Workshop 17: Legumes in European cropping systems for climate change adaptation

Convenor: Ralf Bloch (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany)

Impulse talks:

- Johann Bachinger (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany) - "Novel Approaches for Legume Cropping Systems under Climate Change"
- Ralf Bloch (Leibniz Centre for Agricultural Landscape Research, ZALF, Germany) - "Exploring Soybean Cropping Systems as a Climate Change Adaptation Strategy"
- Fernando Pellegrini (Scuola Superiore Sant'Anna, Pisa, Italy) - "The use of Participatory Learning and Action methodologies for Agroecology: conducting research on living mulches in central Italy"

The workshop was introduced by presenting the main advantages (range of ecosystem services and high potential to improve agroecological resilience) and weaknesses (yield instability and lack of knowledge on production) of legumes. There was a demonstration of ROTOR 3.0, an organic crop rotation planner tool developed by the Leibniz Centre for Agricultural Landscape Research (ZALF).

Ralf presented some of the most important measures for climate adaptation from farmers' point of view (reducing tillage, using cover crops and new crops) from an survey within the EU project climate CAFE. He detailed some characteristics of one of the proposal from farmers (soybean cultivation) and described how winter rye with early sowing date rolled during flowering before no-till seeding of the soybean can be used for weed suppression.

Fernando presented his research on living mulches (clover on wheat crop) in central Italy through the use of participatory learning and action methodologies for Agroecology.

He described the trials that were set up according to farmers preference. They ran wheat experiential evaluation during field days for two years in a row and compared to the results to lab analysis on samples taken which showed that there could be a mismatch between what farmers were able to experientially evaluate and what was actually there.

Fernando discussed the concept of 'adaptive management' (to manage a system by adapting to changes and shocks) which farmers do in their everyday lives. He stated that complexity reduces adaptive management. He described how socio-political conditions can prevent techniques to spread and stop risk taking for innovation.