Cross-visit ‘Circular and organic soil management’

Basilicata, Italy
28-29 June 2023

Funded by
the European Union

PROJECT «AGRIBIOCONS»

APPLICATION OF ORGANIC CONSERVATION AGRICULTURE IN MARCHE REGION (ITALY)

Project funded by the RDP Marche 2014-2020, Sub-measure 16.1 – Support for the creation and operation of EIP Operational Groups Action 2 «Financing of Operational Group» – ID 29182

È TEMPO DI AGRICOLTURA

PSR MARCHE 2014-2020

Unione Europea / Regione Marche
PROGRAMMA DI SVILUPPO RURALE 2014-2020

FONDO EUROPEO AGRICOLO PER LO SVILUPPO RURALE: L'EUROPA INVESTE NELLE ZONE RURALI

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MINISTERO DELLE POLITICHE AGRICOLE ALIMENTARI E FORESTALI

REGIONE MARCHE

Information about the project

- **Title:** Transfer and adaptation of organic conservation agriculture to the Marche farming systems (AGRIBIOCONS)
- **Country and region**: Italy, Marche region
- **Start – end date**: February 2019 – February 2023

Context

- The AGRIBIOCONS project starts from the consideration that many agricultural soils in the Marche region are subject to marked **erosion** and depletion in **organic carbon and nutrients** due to the intrinsic characteristics of the soils, the geomorphology of the territory, climatic conditions, and inadequate management practices.

- All this leads to a progressive **reduction in soil thickness and its physical, chemical, and biological fertility**, negatively affecting edaphic processes, biodiversity, and thus crop yields.

- In addition to that, the project intends to provide organic farmers with an innovative approach that can **enhance sustainable and healthy products on the market**.

Project partners

- **Società Agricola Biologica Fileni** (organic farm specialised in organic chicken production and marketing).
- **Società Agricola Agri Blu** (organic farm that produce cereals. In the project, they purchased machinery necessary to implement the agricultural model).
- **AEA s.rl.** (technological partner, they developed a prototype to measure soil erosion).
- **Arca Srl Benefit** (research and dissemination partner specialised in organic regenerative farming consultancy).
- **Università Politecnica delle Marche** (research partner. In the project, the Soil Science and Agricultural Genetics departments were involved).
- **External consultants**: Gemini delle Vedove and Stefano Bortolussi.

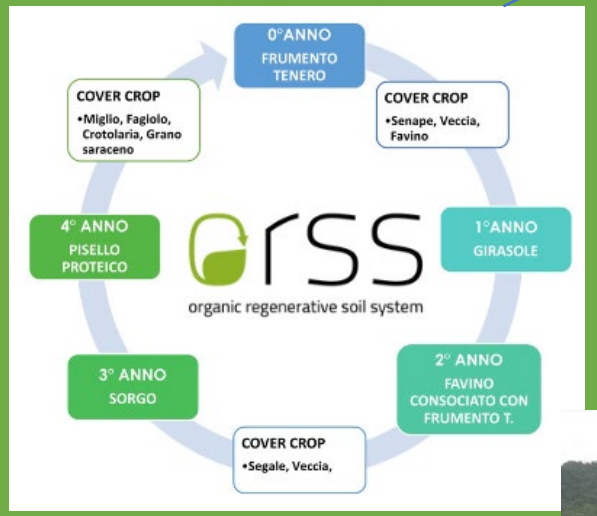
Objectives

1. **Soil conservation** and improvement of its physical, chemical, and biological fertility.
2. Introduction of **conservation and soil-improving tillage and cultivation techniques** in the organic farming system.
3. Validation of a more complete **organic agricultural model** to be spent on the market thanks to an even more sustainable and healthy agri-food product.
4. Introduction and **dissemination of technological tools** and information support.
5. Increase the **competitiveness** of **organic farms.**

Solutions implemented

1. **The proposed organic conservation agricultural** model comprehends the application of:
   - ❑ Organic management
   - ❑ Crop diversification and rotation
   - ❑ Minimum tillage realised with specific machinery
   - ❑ Cover crops
   - ❑ Intercropping

Crop rotation



Passive machines not driven by power take-off

EU CAP Network cross-visit ‘Circular and organic soil management’

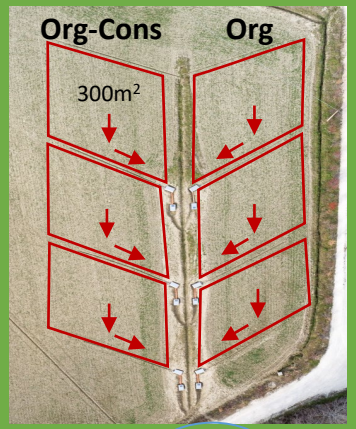
28-29 June 2023, Basilicata (Italy)

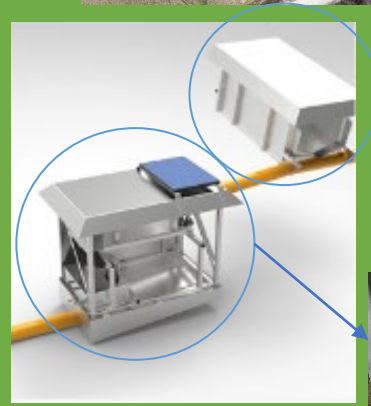
All information on the cross-visit is available on the event webpage:

https://eu-cap-network.ec.europa.eu/events/eu-cap-network-cross-visit-circular-and-organic-soil-management_en

Solutions implemented

2. **6 prototypes** were created by partners and installed to measure the intensity of **soil erosion** and characterize the water and sediments lost in the fields managed with organic agriculture and organic conservation agriculture.



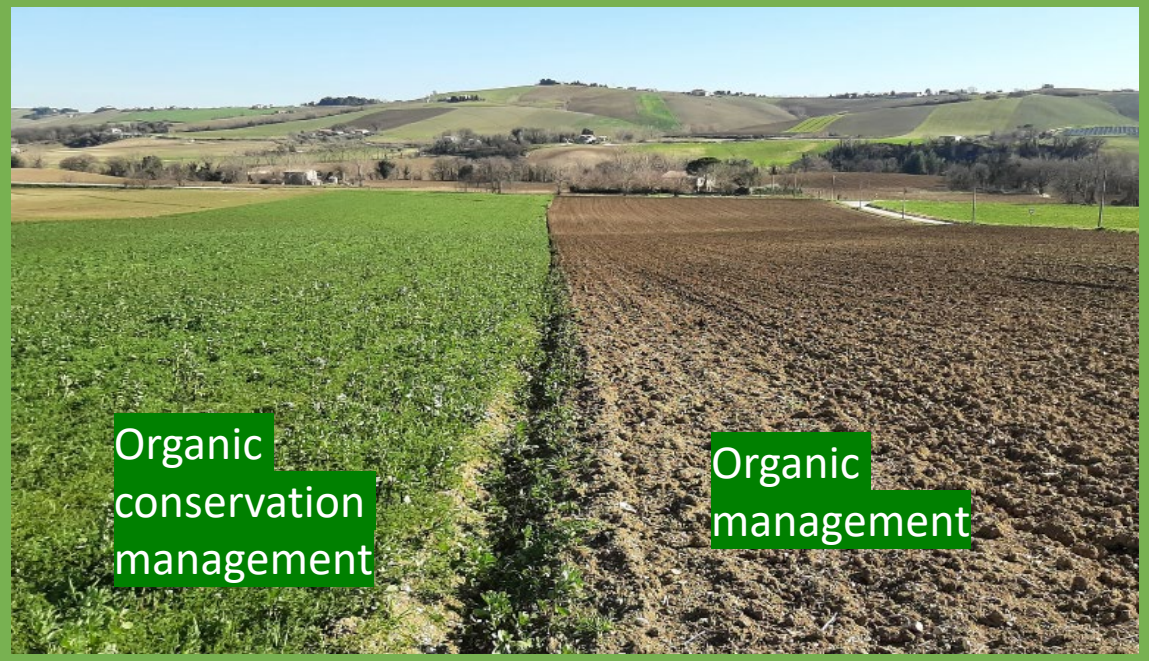


Sediment collection

Water collection

Final results - How did we measure them?

- It is important to specify that in the 3 year-long experimentation we employed plots of land divided into **organic and organic conservation management**, in order to verify the results by comparing them.



The field experiment was carried out in **7 farms located along a topographical transect,** from medium-high hilly areas to platy coastal areas, representative of the **geo-morphological diversification** of the Marche region.

Final results

- **Comparable crop yields** between organic and organic conservation management
- **Agronomic and economic benefits** expected in the long term >5 years (higher crop yields and lower costs)
- **Higher average costs** in organic conservation management of approx. 250€/ha/year due to the cultivation of **cover crops**, which however generated the following benefits:
  - Approximately **+150 kg/ha/year of organic nitrogen in the organic conservation system**
  - **Soil erosion 10 times lower in organic conservation management** than in organic ploughed fields (5 ton of sediment eroded in organic fields and 0.5 ton in organic conservation fields)

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