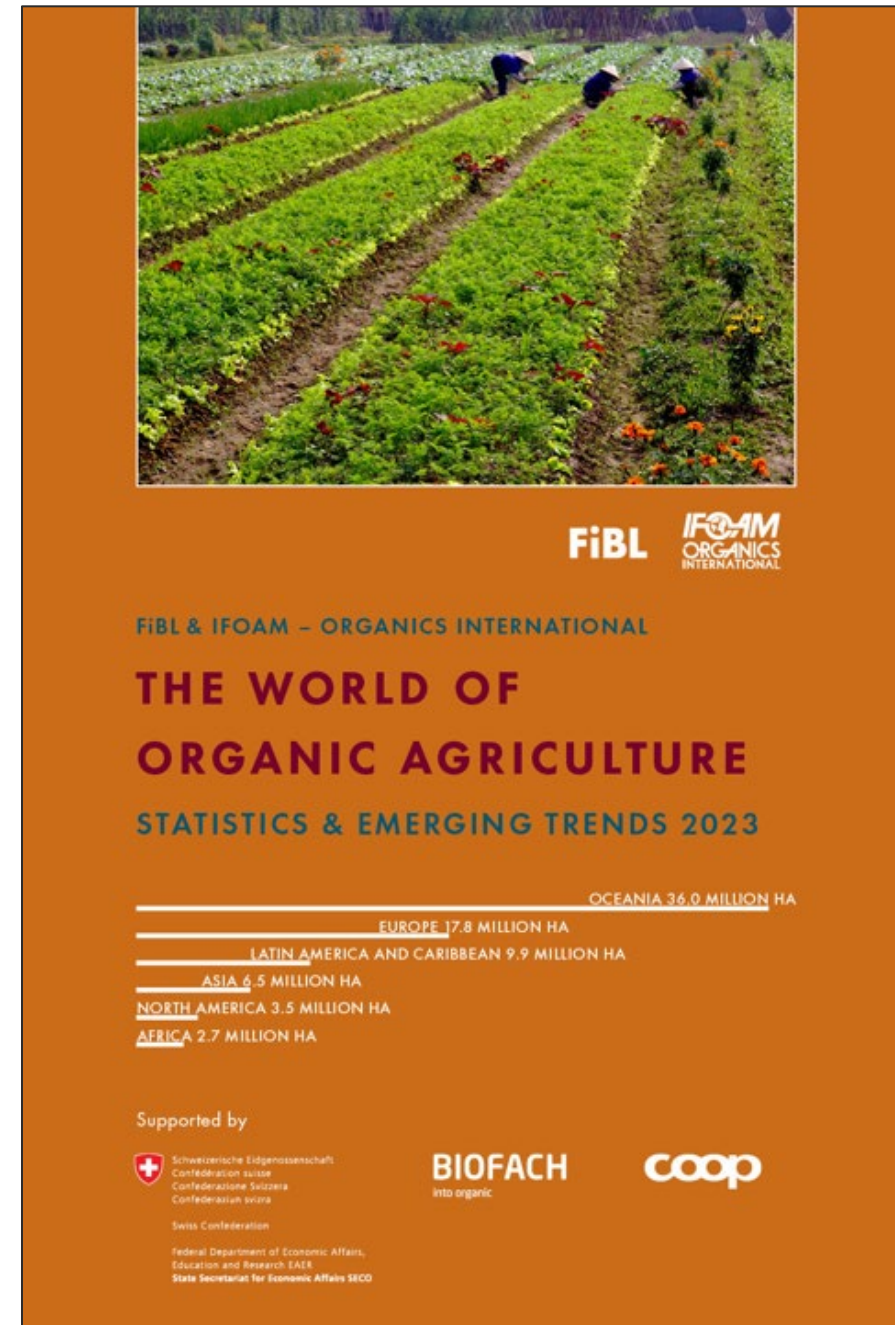
in EU & EEA & UK

The World of Organic Agriculture 2023 (358 pages)

Source:

Helga Willer, Bernhard Schlatter and Jan Trávníček (2023) *The World of Organic Agriculture, Statistics and Emerging Trends 2023*

www.fibl.org/en/shop-en/1254-organic-world-2023



The World of Organic Agriculture 2021 data

World: Countries with an organic share of the total agricultural land of at least 10 percent 2021

Source: FiBL survey 2023

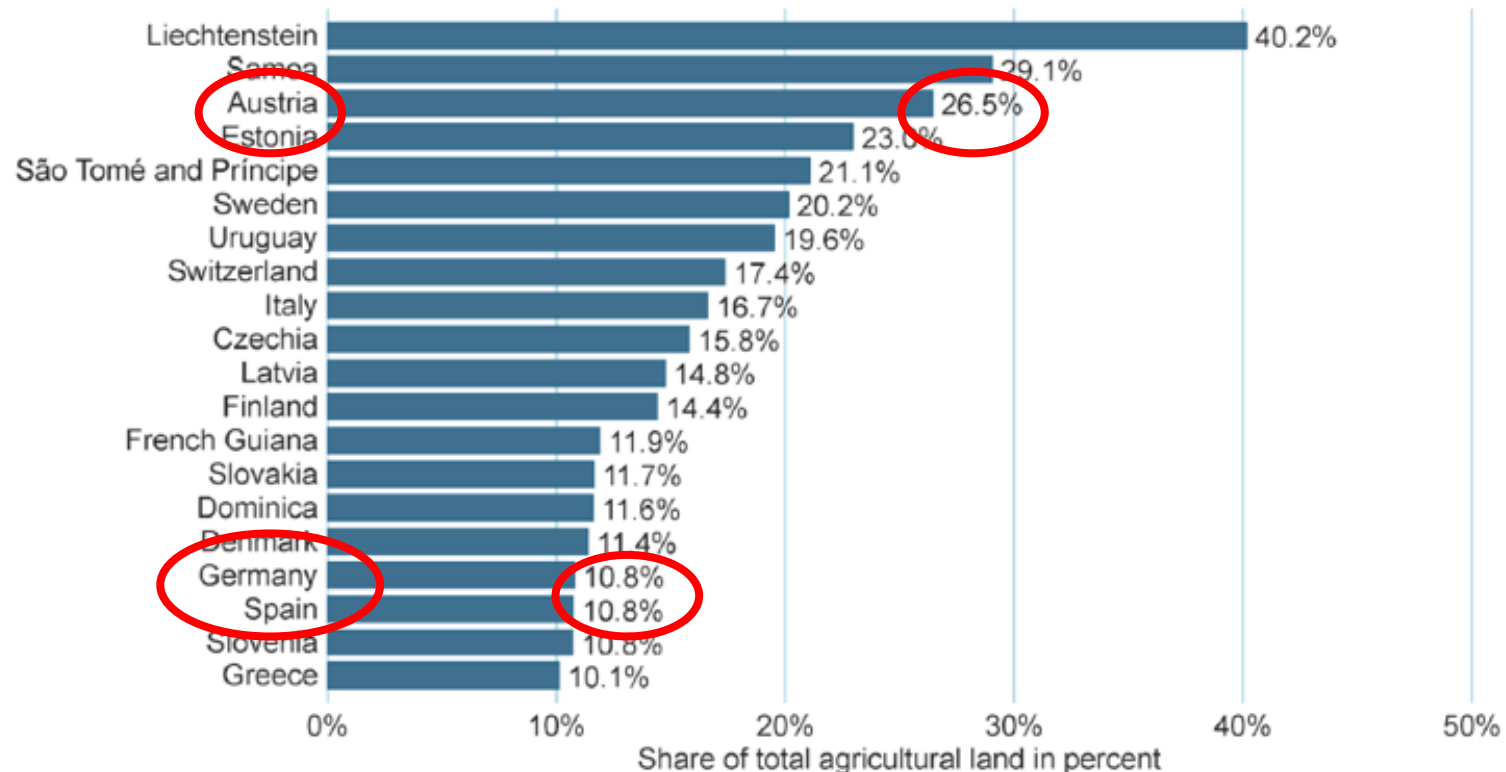


Figure 3: World: Countries with an organic share of the total agricultural land of at least 10 percent 2021

Source: FiBL survey 2023, based on information from the private sector, certifiers, and governments. Calculation of organic shares based on FAOSTAT, Eurostat, and national sources. For detailed data sources, see annex, page 338.

The World of Organic Agriculture 2023

Table 5: World: Organic agricultural land (including in-conversion areas) by region: growth 2020 to 2021, and 10 years growth

Region	Organic agri. land 2020 [ha]	Organic agri. land 2021 [ha]	1 year growth [ha]	1 year growth [%]	10 years growth [ha]	10 years growth [%]
Africa	2'271'080	2'663'983	392'903	17.3%	1'594'287	149.0%
Asia	6'148'098	6'504'211	356'113	5.8%	2'818'062	76.5%
Europe	17'096'929	17'844'853	747'924	4.4%	7'296'330	69.2%
Latin America	9'938'337	9'870'887	-67'450	-0.7%	2'904'739	41.7%
Northern America	3'744'163	3'542'140	-202'023	-5.4%	522'453	17.3%
Oceania	35'908'876	35'985'809	76'932	0.2%	24'602'115	216.1%
World*	75'099'762	76'403'777	1'304'015	1.7%	39'734'874	108.4%

Source: FiBL survey 2023, based on data from government bodies, the private sector, and certifiers. For detailed data sources, see annex, page 338

* Total includes correction value for French Overseas Departments.

UK-4, England, Northern Ireland, Scotland and Wales

Reasons to buy:
Better for environment
Better for animal welfare (soil fauna)
2. and 5. of top six reasons for organic ->

Sales increase with ever lower supermarket share

Supermarket market share: 82% in 2001
67% in 2017
65% in 2022
62% in 2023

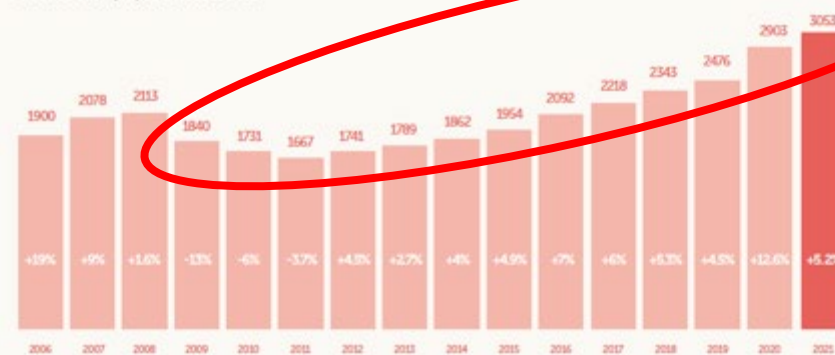
Source: Soil Association (2022) UK Organic Market Report 2022

The top six reasons for buying organic***

1. No pesticides
2. Better for the environment
3. Perceived better quality
4. Taste is better
5. Better for animal welfare
6. Perceived health benefits



2006-2021 UK sales of organic products in GBP(£) millions



* Based on NielsenIQ Scantrack data for the organic category Soil Association defined: for the 12-month period ending 1 January 2022 for the Great Britain total retail market (copyright ©2022 The NielsenIQ Company)
** NielsenIQ Homescan for the organic category FMCG 52 weeks ending 11 September 2021.
*** NielsenIQ Homescan Survey GB Feb 2021

UK-4:

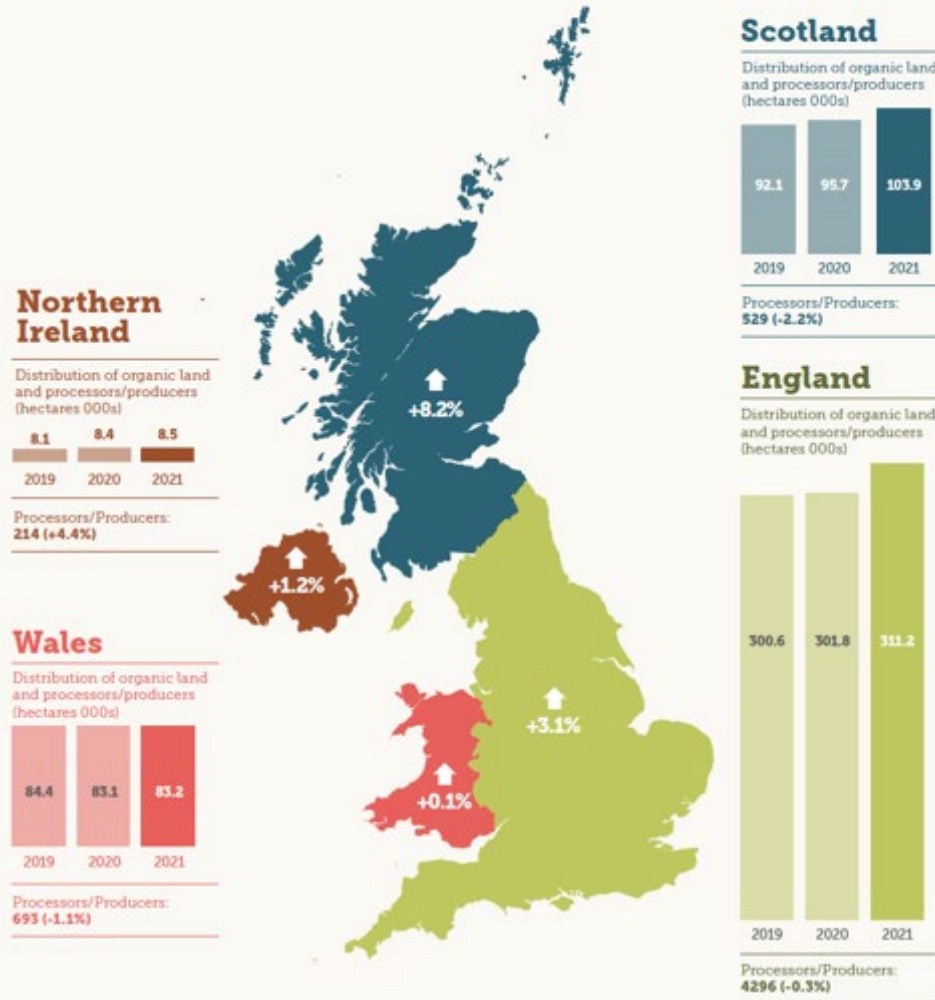
**England,
Northern Ireland,
Scotland,
Wales.**

**Certified organic land
growth everywhere,**

**But! Land share low:
3.4% England
0.7% N. Ireland
2.2% Scotland
4.4% Wales**

**EU-27:
9.9% average**

**Distribution of organic land
and processors/producers (hectares 000s)**



	2018	2019	2020	2021	Year-on-year change
Fully organic UK land	441.1	457.1	457.6	464.7	⬆️ +1.5%
Land in-conversion	32.9	28.1	31.3	42.0	⬆️ +34%
Total UK organic land	474	485.2	489	506.6	⬆️ +3.6%

Source: DEFRA Organic farming Statistics 2021

Source: Soil Association
(2023) UK Organic Market
Report 2023

Insights from Organic-PLUS, AGROMIX and AE4EU – Organic-PLUS 2018-2022



www.Organic-PLUS.net



Phase-out contentious inputs for soil and climate health

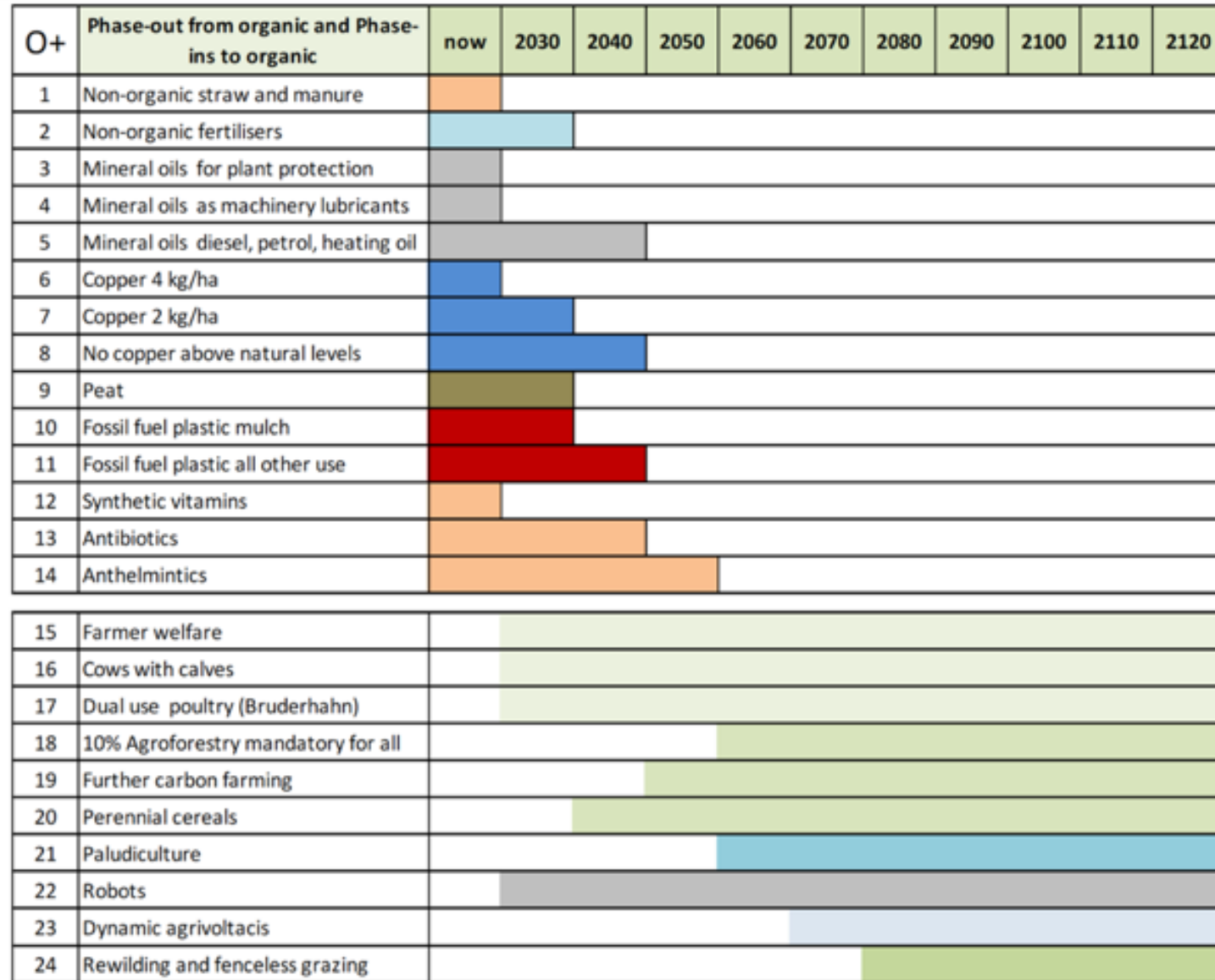


Figure. Phase-out vision (1-14) of contentious inputs and phase-in (15-24) vision of other practices until 2120 in Europe and worldwide.

AGROFORESTRY AND MIXED FARMING: PARTICIPATORY RESEARCH TO DRIVE THE TRANSITION
TO A RESILIENT AND EFFICIENT LAND USE IN EUROPE



agromix

Transforming Landscapes

www.AgromixProject.eu

Belgrade, Republika Srbija, 3 October 2023

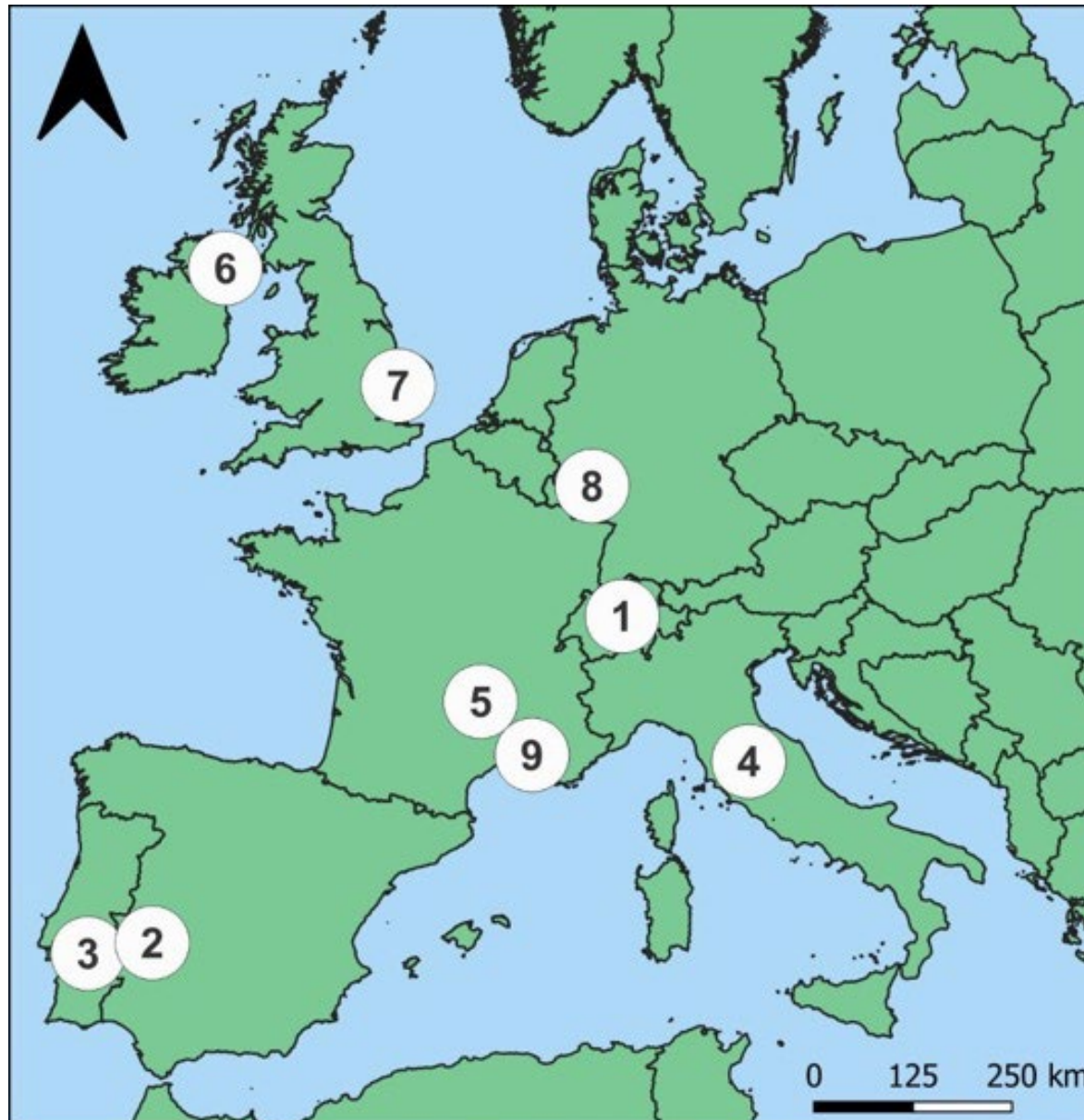


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 862993.

AGROMIX – transforming landscapes Aims

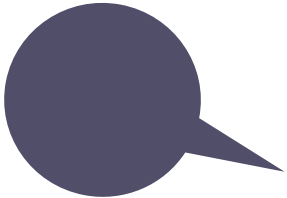
1. deliver **participatory research** to drive the transition to resilient and efficient land use in Europe
2. provide **practical agroecological solutions** for farm & land management, and related value chains
3. explore the potential for novel approaches and technologies to **promote innovation**

replicated trial sites

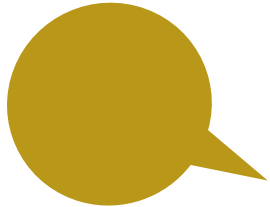


- 1 - Sursee and Möhlin (CH)
- 2 - Dehesa de Majadas (ES)
- 3 - Moinhos de Vento (PT)
- 4 - Tenuta di Paganico (IT)
- 5 - Lamartine (FR)
- 6 - Loughgall (UK)
- 7 - Wakelyns (UK)
- 8 - Bannmühle (DE)
- 9 - Restinclières (FR)

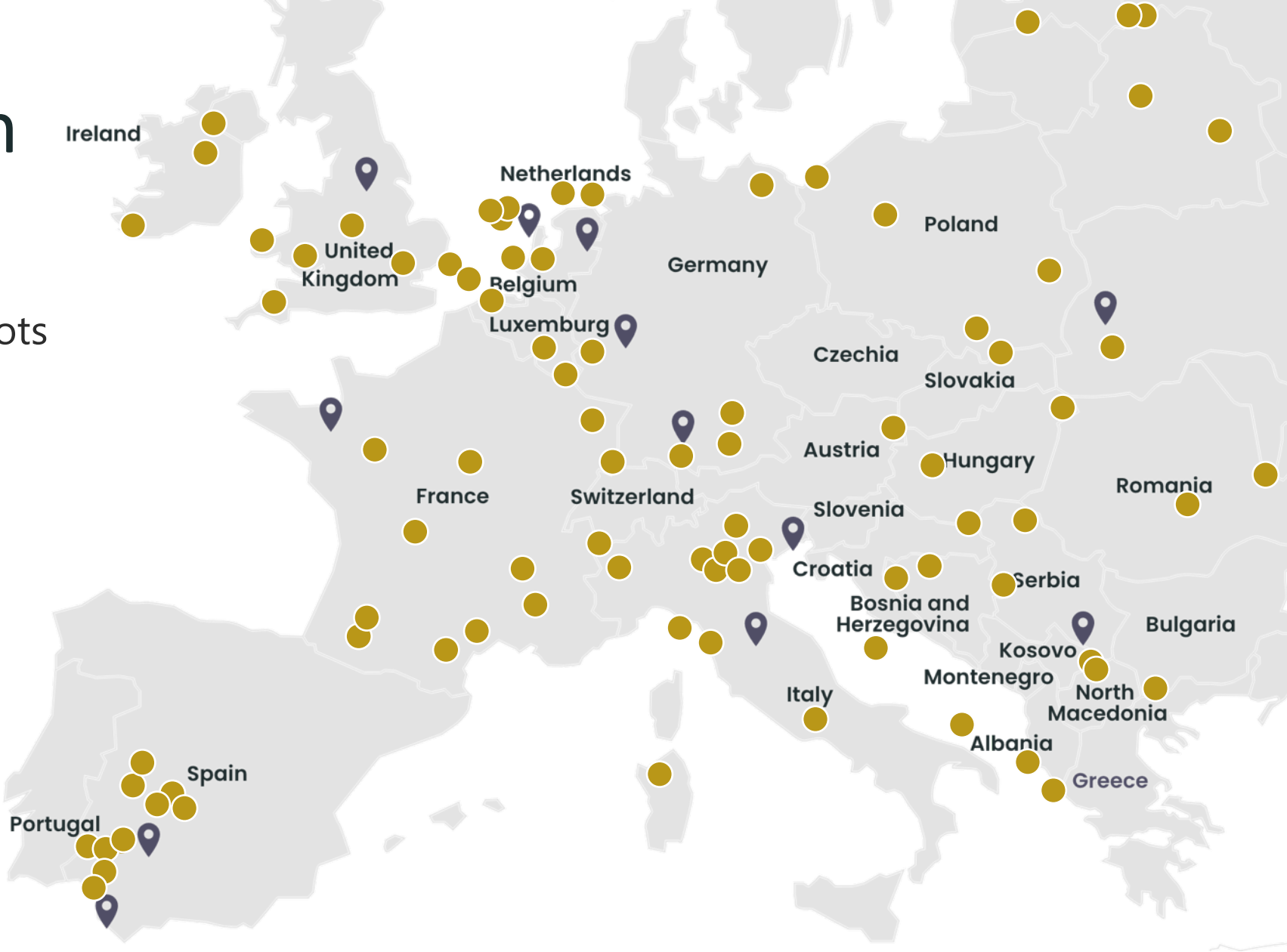
Nested Approach



12 Co-Design Pilots across Europe



Study sites and stakeholder groups





The Agroforestry Show

6 - 7 September 2023 • Eastbrook Farm, Wiltshire



H2020 CSAs: ALL-Ready and AE4EU



Agroecology Living Labs and Research Infrastructures in Europe Experience from ALL-Ready and AE4EU

27 September 2023 - European Committee of the Regions, Brussels

Results and experience from two 3-year €2m H2020 CSAs with discussion of agroecological living lab and research infrastructure examples and how cities, regions, federal states can support them

Source:

www.all-ready-project.eu/communication/news-events/news/all-ready-final-conference.html
www.agroecology-europe.org/all-ready-and-ae4eu-joint-final-conference-brussels-27-september-2023

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AE4EU Urban Agroecological Living Lab



COVENTRY AGROECOLOGICAL LIVING LAB

DIVERSE CROPS FOR A CHANGING CLIMATE

WHAT IS THE GOAL OF THE LIVING LAB?



Bringing together growers in Coventry, we will explore which crops are currently grown, look ahead to future needs, and find solutions together. Coventry Agroecological Living Lab is where knowledge sharing will take place and where participants can engage in trials to grow a more diverse range of crops to cope better with climate change.

ACTIVITIES OF THE LIVING LAB



Diverse crops for a changing climate - organic fruit and vegetables in urban soils

Source:
www.ae4eu.eu/learning-exchange/livinglabs

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Soil in urban agroecology


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Coventry University  

Study Life on Campus International Research Business About Us

Home > Research > Research Projects > SOIL NEXUS - Building policy tools for water- and ...

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SOIL NEXUS - Building policy tools for water- and waste-based urban soil remediation

Funder
[Future Earth](#)

Soil protection and Soil regeneration are limited topics in urban policies.

Knowledge gaps about safety and quality of urban wastes prevent use in soil remediation.

Policy dialogues in Rosario (Argentina), Franschhoek (South Africa), London (United Kingdom).

Source: www.coventry.ac.uk/research/research-directories/current-projects/2020/soil-nexus

Benefits for soil health in ‘organic’, ‘agroforestry’ and ‘agroecology’

1. Must grow in soil. **Health, Care** and **Ecology** for soil are 3 of the 4 core principles of IFOAM international organic movements (**Fairness** is other).
2. Must protect soil flora and fauna: No synthetic herbicides, molluscicides, insecticides.
3. No synthetic fossil-fuel derived fertilisers to create “soil obesity”.
4. Innovation leadership in phase-out of contentious inputs:
e.g. phase-out all fossil-fuel inputs,
phase-out (minimise) copper,
phase-out fossil fuel plastic,
phase-out peat,
phase-out antibiotics,
phase-out synthetic anthelmintics.
5. All legally regulated and fully enforceable – no green wash!

More...Benefits for soil health in 'organic', 'agroforestry' and 'agroecology'

1. Regenerative practices are already integrated in certified organic and agroecology.
2. Regenerative practices without organic can lead to more pesticide use and effect soil health.
3. Agroforestry includes “three-dimensional farming” into organic.
4. Trees reach much deeper root zones, change micro climate for wind and water availability.
5. Trees introduce further functional biodiversity, shade and medical tree fodder for healthy free range animals.

Trade-Offs /Dis-Benefits for soil health in ‘organic’, ‘agroforestry’ and ‘agroecology’

1. Still not large enough scale of organic land use to make landscape wide effect
2. 25% by 2030 is very good – however 50% by 2050 is needed.
3. Many consumers *get ‘organic’, ‘agroforestry’ and ‘agroecology’*, and are willing to value the products not all have higher price, especially if not in supermarket.
However many consumer do not *get it* and there is green-wash and deliberate mis-information, more science based information and true cost accounting of benefits for personal and plant health is needed.
4. Governments (e.g. currently UK at not devolved level) do nothing, or work unofficially actively against organic and agroecology.
5. *‘organic’, ‘agroforestry’ and ‘agroecology’* is more knowledge intensive and farmers lack knowledge especially about agroforestry, an EU-wide free advice service is need to change this and should be part of agroforestry establishment support package.
(agroforestry once mature is profitable like organic)

Conclusions

Organic & Agroecology are one – need to be improved together:

Continue phase-out all contentious inputs which will lead to input substitution and in many cases, as input substitution is not possible, system re-design also for organic.

Agroforestry is transforming landscapes at large scale:

For soil health, carbon farming, free-range livestock, etc. this needs to happen on a much larger scale (over 50%) of UAA in Europe, as up to 2/3 of arable UAA is 'wasted' for in-door livestock fodder.

Agroecology Partnership also with Urban Agroecology:

Promote Urban/Per-Urban Agroecological Living Labs with organic horticulture, community food processing and waste recycling. Inclusive for all, avoiding political ideologies.



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Thank you



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Madrid, 21 November 2023, Thematic Session 3

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European partnership 'Accelerating farming systems transition: Agroecology living labs and research infrastructures'

Heather McKhann

ANR, France

21 November, 2023



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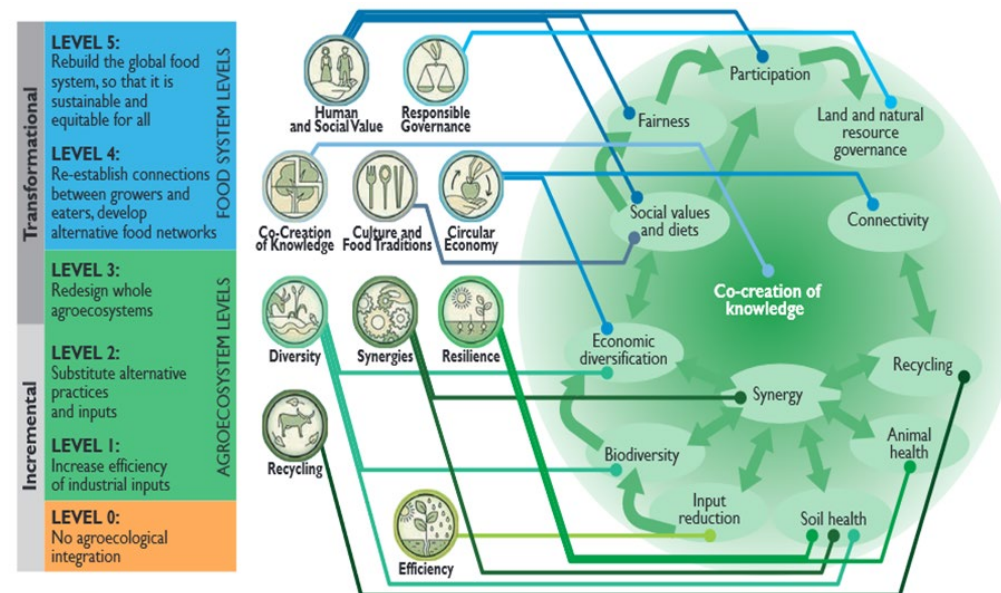


Agroecology

Agroecology can be defined as “the science of ecological processes applied to agricultural production systems benefiting from the interplay of science, technology and traditional or indigenous knowledge by farmers and stakeholders in value chains”.

- AE has the potential to **transform** agricultural systems, and enhance sustainability of agri-food systems
- More **reliance on diversity and ecosystem services** and less on synthetic inputs → redesign of farming systems → increased complexity & knowledge
- **Context-specific**
- **Scale** matters: farm, landscape, territorial levels
- Strong potential for **innovation**

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▲ Linking FAO's 10 elements, Gliessmann's 5 levels of food system transformation and the 13 HLPF principles
Correspondence based on Wezel et al., 2020. Agroecological principles and elements and their implications for transitioning to sustainable food systems.
A review. Agronomy for Sustainable Development, (2020) 40: 40.

Agroecology as a promising way forward



Organic Action Plan



Brussels, 23.3.2022
COM(2022) 133 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Safeguarding food security and reinforcing the resilience of food systems

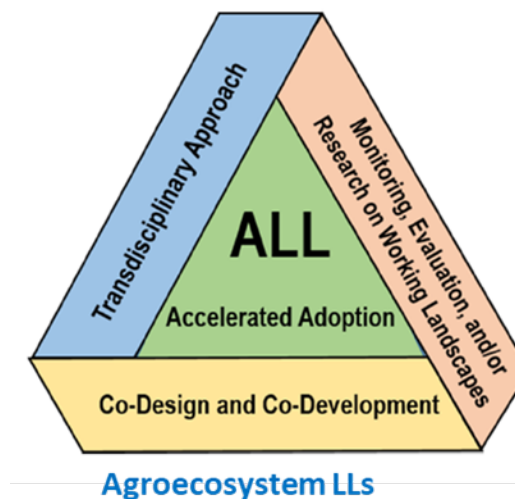
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Benefits and trade-offs of agroecological farming practices that contribute to soil health

<ul style="list-style-type: none">Reduction of GHG emissionsPreserving natural resourcesPromote soil health and qualityImproving water retentionStrengthen resilience to adapt to CCBuild sustainable value chains	<ul style="list-style-type: none">Climate change mitigationIncreased resilienceIncreased sustainability (economic, social, environment, health...)Improved circularity
<p>Benefits</p> <hr/> <p>Trade-offs</p>	<p>Opportunities</p> <hr/> <p>Challenges</p>
<ul style="list-style-type: none">(Initial) reduced yields/ incomesNeed for herbicides (cover crops)Specificity of place-based solutionsIncreased uncertainty	<ul style="list-style-type: none">Need for supporting policiesLock ins of conventional approachesIncreased risks for farmersKnowledge gaps, management & sharingData availability & harmonisationLack of awareness

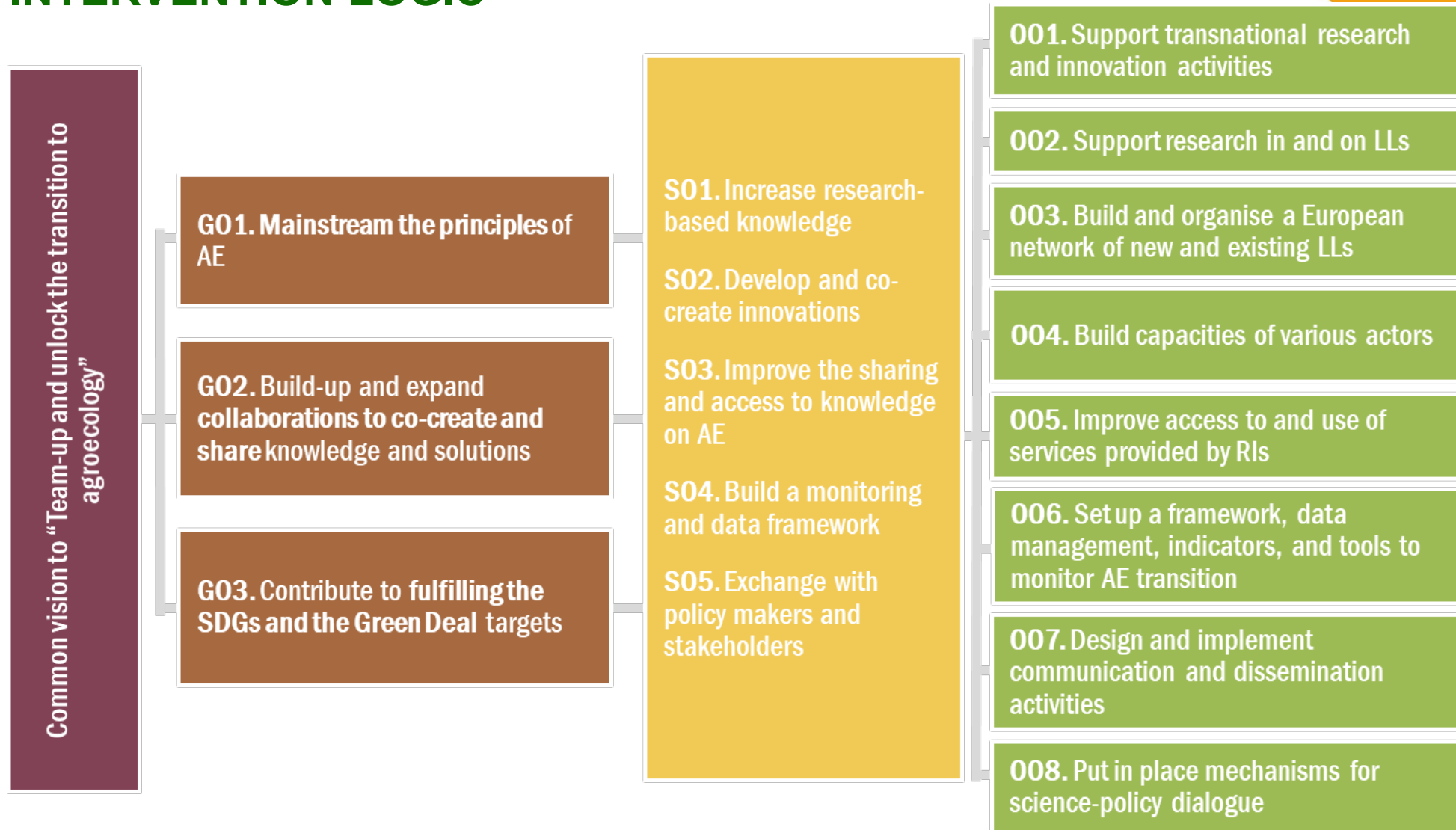
EU Partnership AGROECOLOGY

- Large-scale, long-term European research and innovation endeavor
- Support an agricultural sector that meets policy targets and responds to societal challenges
- Agroecology (AE) as a promising approach
- Real-life definition of problems and experimentation in co-creation with end-users and relevant actors (Living Labs: LLs)
- Research Infrastructures (RIs) provide support and make scientific data and knowledge available
- Pool the resources of the EC and the states involved to fund high-level research: 150m€/150m€ over 10 years
- 70 partners from 26 countries
- Basis: dossier and SRIA delivered by SCAR-AE, with input provided by the Coordination and Support Actions ALL-Ready and AE4EU and FACCE-JPI

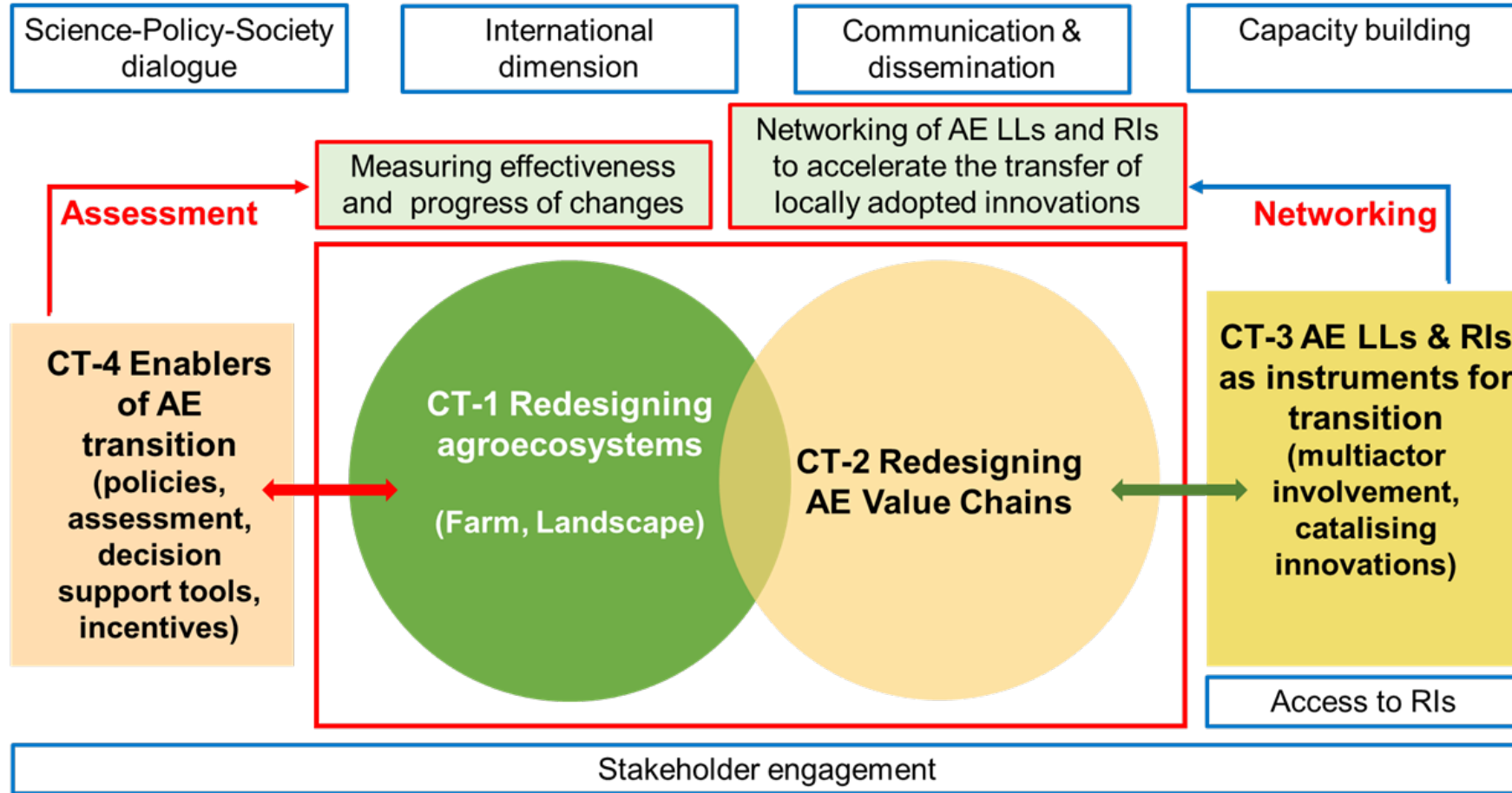




INTERVENTION LOGIC



SRIA: 4 CORE THEMES



CORE THEME 1 – REDESIGNING AGROECOSYSTEMS

Supporting change of practice

- Genetics and breeding for Agroecology
- Managing pests and disease through innovative agronomic practices
- Reducing fossil fuel inputs
- Provision of ecosystems services
- Restoration of biodiversity and nature

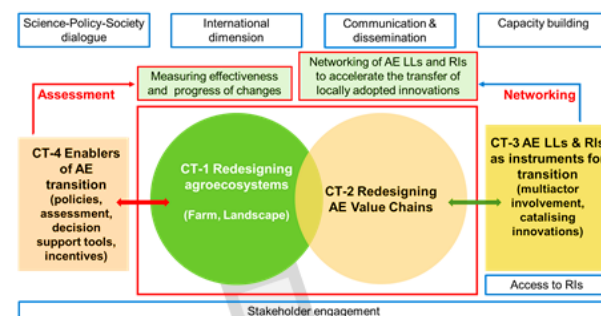
Landscape agroecology and territorial planning

- Participatory landscape planning
- Closing of nutrients and energy flows
- Functional integration of different land and livestock uses

Decision support tools for agroecology farmers

Analysing social aspects related to agroecology transition

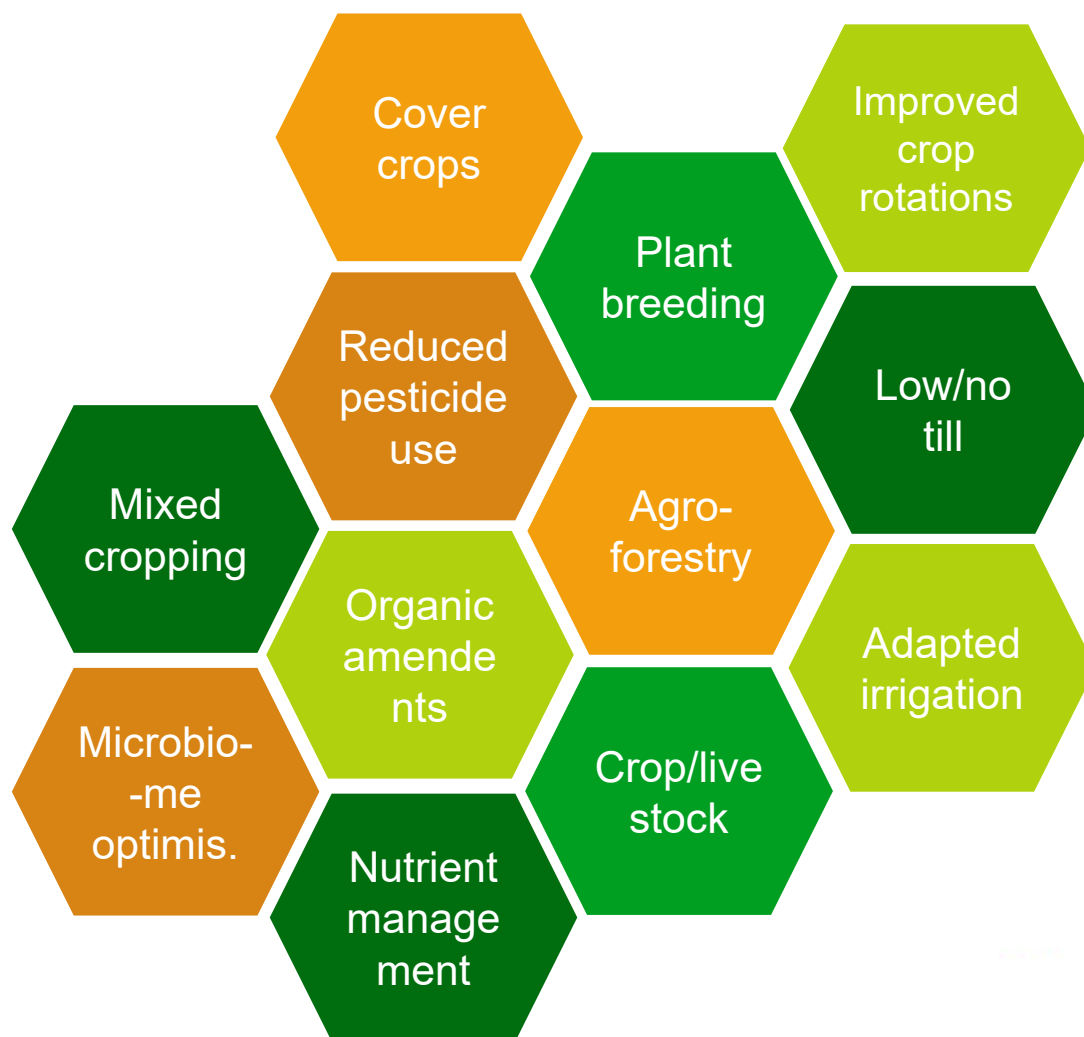
- Farmer's motivation and obstacles
- Inclusion dimension (age, gender)
- Role of common goods and engagement in AE transition



**CT 1 –
Reshaping
agroecosystems
(Farm, landscape)**

The partnership covers conventional & organic agriculture and focuses on agroecology transition

AGROECOLOGICAL PRACTICES SUPPORTING SOIL HEALTH





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THANK YOU FOR YOUR ATTENTION!

Heather.mckhann@agencerecherche.fr

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Our speakers



Grzegorz Siebielec

Research scientist

*Institute of Soil Science and Plant
Cultivation - State Research
Institute*



Judith Treis

Farmer

Biohof Ruhlengut



Heather McKhann

Coordinator

*European Joint Programming
Initiative on Agriculture, Food
Security and Climate Change
(FACCE-JPI)*



Ulrich Schmutz

Professor for Organic Horticulture
and Ecological Economics

Coventry University

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Q&A

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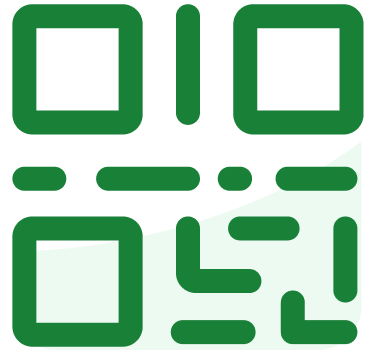
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Participatory exercise
Sli.do

Please take your mobile phones

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What do you think are the main gaps in promoting the implementation of farming practices for soil health that research still has not addressed?

① Start presenting to display the poll results on this slide.

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What are in your view the main needs or challenges for efficiently promoting the implementation of sustainable farming practices that contribute to soil health?

① Start presenting to display the poll results on this slide.

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What are in your opinion the most efficient way(s) to address those needs/challenges?

① Start presenting to display the poll results on this slide.

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What do you think the Mission Soil can / should do to efficiently promote farming practices for soil health?

① Start presenting to display the poll results on this slide.



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Conclusions and closing

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Coffee break

16:00-16:30

Building A : Main Room

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@EUAagri



@EUAagri
@EUgreenresearch



@euagrifood



European Research
Executive Agency (REA)



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y Tecnología Agraria y Alimentaria





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Programme Day 1 - Tuesday, 21 November

EUROPEAN MISSION SOIL WEEK

Time	Session Name	Building name
9:30 – 10:15	Welcome and opening session	<i>Main hall – Building A</i>
10:15 – 11:00	Setting the scene for the Mission Soil	
11:00 – 11:30	Coffee Break	
11:30 – 13:00	The Mission Soil in a nutshell	
13:00 – 14:00	Lunch Break	
14:00 – 16:00	Breakout session 1 - Soil health for climate	<i>ICA Institute - Building C</i>
	Breakout session 2 - Soil health for food	<i>Press Room - Building D</i>
	Breakout session 3 - Farming practices for soil health	<i>Blas Cabrera Institute - Building B</i>
16:00 – 16:30	Coffee break	<i>Main hall - Building A</i>
16:30 – 16:45	Reporting from breakout sessions	
16:45 – 17:45	Launch of the international research consortium on soil carbon	
17:45 – 18:15	Mission Soil photo competition award ceremony	
18:15 – 19:00	Cocktail & Networking	

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Audience Q&A Session

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