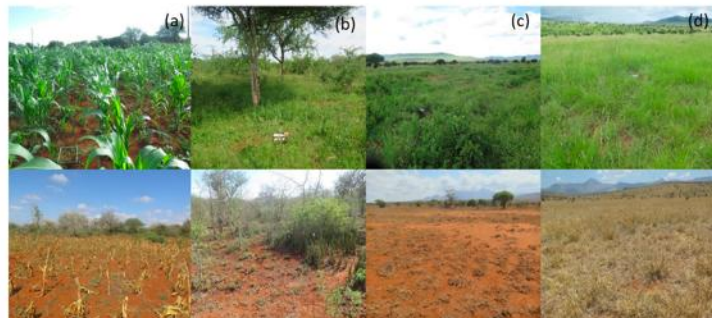




The four land-use types: (a) cropland, (b) bushland, (c) grazing land, and (d) conservation land. The upper row shows the land-use types during the wet season, while the lower row depicts the situation during the dry season.

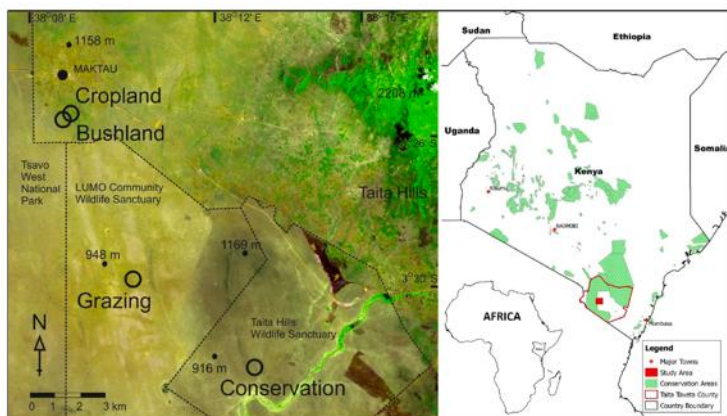
Context

- Comparison of soil greenhouse gas emissions from protected landscapes and agricultural landscapes are lacking while being crucially needed for climate-smart assessment of agricultural practices

Our innovative approach

- An experiment that soil greenhouse gas emissions across for major land use types in Southern Kenya for a whole year

Location of the study sites showing the cropland, bushland, grazing land, and conservation land sites in the savanna area in the lowlands of Taita–Taveta County in southern Kenya.



CLIMATE CHANGE & GREENHOUSE GAS REDUCTION

Soil nitrous oxide and methane emissions are low across land use types in Kenya

- Carbon dioxide emissions are the primary greenhouse gas emitted from soils across land use types in Southern Kenya
- Seasonality strongly drives carbon dioxide emissions
- Normalized Difference Vegetation Index (NDVI) is a valuable proxy for vegetation cover and thus in predicting carbon dioxide emissions



RESEARCH
PROGRAM ON
Livestock

LIVESTOCK & ENVIRONMENT

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Outcomes

- Opportunity to accurately report national greenhouse gas emissions to UNFCCC
- Identification of pathways for sustainable intensification of livestock systems

Future steps

- Include additional land use/cover types in Kenya (ie. Natural and managed forests, sisal plantations, wetlands)
- Extrapolate the findings to other climatic zones and livestock production systems in Africa

Partners

University of Helsinki, Taita-Taveta Research Station, Supporting EU–African Cooperation on Research Infrastructures for Food Security and Greenhouse Gas Observations (SEACRIFOG)

Citation

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