

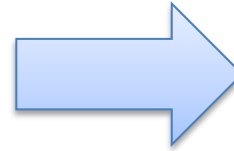
# Innovation on Agroecology to support a transition to more sustainable and resilient agrifood systems



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LifeWatch ERIC ICT Core

# Transition toward sustainable agriculture

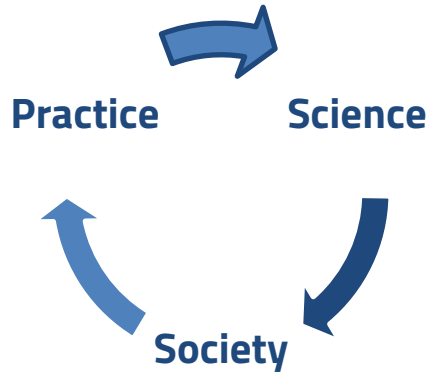
High-external input resource-intensive modern agricultural systems have caused...



- **massive deforestation,**
- **water scarcities,**
- **biodiversity loss,**
- **soil depletion,**
- **high levels of greenhouse gas emissions,**
- **inequalities,**
- **...**

# Transition toward sustainable agriculture

**Agroecology** is the science of **ecological process** applied to **agricultural production systems** benefiting from the interplay of **science, technology** and traditional or **indigenous knowledge** by farmers and stakeholders in value chains



# LifeWatch ERIC working toward an Agroecology Transition



**DemeterWatch** is the working group in **LifeWatch ERIC** that aims to promote and facilitate the transition toward Agroecology through the use of digital tools and networking

More than **20 participants** of **7 countries** from different research institutions, with a strong focus on **Portugal-Spain collaboration**



LifeWatch ERIC  
**Tesseract**



# \_Agroecology Living Labs and Research Infrastructures

## An European project preparing the Partnership on Agroecology Living Labs and Research Infrastructures

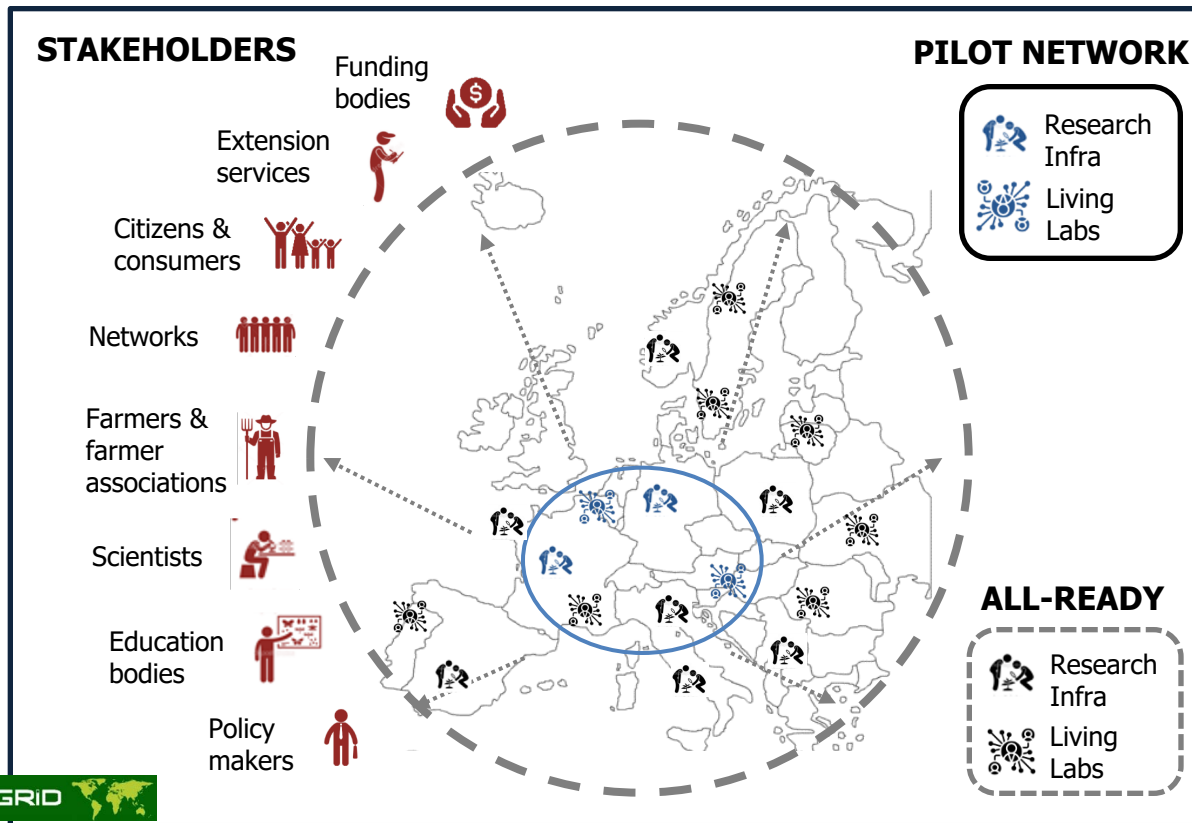


- Coordination and Support Action
- Start date: 01 November 2020
- End date: 31 October 2023
- Funded under Horizon 2020
- EU contribution: € 2,136,174.00
- Consortium of 13 partners (details on next slide)
- Coordinated by INRAE in support of FACCE-JPI

Network Partnership  
Living Labs Organic farming  
**European**  
Capacity building Agroecology  
Open Innovation Agrobiodiversity  
Soil functions Pilot activities  
Research Infrastructures  
Agroforestry



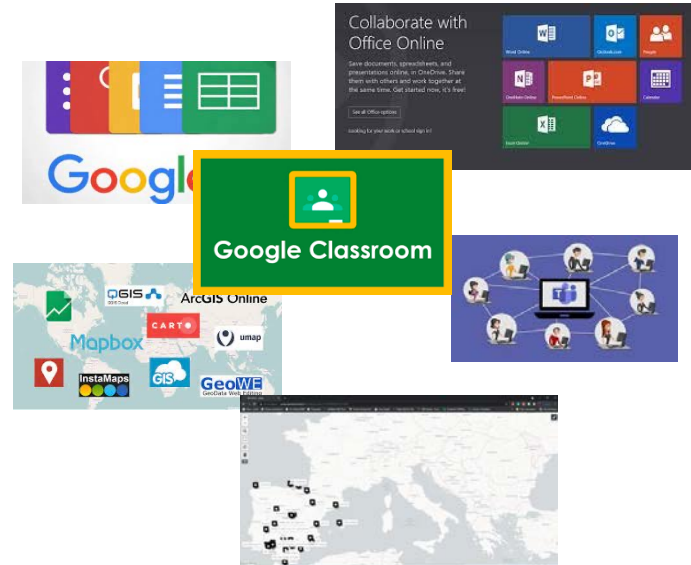
# \_Agroecology Living Labs and Research Infrastructures



**ALL Ready**

# LifeWatch ERIC | Virtual Research Environments VREs

A **Virtual Research Environment** is a **web-based workspace** providing seamless access to all services a **data-user needs** to do **data-related work** and **collaborate** with the community to create **new knowledge**. A VRE facilitates **working with data** in a more efficient way and **improve collaboration** between different users (LLs, RIs, end-users, policy-makers, citizens, etc.)



# \_What we provide | VREs

With a VRE, data are...

- ✓ OPEN
- ✓ EASY TO LOCATE
- ✓ WELL DESCRIBED
- ✓ EASY TO USE
- ✓ TRANSPARENT
- ✓ REPRODUCIBLE
- ✓ INTEROPERABLE

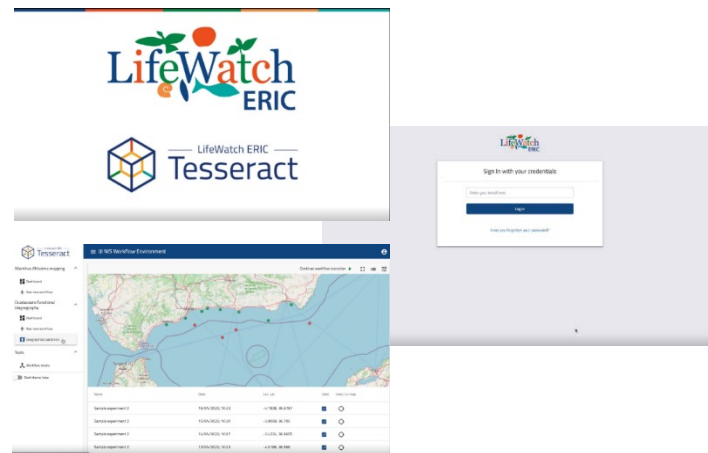
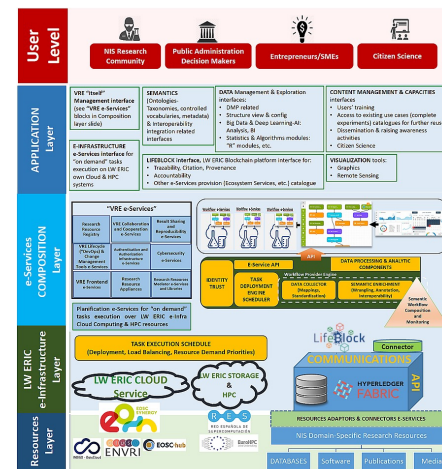




# \_What we provide | VREs

## Some other advantages...

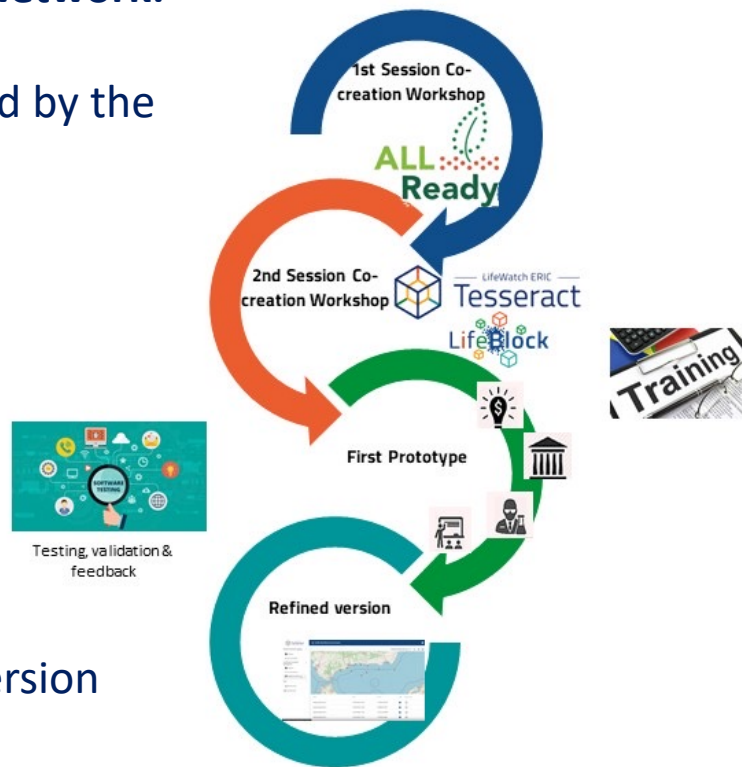
- ✓ User-friendly interface
- ✓ Different access points for different user types
- ✓ Co-designed, co-developed, co-validated
- ✓ Users need less computing resources locally
- ✓ No more need to install or upgrade the software
- ✓ No more need to download data from various centres
- ✓ A huge potential to incorporate new e-services in the future
- ✓ Easy to share data and results, following FAIR principles



# \_AgroEcology VRE | ALL-Ready

## Living Labs and Research Infrastructure from the Pilot Network:

- **Identification of LLs and RIs needs** that can be covered by the Agroecology VRE
- Definition of a **case study** for the first version of the Agroecology VRE, including databases, functionalities, visualization
- Contribution to the **validation and evaluation** of the Agroecology VRE
- Provision of **feedback** and contribution to a revised version



# \_ AgroEcology VRE | ALL-Ready

What?



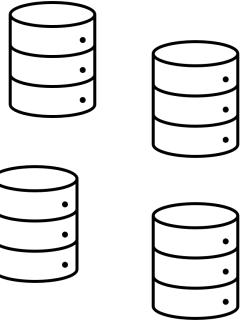
LLs & RIs...



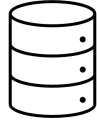
Agroecology VRE

... the scientists,  
policy-makers,  
advisors  
collaboratively...

... contributing to a  
transition towards  
agroecology in Europe  
through collaboration  
between LLs and RIs.

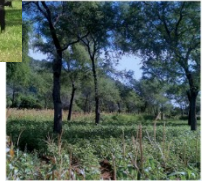
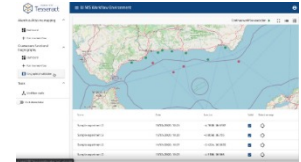


... &  
other  
data  
sources



...analyse data to  
provide advice about  
agroecology  
practices...

Very easy workflow!

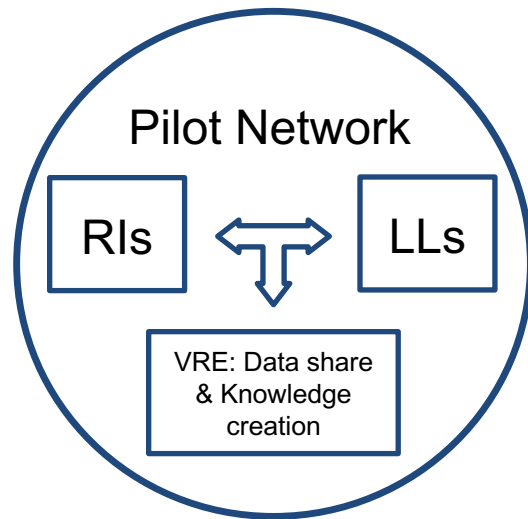


# \_AgroEcology VRE | ALL-Ready

## Why?

Taking into consideration that:

- **RIs and LLs are instruments** contributing to amplifying the **transition to agroecology in Europe**.
- ALL-Ready will map and analysis **what works, where and why**.
- **Pilot network** will be the **basis for sharing of knowledge and data** as well as capacity building.



Virtual Research Environment (VRE) will facilitate the **access to agroecological-related information**, in a safe, secured and trustworthy system

# \_AgroEcology VRE | ALL-Ready

## How?














Inputs: best practices

Context

Methodology

Outputs: KPIs,  
**Agroecosystem  
Services**

This **approach** will allow to:

- verify good practices    
- replicate practices 
- scale up from RIs to LLs  
- understand the past 
- assess future scenarios  
- help decision-making processes  
- keep citizens informed and involved 

User  
Level



NIS Research  
Community



Public Administration  
Decision Makers



Entrepreneurs/SMEs



Citizen Science





# \_AgroEcology VRE | ALL-Ready

## Benefits?



### Short-term:

- First, **providing a tool for the EU Partnership** that allow **sharing of knowledge** and **data**.
- Knowledge management** and **knowledge hub** allowing to the final user to identify the source and link with the specific context where the agroecological knowledge has been developed.



# \_AgroEcology VRE | ALL-Ready

## Benefits?

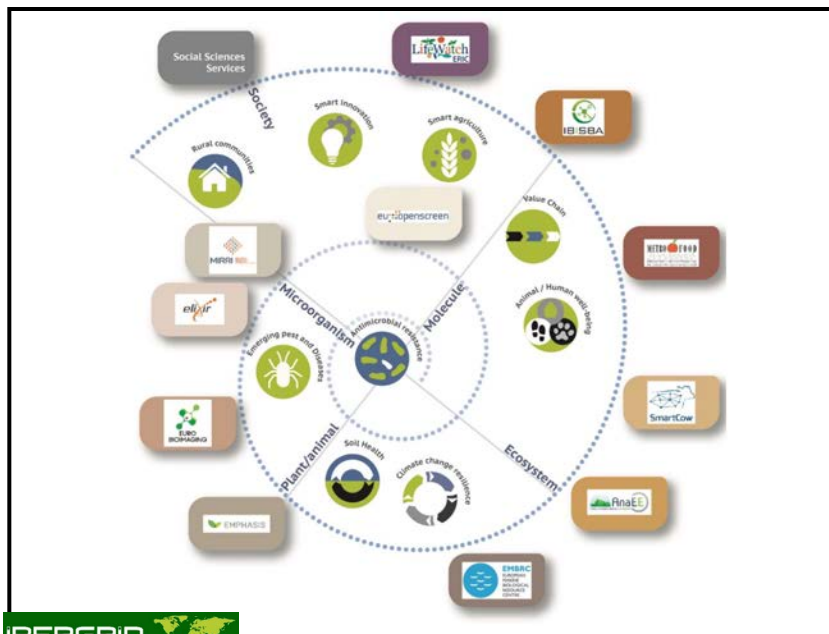
### Long-term:

- Potential to **help farmers and farmer associations** by enlarging their network, monetize their know-how, participate in funding calls, etc.
- Legitimate system for **accounting the environmental and socioeconomic benefits of agroecology practices, using LifeBlock.**
- Knowledge based decision support systems for **policy-makers** (e.g. for incentivization systems).
- Knowledge based decision support system for **funders** (e.g. prioritization system, open calls, etc.).
- Possibility to have services for **citizen science.**
- And much more...



# Services to farmers, researchers, public administration and citizens

## AGROSERV



And Digital providers! Stay tuned Path2DEA!

### What we do?

#### WP5 – Building a community of users on Agroecology & developing an engagement plan



#### WP7 – Developing a roadmap for long-term sustainability beyond 2027



#### WP20 – Implementing integrated and customized portfolio of services

##### Virtual Research Environments (VRE) for Agroecology

- Generation of Virtual Spaces for collaboration and networking
- Gathering, processing and integration of datasets
- Development of decision making modeling and simulation tools
- Ecosystem services tokenization

# Cooperation as best practice



*\*Take  
home message*

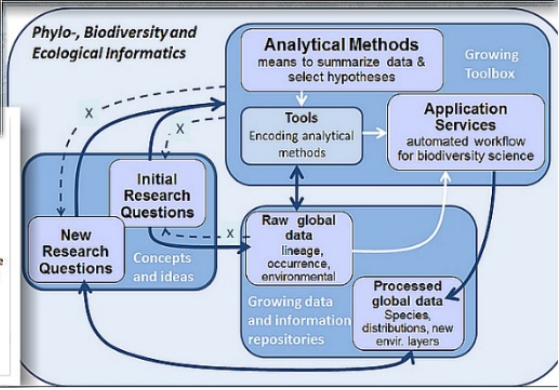
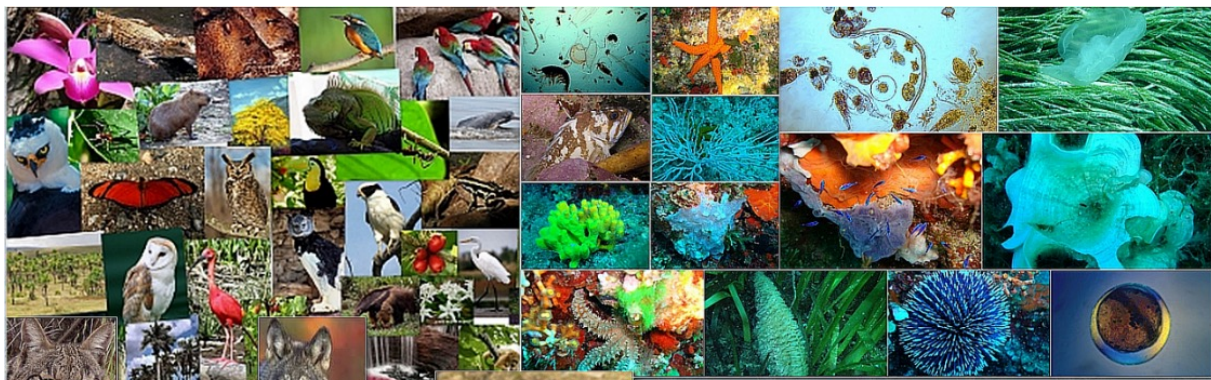


**Strategic level:** According to **FAO-UN & SDG 2030, COP, and EU Green Deal & Biodiversity 2030** objectives to facilitate a transition to more sustainable and resilient agrifood systems. The creation of S&T+I cooperation with key global actors (**IICA, IKRI, SCAR, FAO**) to guarantee the implementation of agroecology principles in agricultural practices and policies.

**Tactical level:** *“Not reinventing the wheel”*: Reinforcement of their existing Communities-of-Practice, particularly those currently working around successful-good practices performed by **FAO-UN** duly engaged by RIs initiatives such as **LifeWatch ERIC**, among others. **In fact, LifeWatch ERIC proposes to initially consider & opening-up initiatives in this regard in the context of EU-LAC and EU-AFRICA AgroEcology cooperations.**

**Operational level:** Creation of an “essential e-Research Collaboration middleware” based on **LifeWatch ERIC Tesseract VRE & LifeBlock e-Tools** to support facilitate knowledge sharing, networking and data and innovation management addressed to researchers, farmers and cooperatives, policy makers and citizens to guarantee a transition toward sustainable agrifood systems, based on cooperation.





*Muito  
obrigado,  
gracias,  
thanks!*

