



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!)



Aerial overview of ILRI's Mazingira Centre in Nairobi, Kenya



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



RESEARCH PROGRAM ON Livestock

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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