## The Role of Soils in Organic Agriculture











#### → Soil functions & services



Luvisol © Franz Schulz

# Erosion SOM decline Contamination. Sealing Compaction **Biodiversity loss** Salinization Landslides & floods

Soil threats

Soil functions, i.e. (bundles of) soil processes

Soil-based ecosystem services

Habitat provision Biomass production (roots, soil organisms) Element cycling Biodiversity conservation Decomposition **Erosion control** Soil structure maintenance **Biological population** Pest and disease control regulation Water cycling (infiltration, retention, percolation) Water quality and supply Organic matter cycling (humus formation, Climate regulation C sequestration)

Bünemann 2018 Soil Quality - Linkages between soil threats, soil functions and soil-based ecosystem services. Further developed from the scheme presented by Kibblewhite et al. (2008a) and modified by Brussaard (2012).

**Interim report** 

Role of soils in climate change mitigation

Frelih-Larsen et al 2022

2

### What can Organic Agriculture do for Soils?











LTE OAFEG Organic arable field experiment Gladbacherhof













Agroforestry system Gladbacherhof © Suzanne Jacobs

### **Funding climate-friendly** soil management

Appropriate policy instruments and limits of marketbased approaches



Rewarding climate-friendly practices that support co-benefits 

Organic Climate NET