GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

GRA FLAGSHIP PROJECT TITLE: GHG mitigation in cattle farming - how much is possible where and what are the economic implications on-farm?

Leader: Thünen Institute, Germany

Council Champions:

1. Argentina
2. Germany
3. South Africa
4. *tbc*
5. *tbc*

- **Start date and project length:**

- March, 2022
- 3-5 years

- **Brief description of project:**

- Objective/priority:
  - Investigate the feasibility and cost-effectiveness of GHG mitigation strategies at farm-level in the beef cattle and dairy sector
  - Complement existing GRA research work with economic expertise from *agri benchmark* network
- Methods:
  - Practice change analysis (Baseline vs. strategies)
  - Typical Farm Approach (*Agriculture* **2020**, *10*(12), 646; https://doi.org/10.3390/agriculture10120646)

- Benefits/impact:
  - <u>Global applicability</u>: The methodology is globally applicable, and especially suitable in countries with limited official statistical data availability, as it integrates experts and producer knowledge in the data collection phase
  - <u>Global comparability</u>: Standardised and well-established methodology and accounting methods will be applied to measure farm economics and account for GHG emissions
  - <u>Data availability</u>: Economic data sets are available in the *agri benchmark* network, these can be complemented with existing GHG emission data sets
  - <u>Transferability</u>: Representative "typical" farming systems will be analysed in globally relevant production systems and regions. The results shall be upscaled in a second step.
- Project outcomes:
  - Identify the most cost-effective management and technology options in different global production systems and regions
  - Provide evidence-based policy recommendations on GHG mitigation strategies at the farm level
  - Build database for farm-level assessment of GHG mitigation strategies related to costs and benefits

- **Current participants and resources:**

- We will start with *existing personnel and project resources* and identify funding possibilities to support partners with further financial / personnel needs

- **Argentina**: Universidad Nacional de Córdoba + Instituto Nacional de Tecnología Agropecuaria
- **Australia**: Charles Sturt University
- **Bangladesh**: Bangladesh Livestock Research Institute
- **Belgium**: Flanders Research Institute for Agriculture, Fisheries and Food
- **Canada**: Canfax Research Services
- **Germany**: Thünen Institute
- **Ghana**: Council for Scientific and Industrial Research
- **Peru**: Universidad Nacional Agraria La Molina
- **Portugal**: Algarve University
- **South Africa**: Agricultural Research Council

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■ **Opportunities for involvement:**

1. What resources/skills are wanted/needed on your project?

    •   Resources: existing project and personnel resources, additional funding support for Argentina, Bangladesh, Portugal and South Africa

    •   Skills: expertise on GHG emission measurement at farm-level in beef or dairy sector *and / or* expertise on economic analysis at farm-level in beef or dairy sector

2. How to become a participant/align related research/contribute data or samples?

    •   Add existing GHG emission data to existing typical farm dataset

    •   Add new GHG emission data to existing typical farm dataset

    •   Add new typical farm dataset to existing GHG emission data

    •   New data collection covering economic and emission data

    •   Compare existing GHG and economic data sets and harmonize

Next steps in 2022

- Produce **first results** for beef and dairy with selected countries to probably presented on 17th June '22 within the scope of the agri benchmark Beef and Sheep Conference 2022

- Produce joint **publication** by end of 2022

- Discuss **possible collaboration** with other GRA networks (e.g. Feed and Nutrition, Manure Management) and EU projects (e.g. MACSUR SciPol, BovINE)

- Identify **funding** opportunities for the next steps