

Session Biosphere: April 13th 09.00 hrs

1s6a A healthy soil as a basic enabling condition for the transition towards circular land management and land use

EJP SOIL CLIMASOMA: CLIMATE CHANGE ADAPTATION THROUGH SOIL AND CROP MANAGEMENT: SYNTHESIS AND WAYS FORWARD

O'Keeffe S 1), Verhagen J 1), Hassink J 1), Garré S 2), Blanchy G 2), Jarvis N 3), Meurer K 3), Di Bene C 4), Nino P 4), Bragato G 4)

1) Wageningen Plant Research (WR), Netherlands

2) Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Belgium

3) Swedish University of Agricultural Science, (SLU), Sweden

4) Council for Agricultural Research and Economics (CREA), Italy

Soil management and cropping systems enhancing soil structure are key to supporting the sustainable adaptation of EU agriculture to climate change. The occurrence of extreme weather events, such as drought in summer and floods in winter, will increase almost everywhere in the EU. Guidance on management practices and co-learning opportunities to help farmers adapt to these situations are necessary. The project EJP Soil CLIMASOMA contributes to a long-term alignment of research strategies connecting agricultural management, soil quality and climate adaptation potential through its summary of the published literature and identification of knowledge gaps and research opportunities. We focus not only on investigating soil management and cropping systems, but also investigate the current understanding of farmers' perception of climate change, its associated risks and opportunities, related EU policy instruments and how this may influence their decisions regarding implementing soil adaptation measures. We also investigate the potential of new research tools such as natural language processing, meta-analysis and machine learning to increase our ability to extract information from existing literature and derive context-specific information from it. The combined findings from this research led to determining important trade-offs and synergies related to crop production, water quality, and greenhouse gas emissions. Furthermore, perceptions of barriers and drivers that co-determine the willingness of farmers to act and adapt to climate change were also identified. The results from the CLIMASOMA project will provide clear additions to EJP Soil's roadmap for soil research.

Keywords: Soil management, climate adaptation, Farmers