

Boran steer and animal respiration chamber at ILRI's Mazingira Centre in Nairobi

#### Context

- Enteric methane emissions factors for cattle in Africa are currently based "best-guesstimates" from studies carried out outside of Africa
- Localized data are necessary for accurate national greenhouse gas reporting under UNFCCC
- Intensified livestock systems are essential to ensure food security in the future

## Our innovative approach

 An experiment that investigated the performance and methane emissions from starving animals (no animals were harmed!)





# CLIMATE CHANGE & GREENHOUSE GAS REDUCTION

# Below-maintenance feed intake increases methane yield from enteric fermentation

- Low-quality tropical forages at restricted intake substantially increase methane yield in tropical cattle
- Methane emissions factors may be up to 10% higher than previous estimates
- Improved feeding suggest a way forward to mitigate methane emissions and points towards higher productivity and economic benefits for smallholder farmers



**ENVIRONMENT** 

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#### **Outcomes**

 Potential pathway towards intensifying livestock production and the opportunity to accurately report national greenhouse gas emissions to UNFCCC.

### **Future steps**

- Link the baseline results to intervention testing experiments in the future
- Extrapolate the findings to other climatic zones and livestock production systems in Africa

#### Citation

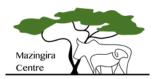
Goopy JP, Korir D, Pelster D, Ali AIM, Wassie SE, Schlecht E, Dickhöfer U, Merbold L, Butterbach-Bahl K (2020) Severe below-maintenance feed intake increases methane yield from enteric fermentation in cattle. *British Journal of Nutrition* 

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#### **Partners**

Kassel University, University of Hohenheim, Karlsruhe Institute of Technology (KIT)





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