

Evidences

Study #4415

Contributing Projects:

- P1298 - Exploiting the potential of genotype microbiome interactions to promote sustainable soil health in southern Africa
- P1931 - Evaluate the mid-and long-term effects of tillage practice, residue management and crop rotation on soil, crop and environment
- P1933 - Train NARS partners on innovation systems, conservation agriculture, agronomy and interdisciplinary research
- P1071 - Coordination of CoA 4.3
- P1641 - GIZ-Soil protection and rehabilitation for food security
- P834 - Improving Soil Fertility in Ethiopia (ISFM+)

Part I: Public communications

Type: Program/project adoption or impact assessment

Status: Completed

Year: 2021

Title: Long-term trials show soil health benefits of Conservation Agriculture in Ethiopia

Commissioning Study: MAIZE, WHEAT

Part II: CGIAR system level reporting

Links to the Strategic Results Framework:

Sub-IDOs:

- Agricultural systems diversified and intensified in ways that protect soils and water

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:

- Increase in water and nutrient (inorganic, biological) use efficiency in agro-ecosystems, including through recycling and reuse

Description of activity / study: Long-term (2005–2013) influence of Conservation Agriculture-based systems on soil health and crop productivity in northern Ethiopia: Treatments used include two types of CA-based systems (permanent raised bed PRB and contour furrowing CF) and conventional tillage (CT) arranged in a randomized complete block design. Two pathways in which CA-based systems contributed to improved productivity: (a) via higher density of bacteria and improved hydraulic conductivity, and (b) via higher density of fungi and increase soil organic carbon content in the topsoil. The study concludes that CA-based systems have the potential to improve crop productivity through improved soil health.

Geographic scope:

- National

Country(ies):

- Ethiopia

Comments: with implications for Conservation Agriculture/Climate-smart Agriculture Practices in Eastern and Southern Africa.

Links to MELIA publications:

- <https://doi.org/10.1002/ldr.3816>