EU CAP NETWORK

Circular and organic soil management

EU CAP Network Cross-visit

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1. Introduction

This report presents the outcomes of the cross-visit between EIP-AGRI Operational Group projects (OGs) working in the field of circular and organic soil management, which took place on **28 - 29 June 2023 in Basilicata, Italy**. In the following sections, it presents the participants and projects who took part in this networking activity, the programme of the cross-visit, the main highlights, as well as the participants' feedback and evaluation of the cross-visit.

2. Participants and OG projects

Participants were selected from a call for expression of interest in participation, which was opened in May 2023. This call was widely disseminated via the EU CAP Network website, the newsletter on Innovation & knowledge exchange | EIP-AGRI, and with the support of the national CAP networks.

The cross-visit welcomed 21 participants from 8 OGs, coming from 5 EU Member States: Italy, Spain, Ireland, Cyprus and Greece. For the full list of participants, please refer to Annex I. According to their professional backgrounds, the participants' list included:

- 9 researchers
- 4 farmers / farm managers or farm workers
- 4 advisors on technical, economic, environmental and/or social dimensions for farmers/ foresters
- 1 farmer - advisor
- 1 Innovation support agent and/ or innovation broker
- 1 press and media coordinator
- 1 civil servant

Their respective OGs covered a range of issues and challenges within the field of circular and organic soil management. More information about the participating projects can be found on the EU CAP Network website.

3. Programme of the cross-visit

The cross-visit on circular and organic soil management took place in Basilicata, Italy, over one and a half days. The location was chosen carefully after the evaluation of the submitted applications under the open call, and with the expressed wish of the OGs from the region to host the visit and showcase their work and outcomes. For more details on the programme of the cross-visit, please refer to the cross-visit webpage.

During the morning of 28 June (Day 1), participants had the opportunity to familiarise themselves with all OG projects participating in the cross-visit. This introduction was immediately followed by a field trip to the "Dimitra" kiwifruit orchard, field site of the host OG TINNOGEPRA. There, the hosting OG demonstrated different tools and techniques for precision and organic soil management and irrigation systems, including measurements of soil moisture and root growth, as well as showcasing practices for the improvement of soil fertility, through the utilisation of green waste compost.

Another field visit took place during the afternoon of Day 1, to the social cooperative "La Generale", as the field site of host OG CERESO. There, participants were introduced to precision cereals farming, and learned about the techniques and sensor utilisation for the measurement of soil parameters. The project focused on innovative and niche pasta and bakery products through the reintroduction of ancient wheat into cultivation and product innovation.

During the morning of June 29 (Day 2), participants were invited to discuss their experiences, the challenges they are facing and solutions they have applied. The discussions were facilitated through several interactive sessions that encouraged them to work together on different topics of interest.

4. Summary of the main outcomes of the cross-visit

The main highlights of the cross-visit were predominantly referred to during the morning of Day 2, through discussions and interactive sessions.

When asked about the aspects of the cross-visit that were most valuable to them, participants were in unanimous agreement that the demonstrations and presentations during the field visits provided the most useful insights into techniques for improving soil fertility, which in turn could be applied within the scope of their own OGs.

A major point of inspiration highlighted from the field visits was the means by which projects could be continued past the end of the OG project period. The cross-visit experience also provided a useful insight into the importance of collaborating with other OGs, and how it may pave the way for better understanding of the different problems and solutions at hand, as well as synergising efforts in tackling both the problems and in developing solutions. Additionally, facilitating cooperation between OGs reduces the risk of overlap in the work undertaken by distinct OGs. Participants agreed that hosting face-to-face (physical) meetings was a very inspiring and most efficient means of exchanging information.

Following the identification of take-home messages, participants were invited to complete an exercise to identify their own challenges and solutions. There were many such challenges and solutions in common, as shown in the table below, and each participant was able to find a solution for a problem that was already identified, or to find a problem that could be solved with a solution already developed.

Summary of the main challenges highlighted, and solutions proposed during a 'post-it' note exercise:

CHALLENGES	SOLUTIONS
Financial	
The cost of compost and biochar	Carry out a financial approach of different composting systems
Cost benefit analysis of composting	
Valorisation of the environmental role of farming	Quantification of ecosystem services of farming management
Economic viability of environmental best practices	
Technical	
How to stimulate precision farming	Intercropping and support by IA
Establishing a common statistical methodology with common indicators for soil quality measurement	Common procedure or protocol to certify the production of high-quality compost
Management of soil spatial variability	Soil water content monitoring
Short and long-term soil fertility measurement - comparative analysis	Electrochemical surface analysis
	Digital soil mapping
	Learn from other similar experiences worldwide and adapt them to individual context
	Apply good compost quality-tailored to the specific type of soil
	Specialised machinery that doesn't mix or harm the soil but structures it
Environmental	
Soil erosion	Stimulation and control of the release of nutrients by different organic soil improvers in different conditions (soil types)
Low level of organic matter	Green manure usage for improving soil fertility and health
Increase and improve soil biodiversity	Increase organic matter Reduce tilling Protect soil from sun and other severe weather manifestations
	Mycorrhizae application
Water management / water sequestration	Shallow ploughing Minimum tilling Cover crops Green manure
Quality organic fertilisers	Research on organic fertilisers
Reducing chemical input application for both environmental and economical sustainability	Residue from anaerobic digestion
Combine conservative agriculture with organic management in arable lands / reducing tillage to reduce CO2 emissions and damage of the soil structure and fertility / Carbon sequestration	Promote common spaces to stimulate and support farmers' interaction / Put together experiences and try to model achievements of OGs to expand solutions' application

Additionally, many participants found synergies and opportunities for future collaborations with other OGs: participants were invited to indicate whether they saw possibilities for collaboration in the future with any of the OGs that were present. Clear identification of synergies was evident.

For instance, the representatives of Cypriot OG OLIVER highlighted clear synergies with the hosting OGs, as well as with others of the participating OGs. One of the main objectives of OG OLIVER is to demonstrate the positive contribution of the use of activated biochar in environmental processes, specifically in the soil-climatic environment of the agricultural areas of interest. Therefore, the OG members observed useful practices during the field visits in the form of using biochar to decrease the spatial variability in the soil surface (OG CERESO), as well as creating and utilising an app for measuring ecosystem services (OG TINNOGEPRA). Additional synergies were identified with OG SoilCycle in the common biochar production, and the use of digital soil hydrometers.

The Greek OG SoilCycle also identified common points of interest with host OG TINNOGEPRA, and took inspiration from their root-based soil quality measurement and LCA.

Additional synergies were observed with the Spanish OG Bioeconomia, which in turn identified synergies with the hosting OG TINNOGEPRA and OG AGRIBIOCONS in, respectively, their approaches to root measurements and soil erosion.

Confirming the above-mentioned synergies, the OGs that participated in the MCV in Basilicata are currently maintaining contact via e-mails and expressing their will and interest to continue working together in current and future projects and initiatives.

Annex I: List of participating OG projects

Participant type	Operational Group name
Host OG	OG CERESO - Optimization of inputs for sustainability of cereal crop systems in Basilicata
Host OG	Technological transfer of innovative agricultural practices within fruit and horticultural ecosystems (TINNOGEPRA)
Participant OG	Finalized FRUIT Growing Organic Carbon Footprint - FRUTTI_FICO
Participant OG	Application of circular economy principles to 2 pilot cultivations using Ecolabel soil improvers (SoilCircle)
Participant OG	Talamh Beo (Soil Biodiversity Literacy and Enhancement EIP) Operational Group
Participant OG	Transfer and adaptation of organic conservation agriculture to the Marche farming systems (AGRIBIOCONS)
Participant OG	Circular bioeconomy of proximity: organic fertilisation in organic and conventional vineyards
Participant OG	Optimizing the economic and technical performance of agricultural inputs by applying activated biochar to vegetable crops in Nicosia region (OLIVER Nicosia Vegs)

More information about the participating projects can be found on the EU CAP Network website.

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