Rhodes grass in a farmers plot in the Southern highlands of Tanzania

Context

- Forage grasses (e.g. Rhodes and Brachiaria) are widely grown in livestock systems within sub-Saharan Africa.
- Evidence of their soil organic carbon (SOC) sequestration potential remains scarce.
- We are quantifying SOC in different perennial forages in the southern highlands of Tanzania.

Our innovative approach

- Paired-plot soils sampling approach to compare SOC in forages & annual croplands.
- Analyzed soils samples from 65 farmers plots with Rhodes and neighboring plots with maize.
- On-farm trials with different perennial forages ongoing in 3 districts in the southern highlands.

One of the on-farm trials in the southern highlands in Tanzania

CLIMATE CHANGE & GREENHOUSE GAS REDUCTION

Quantifying soil organic carbon in perennial forages in the Southern Highlands of Tanzania

- First results show higher soil organic carbon (SOC) in Rhodes plots compared to neighboring maize plots.
- Data from on-farm controlled plots likely to provide more robust SOC results.
- Calibrated crop-models needed to assess the long-term SOC storage in perennial forage grasses in East Africa.

CGIAR RESEARCH PROGRAM ON Livestock

LIVESTOCK & ENVIRONMENT

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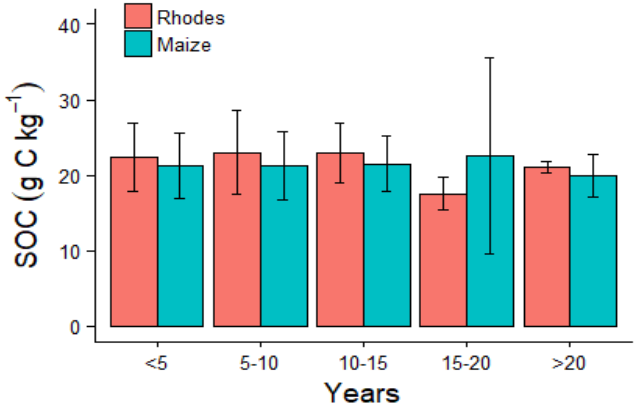
Preliminary results

- SOC content slightly higher in Rhodes plots compared to the maize plots.



The average SOC content in Rhodes and maize farmers plots. The age category is based on the Rhodes plot.

Future steps

- Detailed statistical analyses to understand the differences in SOC.
- Soil sampling and analysis for 3 years in the ongoing on-farm trials.
- Calibration and evaluation of the DSSAT CROPGRO model using data from the demo plots.
- Modeling the long-term SOC sequestration for different perennial forages.

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