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Results of the EIP-AGRI Focus Group: Soil Organic Matter in Mediterranean soils

Gottlieb Basch
University of Évora/Portugal
European Conservation Agriculture Federation

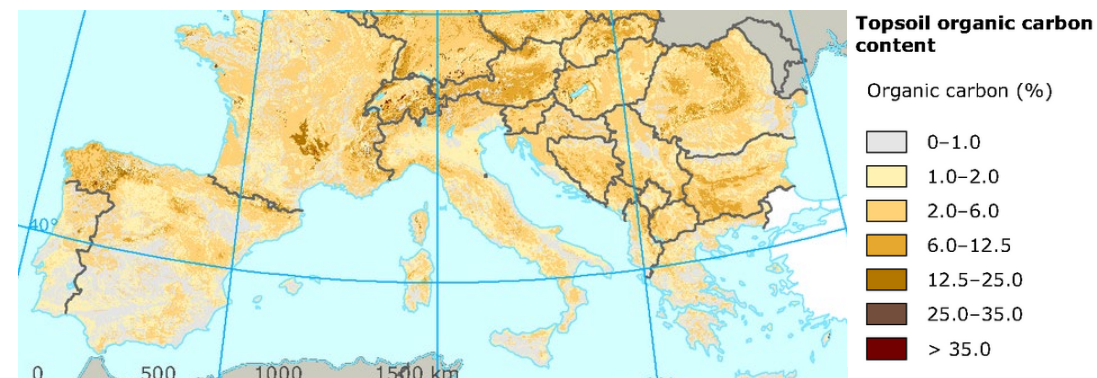


13-14 April 2021
EIP-AGRI Seminar 'Healthy soils for Europe:
sustainable management through knowledge and practice'

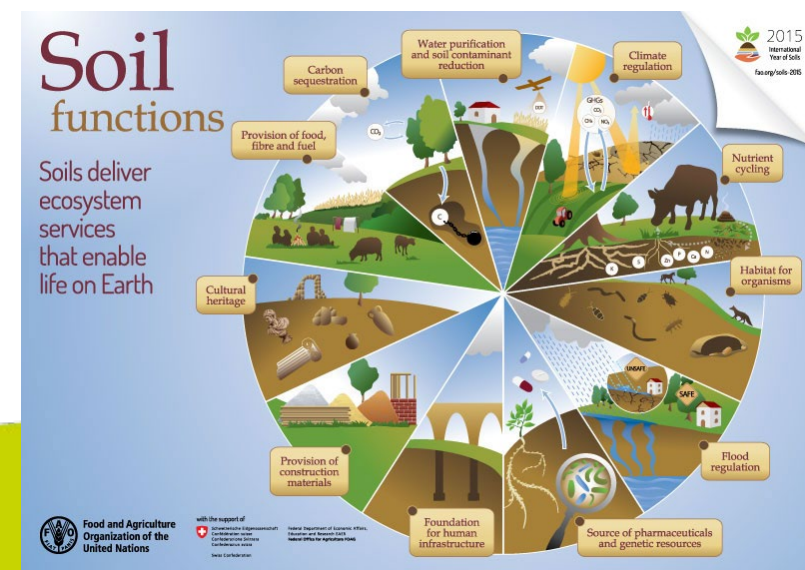
SOM in Mediterranean soils

- Key questions

1. How can we improve soil organic matter content in the Mediterranean region **in a cost-effective way?**



2. What new solutions for securing soil functionality and soil fertility can be proposed in this regard?



SOM in Mediterranean soils

- Approach question 1

- Ways to improve SOC contents based on:

Adding Carbon



- Agricultural Carbon sources
- Non-agricultural Carbon sources

Conserving Carbon

- Reducing Carbon mineralization

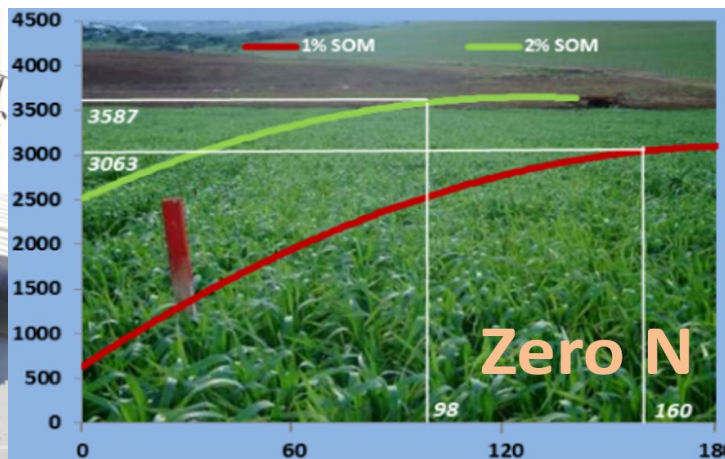
SOM in Mediterranean soils

- Approach question 2
 - Identification of ways to improve soil functionality and soil fertility in arable and permanent crops with regard to:

**Physical quality and
C sequestration**



**Chemical quality and fertility,
nutrients supply**



**Biological quality and
biological activities**



SOM in Mediterranean soils

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 - Application of C-rich inputs;



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 - Optimized crop selection and management (Main/cover crops);
 - Bioeffectors and microbial inoculants to stimulate root growth.



SOM in Mediterranean soils

- Cross-cutting aspects identified:
 - Definition of adequate indicators and reference values for SOC and soil quality;
 - Need to improve knowledge sharing and dissemination, including education, about the functions of soil organic matter and soil biota;
 - Development of systems' approaches and long-term evaluation rather than single, simple technical solutions ("recipes") with short-term efficiency.



SOM in Mediterranean soils

- Needs for Research and new Technologies development
 - Evaluating the long-term economic benefits of SOM improvement;
 - Selecting/breeding crops for high biomass (C) input into the system;
 - Evaluating the impacts of soil and crop management on soil biota and SOM;
 - Evaluating the value of different plant residues for SOM enhancement;
 - Designing less herbicide-dependent weed control approaches to allow for low soil disturbance cropping systems;
 - Evaluating the long-term pros and cons of non Ag carbon sources.



SOM in Mediterranean soils

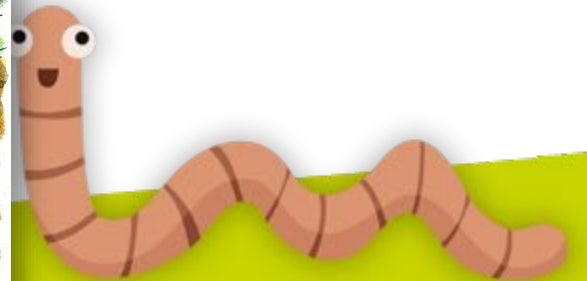
- Innovative ideas/projects to develop:
 - Diagnostic procedure and recommendations for SOM management;
 - Optimising biomass of tree-based cropping systems for SOC enrichment;
 - Optimising the use of fertilisers and pesticides in **Conservation Agriculture**;
 - Identifying the best crop rotations to improve SOM content in the context of **Conservation Agriculture** (no-till) and irrigated cropping systems;
 - Combining **Conservation Agriculture** principles with Organic Farming.



Thank you for your attention



**The answer lies in the soil -
So don't treat soil like "dirt"**



EIP-AGRI seminar

Healthy soils for Europe: sustainable management through knowledge and practice

Online – 13-14 April 2021

All information of the seminar is available on
www.eip-agri.eu

On the event webpage
<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-seminar-healthy-soils-europe-sustainable>

