



# Climate adaptation on the ground – innovative solutions to build farm resilience

**Cross-visit  
Final report**  
26-27 June 2024  
Thessaloniki, Greece



Funded by  
the European Union

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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 climate adaptation on the ground and striving for innovative solutions to build farm resilience, which took place on 26–27 June 2024 in Thessaloniki, Greece.

The following sections present the participants and projects that took part in this networking activity, the programme of the cross-visit and the main outcomes, as well as the participants' feedback on the cross-visit.

## 1.1. Objectives

The impacts of climate change, such as increased surface temperatures, changing precipitation patterns, and prolonged droughts, are becoming increasingly evident. People working on and with the land are the most directly affected. Innovative agricultural practices are key to achieving the EU climate goals and making the sector more resilient. By testing and implementing innovative practices on the ground, OGs are helping agriculture adapt to climate change such as tackling the effects of extreme weather events, water scarcity, loss of biodiversity, new emerging pests and diseases, and loss of soil organic matter through erosion.

## 1.2. Purpose and main goals

The **purpose of cross-visits between projects** is to provide opportunities for cross-border knowledge exchange and peer-to-peer learning between OGs. These visits will create opportunities for informal exchanges of good practices and innovative solutions among OG representatives from different Member States. They may also help foster potential future collaborations between projects/actors in the research and innovation area and/or lead to the creation of transnational OGs.

The **main goals of cross-visits** are to:

- › enable peer-to-peer learning and knowledge exchange on the innovations that the projects involved address and on their multi-actor approach, allowing a deeper understanding of the innovation processes, providing further inspiration to participants and fostering synergies between projects
- › discuss common challenges, research needs from practice, inspirational ideas, and potential solutions
- › exchange and further disseminate project findings across the EU
- › create opportunities for potential future collaborations and/or partnerships



## 2. Participants and OG projects

Participants were selected through a call for expression of interest which opened on 19 March 2024, and was widely disseminated via the EU CAP Network website, newsflash, and the newsletter on Innovation & knowledge exchange | EIP-AGRI, with the support of the national CAP networks.

The cross-visit welcomed 22 participants from 14 OGs, coming from 7 EU Member States: Greece (5), Hungary (4), Italy (1), Latvia (2), Lithuania (2), Poland (6) and Spain (2). Additionally, there was participation from a representative of a Horizon Thematic Network (Oper-8) dedicated to the networking of Operational Groups, three additional local guests (including two representatives from the regional government of Central Macedonia and one additional representative from the host OG), and one representative from the Greek National CAP Network.

According to their professional backgrounds, the OG participants' list included:

- > 6 Farmers
- > 8 Researchers
- > 5 Advisors
- > 3 Innovation Consultants/Brokers

The EIP-AGRI Support Facility (SF) sought strong collaboration in the organisation of the cross-visit with the regional Managing Authority of the Region of Central Macedonia, which helped organise the cross-visit and was invited to participate and give a welcoming speech at the beginning of the first day.

Participating OGs covered a range of issues and challenges within the field of climate adaptation on the ground and are striving for innovative solutions to build farm resilience. The list of those OGs is provided in the table below:

**Table 1. List of Participating OGs**

No	Operational Group	Country
1.	Sustainable soil management and precision agriculture techniques to ensure the viability of arable crops (PreConAgri)	Greece
2.	Innovative post harvesting technologies to restore soil sustainability (InoTechSoil)	Lithuania
3.	An innovative plant production management system with emphasis on optimisation of machine operation, fertilisation and protection of soil biodiversity (SFC – FTF)	Poland
4.	Diversification of cover crops and use of multifunctional properties to increase soil sustainability and carbon sequestration potential and reduce fertiliser requirements	Lithuania

No	Operational Group	Country
5.	Application of circular economy principles in two pilot crops using Ecolabel soil conditioner (SoilCircle)	Greece
6.	Investigation of the possible pesticide and herbicide free cultivation of GMO-free, high nutrient content (PROFAT) soybeans at seven several Hungarian soybean production areas	Hungary
7.	Innovative system of agro-meteorological monitoring, forecasting and operational planning of irrigation at farms in the Kujawy region	Poland
8.	Control of crop variability and maturation time through precise application of growth regulator in conjunction with real-time satellite monitoring of crop response (SatAgro)	Poland
9.	Digital tools and early warning system for the adaptation of olive production to the climate change (OLIVEALARM)	Greece
10.	Clonal selection of Kékfrankos in Hungary	Hungary
11.	Kernza® (Thinopyrum intermedium), a new eco-sustainable cereal	Spain
12.	Optimization of cattle housing conditions and production efficiency through application of innovations in barn and calf building equipment	Poland
13.	The use of solar energy for heating greenhouses and processing produce	Latvia
14.	Increasing the uptake of soil nutrients through the use of mycorrhizae (Farmamyc)	Greece

All the participating projects were relevant to the cross-visit subject. In addition, all the selected OGs are tackling the same type of challenge or are testing the same type of solutions.

Thus, their experiences and different project implementation stages, willingness to learn new practices, and discuss their findings and adopt innovative results created the necessary conditions for the identification of potential synergies between projects.

More information about the participating projects can be found on the EU CAP Network website can be found [here](#).



### 3. Programme of the cross-visit

The preparation of the agenda involved not only the EIP-AGRI SF team and DG AGRI representatives, but also representatives from the Central Macedonia region and hosting OGs.

The first day of the cross-visit in Thessaloniki started with a welcome by DG AGRI, The representative of the regional Authority

of Central Macedonia then provided an introduction to agriculture and forestry in the region and the challenges posed by climate change. The introduction to the cross-visit programme was then provided by the EIP-AGRI SF.



Day 1 of the event included a series of presentations by all OG participants. These presentations covered topics such as sustainable soil management, precision agriculture, innovative post-harvest technologies, and the use of digital tools for early warning systems. Several projects aimed to improve soil sustainability, optimise

machine operation and irrigation systems, and explore crop diversification to enhance resilience against climate impacts. There were also discussions on reducing fertiliser requirements and exploring pesticide-free farming options.



The plenary discussion on Day 1 of the cross-visit focused on identifying common challenges and existing and missing solutions related to climate adaptation in agriculture. Participants used

guiding questions to facilitate a productive dialogue on the shared issues faced by OGs.





Key **common challenges** that were highlighted during these discussions included the difficulty in incorporating new crops into crop rotation, managing water resources efficiently, and the rapid pace of climate change, which outpaces the ability to adapt. Other concerns revolved around high temperatures in Mediterranean countries, erratic precipitation patterns, and the economic sustainability of farming practices under changing climate conditions.

A central theme was the efficient use of natural resources such as water and soil. Participants noted that while some crops are no longer viable in certain regions due to changing conditions, there is a need for the adaptation of new crops and technologies. Water scarcity and carbon sequestration measurements were recurring concerns, with a particular emphasis on the need to convince farmers to adopt new water-saving and soil-improving solutions. The decreasing availability of water and increasing heat due to climate change were seen as critical barriers to maintaining current farming practices.

**Common solutions** proposed during the discussion included the use of advanced technology such as precise irrigation and fertilisation, which could help address water management challenges but still needed improvement. There was also support for the adoption of new farm management practices, including no-till planting and



regenerative agriculture approaches like mulching. Soil science and the development of new crops were mentioned as vital for future adaptation. Participants emphasised the importance of research and dissemination of results to ensure the widespread adoption of these practices.

However, **several solutions are still missing**. Among these, there were references to effective weed management, the development of low-energy consumption weeding technologies, and the use of new soil additives to improve soil nutrition. Other gaps that were identified included strategies for managing increased drought periods, monitoring soil health through sensors, and precision agriculture tools such as UAVs and remote sensing. There was also a call for improved water use through rainwater collection and regenerative agriculture techniques. Overall, participants stressed the need for further innovation and support to overcome the challenges posed by climate change in agriculture.

In the afternoon, participants went on field visits to two Greek OGs. The first was the **FARMAMYK project**, which focuses on increasing soil nutrient uptake using mycorrhizae at a commercial spring onion farm. Two actors involved in the project, a representative of the farmer group, and a representative of the Faculty of Agriculture at Aristotle University of Thessaloniki, presented the OG and answered numerous questions from the participants.





The second visit took place at the **SOIL CIRCLE project**, which applies circular economy principles to two pilot crops using an eco-labelled soil conditioner. Here, the participants were welcomed by the local farmer representative, head of the Farmers Group Agrotikes Epicheiriseis Magalis Panagias GP, and the head of the enterprise which is responsible for the composting and treating residues, as well as the technical director of an agricultural advisory

and innovation support organisation involved in the Operational Group. The project and procedures concerning residue collection and treating were presented, which was followed by a session of questions from participants about the OG project which were answered by the host OG representatives. The group then moved to the field where compost has been applied, and another session of questions took place there.



Both visits aimed to provide hands-on demonstrations of innovative techniques and their practical applications in farming.





Day 2 of the Cross-visit focused on reflecting on the lessons learned from Day 1 and fostering collaboration between OGs, featuring interactive networking sessions to discuss potential future partnerships and projects. It began with a reflection session where participants shared their insights from the field visits and

identified actions they would take moving forward. A word cloud exercise captured key takeaways, with discussions highlighting the importance of hands-on learning and practical examples of climate adaptation solutions implemented by various projects.

**Figure 1. What inspired you from the field visit (Total answers - 36)**



Source: EU CAP Network

**Figure 2. What take away message did you take from yesterday? (Total answers - 48)**



Source: EU CAP Network

The next session focused on identifying **complementarities among OGs**.

Guiding questions were designed to facilitate discussions:

- > Can you share examples of successful collaborations within your group that have strengthened your project? (Success stories)
- > What innovative practices or approaches have emerged from your project that could benefit other groups? (Innovative Practices)

- > Can you provide examples of how your project's outcomes have benefited other operational groups or the broader agricultural community (Impact and Outreach)
- > What valuable lessons or best practices have you learned from other operational groups? (Mutual Learning)
- > In what ways have you shared resources (e.g., technology, knowledge, manpower) with other groups or stakeholders? (Resource Sharing)





Participants shared examples of successful collaborations, such as using compost from one project to enhance water retention in another and combining livestock and crop systems to benefit soil health and productivity. They discussed innovative practices that had emerged from their projects, including the use of smart farming solutions and technology transfer between different countries and regions. Mutual learning was also emphasised, with many OGs recognising the value of resource-sharing, such as technology, knowledge, and manpower, to improve project outcomes.



The following session consisted of two inspiring presentations:

- › A presentation from DG AGRI which focused on opportunities for involvement and collaboration for Operational Groups provided under Horizon Europe such as Multi-actor projects, Thematic Networks, Advisory Networks, Living Labs and Lighthouses;
- › A presentation from the Agricultural University of Athens, the leader of 'Oper-8' Horizon project, an EU-wide Thematic Network for Operational Groups that supports and promotes solutions for non-chemical weed control, building upon the knowledge and outcomes of 8 Operational Groups from across the EU and stimulating knowledge exchange among all relevant actors and stakeholders in the field.

The interactive networking session that followed delved deeper into **potential future collaborations**.

The guiding questions designed to facilitate the discussion were:

- › In what ways can you collaborate with other operational groups to accelerate the adoption of innovative practices and technologies? (Innovation and technology transfer)
- › Are there areas of research where you see a potential for joint efforts or shared resources? (Common Goals)
- › What resources (e.g., technology, data, expertise) do you think could be effectively shared among different operational groups to enhance collaboration? (Sharing resources)
- › How can the communication and networking among different operational groups be improved to identify and act on collaboration opportunities? (Networking and communication)

Participants explored ways to accelerate the adoption of innovative practices by collaborating through cross-visits, online platforms, and sharing data from pilot farms. Several areas of research, such as climate adaptation, precision farming, and soil biodiversity, were identified as opportunities for joint efforts. The importance of communication and networking among OGs was stressed, with suggestions for using tools such as Zoom meetings, thematic workshops, and databases to enhance collaboration and share expertise.





The event emphasised the need for constant communication, cross-visits, and information sharing to tackle common challenges. Participants highlighted the importance of innovation and technology transfer in addressing climate change and discussed the benefits of

joint research efforts and resource-sharing. The cross-visit ended with a sense of collective progress, as participants expressed optimism about future collaborations and the continued exchange of knowledge and practices to build resilience in agriculture.



The event concluded with a summary of the outcomes, an evaluation of the event by the EIP-AGRI Support Facility and closing remarks by DG AGRI. As a result, the cross-visit highlighted the importance of collaborative efforts to address climate change challenges in

agriculture and supported further knowledge-sharing and innovation across Europe.

The detailed [programme](#) of the cross-visit can be found on the EU CAP Network website.



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

The four key outcomes of the EU CAP Network Cross-Visit 'Climate adaptation on the ground - innovative solutions to build farm resilience', are summarised in the following points:

- › **Peer-to-peer learning and knowledge exchange:** The cross-visit provided a platform for OGs to share innovative approaches and technologies being tested in different regions. Participants learned about projects involving precision agriculture, sustainable soil management, water conservation techniques, and the use of digital tools for early warning systems. The event also highlighted the importance of applying these innovations to local contexts and adapting solutions based on regional challenges.
- › **Common challenges and solutions:** Participants discussed shared challenges such as water scarcity, extreme weather events, soil degradation, and crop viability under changing climate conditions. Common solutions identified include the use of precision farming, regenerative agriculture (e.g., no-till practices and mulching), and smart technologies for optimizing resource use. However, gaps remain in areas such as weed management, soil health monitoring, and low-energy weeding technologies.
- › **Collaboration and networking:** The event facilitated discussions on future collaborations, with participants recognising the need to work together to address common climate-related challenges. Opportunities for collaboration were identified in research areas such as climate adaptation, soil biodiversity, and precision farming. Sharing data, expertise, and resources across borders was seen as essential for accelerating the adoption of innovative practices.
- › **Future directions:** Participants expressed optimism about the potential for future collaborations, particularly through cross-visits, online platforms, and thematic workshops. The importance of continuous communication and resource-sharing was emphasised, with a focus on building stronger networks to support innovation and climate adaptation in agriculture across Europe.

The cross-visit successfully fostered a sense of shared responsibility in addressing the impacts of climate change, laying the groundwork for future joint efforts and knowledge dissemination.



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