



Sustainable farm Management Aimed at Reducing Threats to SOILs under climate change

Project overview and messages

Jan Peter Lesschen, Wageningen University and Research

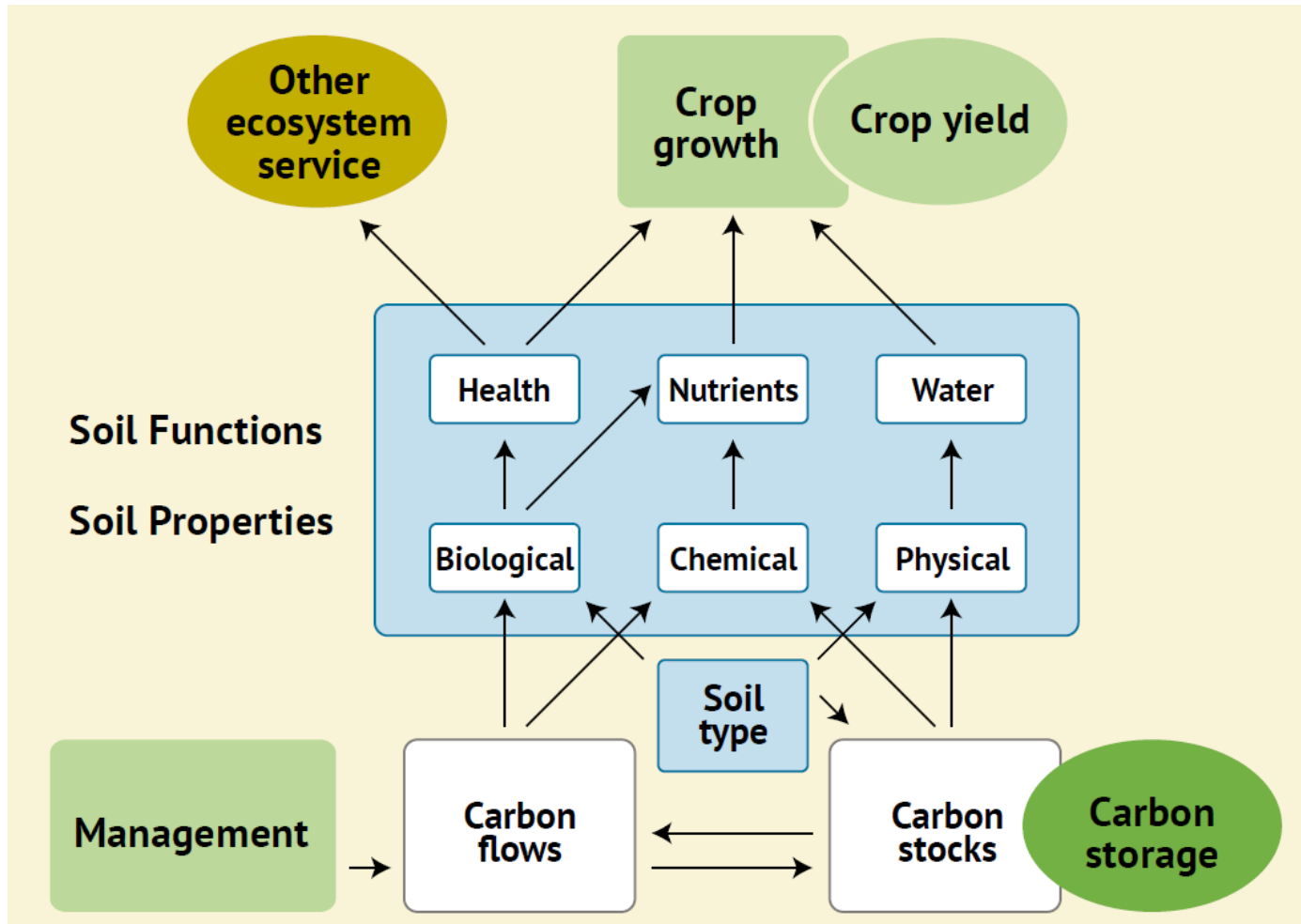
Jørgen E. Olesen, Aarhus University



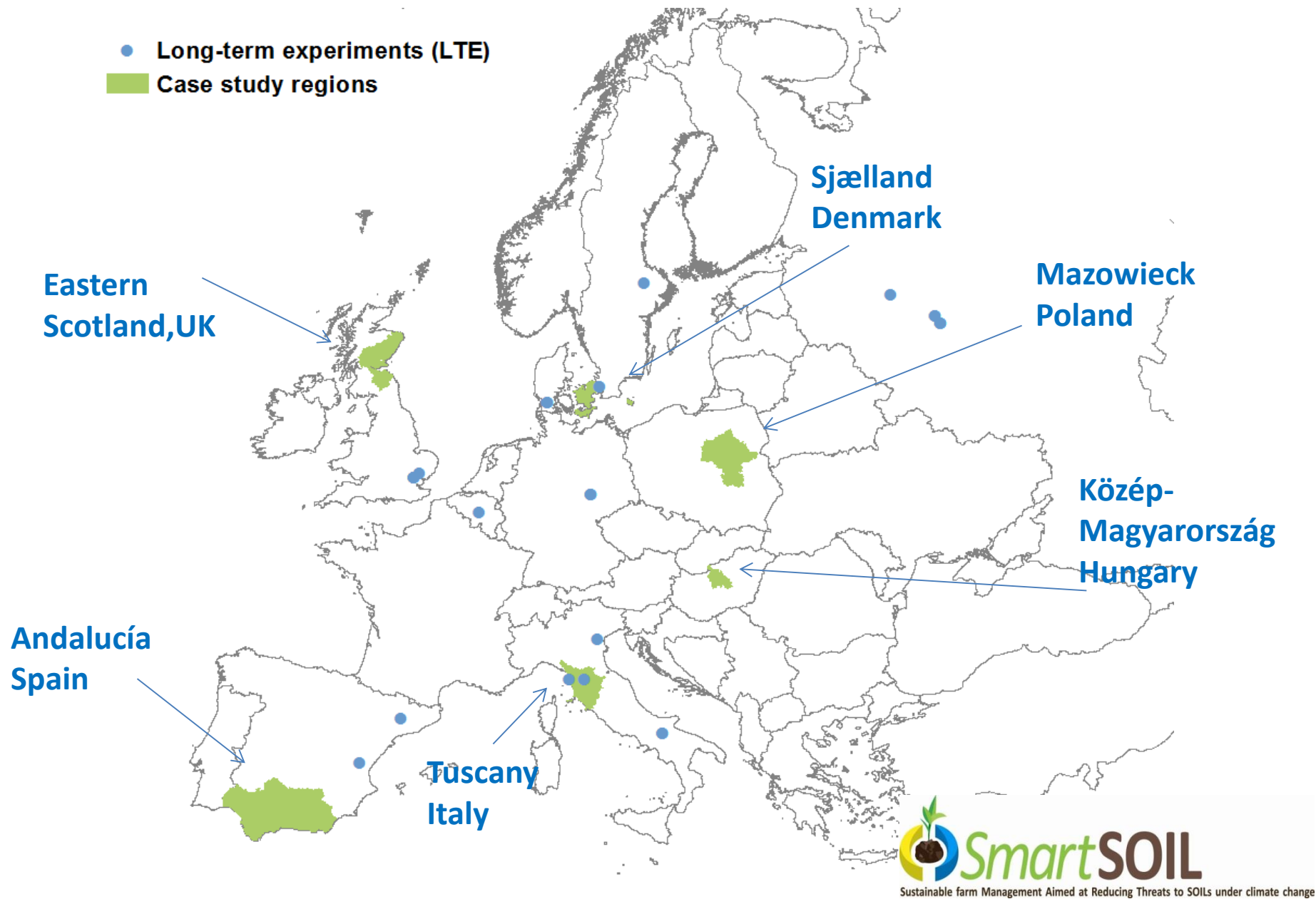
SmartSOIL overview

- An interdisciplinary approach, combining scientific insights and understanding of the farming socio-economic context, to identify management practices that can optimise soil carbon storage and crop productivity.
- Developed a decision support toolbox to support farmers, farm advisory and extension services, and policy makers in decision-making on soil management
- Case study regions and long-term experiments
- Focus on mineral soils in arable systems. Climate change mitigation was one of overall objectives, not the only focus
- 12 partners, 4 year FP7 project concluded in October 2015

Understanding soil functions



SmartSOIL case studies



Crop Rotation



SmartSOIL

SmartSOIL FACTSHEET: INCREASING SOIL ORGANIC MATTER THROUGH IMPROVED CROP ROTATION

SmartSOIL is a toolbox for farmers and advisors to improve soil health and reduce the risk of soil degradation. It provides practical advice on how to manage soil health and reduce the risk of soil degradation. The toolbox is based on the principles of sustainable agriculture and is designed to be used by farmers and advisors in a practical way.

What is it?

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What are the benefits?

- Increased soil organic matter
- Improved soil structure
- Reduced soil erosion
- Improved water infiltration
- Reduced soil compaction
- Improved soil fertility
- Reduced soil acidity
- Improved soil pH
- Improved soil salinity
- Improved soil water content
- Improved soil temperature
- Improved soil aeration
- Improved soil drainage
- Improved soil moisture
- Improved soil health
- Improved soil quality
- Improved soil quantity
- Improved soil sustainability
- Improved soil resilience
- Improved soil adaptability
- Improved soil flexibility
- Improved soil innovation
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Residue management



SmartSOIL

SmartSOIL FACTSHEET: RESIDUE MANAGEMENT: IMPROVING SOIL ORGANIC MATTER AND REDUCING SOIL EROSION

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Manure & compost



SmartSOIL

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Cover & Catch crops



SmartSOIL

SmartSOIL FACTSHEET: BOOSTING ON-FARM SOIL ORGANIC MATTER WITH COVER/CATCH CROPS

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Conservation Agriculture



SmartSOIL

SmartSOIL FACTSHEET: CONSERVATION AGRICULTURE: BUILDING SOIL ORGANIC MATTER AND REDUCING PRODUCTION INPUTS

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Key recommendations for policy

1. Increase awareness of the role of soil organic carbon in delivering soil quality and soil fertility (and multiple ecosystem services) among policy makers and address the issue in policy
2. Support pilot projects and provide incentives to farmers for implementing monitoring schemes and bookkeeping at farm level to monitor their carbon budgets (e.g. through RDPs, European Innovation Partnership (EIP) initiatives)
3. Increase the baseline and mandatory requirements for farmers related to soil quality in the Common Agricultural Policy (CAP)

Key recommendations for policy

- 4. Improve the Rural Development Programmes (RDPs) so that they address soil quality management in a more coherent and targeted manner, including possible targets and benchmarking for soil protection objectives**
- 5. Improve the participation of farmers and other soil stakeholders in the process of designing and implementing RDPs**
- 6. Increase learning amongst farmers and advisers through: a) cooperation and demonstration opportunities to problem-solve around soil quality management, and b) training and demonstration to enhance awareness and understanding of the importance and benefits of soil organic carbon**

SmartSOIL partners

<http://smartsoil.eu>



Aarhus University, Denmark (Project Coordinator)
Lead: Jørgen E. Olesen



University of Aberdeen, UK (Scotland)
Lead: Pete Smith



University of Copenhagen, Denmark
Lead: John R. Porter



Alterra, Netherlands
Lead: Peter Kuikman



University of Florence, Italy
Lead: Marco Bindi



Ecologic Institute, Germany
Lead: Ana Frelih-Larsen



Universidad Politécnica de Madrid, Spain
Lead: Ana Iglesias



Scottish Agricultural College, UK (Scotland)
Lead: Dominic Moran



Countryside & Community Research Institute, UK
Lead: Julie Ingram



Warsaw University of Life Sciences (SGGW), Poland
Lead: Zbigniew Karaczun



Le Groupe-conseil baastel sprl, Belgium
Lead: Olivier Beucher



Research Institute for Agricultural Economics, Hungary
Lead: András Molnár