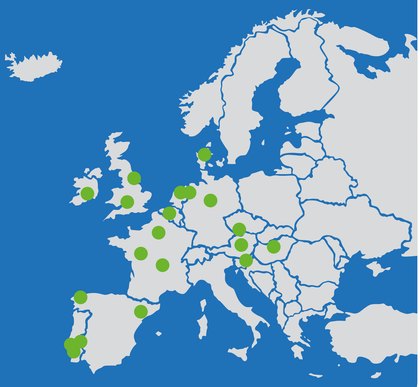
Soil: fertility, biological life and fighting against erosion



AGRI Innovation summit 2019

EIP AGRI Focus Group

Grazing for Carbon

Subject of the Focus Group

How to increase the soil carbon content in grazing systems?

Context for the Focus Group

The potential of grasslands as a C sink in Europe is large and grazing systems are important for C storage. It is unclear to what extent different grazing systems can contribute to C sequestration. Experts sharing knowledge and experience from different disciplines on the relationship between grazing and soil C aimed to identify how to increase the soil C content in grazing systems.

Key Questions

There is net C sequestration within grassland systems in general, but in a mixed grazing/cutting system there is less C sequestration than under a pure grazing system.
Key challenge for sustainable grazing livestock systems: find the optimal type of management to combine animal production with the delivery of other ecosystem services like C sequestration.
Optimal grazing management should focus on:
– additional C sequestration (where possible)
– preserving current C stocks
Identified knowledge gaps:
– the best way to manage grazing systems for C across the different environments in Europe today and in the future with climate change
– the mechanisms behind the practices and the solutions.

Main Findings

The EIP-AGRI Focus Group recommended that emphasis is put on the success and fail factors for increasing the soil C content in grazing systems:
– Improve the understanding of strategies promoting better soil C management in grazed grasslands
– Provide guidelines for good grazing management: education/knowledge dissemination
– Develop incentives to promote the adoption of good and appropriate grazing systems
– Establish monitoring schemes for C storage

Ideas for Operational Groups

– Development of quick, low-cost and easy to apply monitoring techniques that help farmers and advisers in their management decisions to enhance C sequestration and allow the farm level to be linked to the landscape level for sustainability assessment
– Look for the optimal choice of (local) seed-mixtures to support C sequestration, N fixation, resistance to extreme weather events, species persistence etc., in specific regions
– Maximise the potential of the forest /grassland (agroforestry/silvopastoral) mixed systems for C sequestration
– Increase plant and animal production, soil quality and biodiversity by converting traditional management to alternative/conservation management

Research needs from practice

– Understand the links between C sequestration/organic matter and other ecosystem services and develop robust indicators to monitor different ecosystem services at the same time for different regions in Europe
– Identify region-specific species and mixtures for grazing, determine the impact of grazing on the productivity and persistence of mixtures and identify the best mixtures to maintain or increase the soil carbon
– Holistic approach: Identify trade-offs and synergies between C sequestration and other ecosystem services and identify best grazing management to optimise ecosystem services for local conditions
– Assessment of effectiveness of incentives on long-term C sequestration

All findings from the Focus Group and more ideas for Operational Groups and research needs are available in the final report on the EIP AGRI website: **https://ec.europa.eu/eip/agriculture/en.**