



Interdiciplinary "on-farm" Research on Soil Compaction

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Research Questions

- what are the socio-economic driving factors for soil compaction?
- what yield effects are caused by soil compaction under practical conditions?
- what strategies do farmers use to prevent soil compaction? Under which conditions do these strategies work?
- does the perceived compaction and its yield effect correspond to the measured one?

Approach: "on-farm" Research in Lower Saxony



Guided interviews

on perception, avoiding strategies, obstacles, yields

Background

Soil compaction is classified as an anthropogenic threat to soil alongside others as soil erosion or loss of soil carbon.



When intensive field traffic and/or machinery coincides with heavy susceptible soils as a combination of soil texture and water content.



Identification of potentially compacted areas with aerial photograph, management history



Effects

infiltration, water holding capacity, runoff

Filtering and transformation function biodiversity > yields



A diverse mix of measures to avoid or mitigate soil compaction exists:

- > technical (e. g. low pressure tyre, wide tyre)
- > management (e.g. separation of field and road transport)
- \geq cultivation (e. g. crop rotation, tillage)





Soil analysis and yield measurement by hand-harvest

Addressed Targets within SoilAssist

- interlink natural and social science, identification of suitable indicators for interdiciplinary assessment
- stakeholder-involvement
- practical check of existing avoidance and mitigation strategies
- yield effects under practical conditions
- identification of socio-economic drivers for soil compaction as adjusting screws for more soil protection

Suitability

suitability of The these measures depends on the specific business and conditions. site Their natural application further depends on the socio-economic framework conditions of the respective farm.

