

GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

9th Livestock Research Group meeting

10-12 April 2017



WELCOME

Setting the scene: overview

- **Looking back:** LRG achievements in 2016
- Outcomes from the GRA Council meeting
- **Looking forward:** challenges and opportunities for the LRG
- Other updates, e.g. regional progress, networks, partners

Supporting countries to improve their inventory and MRV capabilities: workshops and training, guidelines, white paper, expert review of Tier 2 inventories



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Livestock development and climate change:

The benefits of advanced greenhouse gas inventories

About this booklet
Livestock development and climate change outcomes can support each other. More productive and efficient farm systems generally produce food at much lower greenhouse gas (GHG) emissions per unit of product.

However, many countries use simple (Tier 1) methods for estimating livestock emissions in their GHG inventories. Tier 1 methods are unable to capture the reductions in emissions intensity that result from improvements to livestock farming.

This booklet shows how advanced (Tier 2) inventory methods can support climate change and productivity goals and help broaden countries' policy options.

Inside, you will find information on:

- Why are livestock GHG inventories important?
- The benefits of advanced GHG inventories for livestock development
- The difference between Tier 1 and Tier 2 methods
- How to set up an advanced inventory
- An example of a Tier 2 approach for beef production
- A case study of Uruguay's Tier 2 inventory
- Where to find more information

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security **CCAFS**



Measurement, reporting and verification of livestock GHG emissions by developing countries in the UNFCCC: current practices and opportunities for improvement

PRE-WORKSHOP DRAFT FOR DISCUSSION



Identifying regionally appropriate low emissions pathways

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A joint project with FAO, CCAC, World Bank and New Zealand to improve livestock productivity and reduce CH₄ emissions intensity

- 13 countries in South Asia, Sub-Saharan East Africa and South America
- Already supported the development of at least one INDC
- A bid for funding for Phase 2 has been submitted



Food and Agriculture
Organization of the
United Nations

REDUCING ENTERIC METHANE

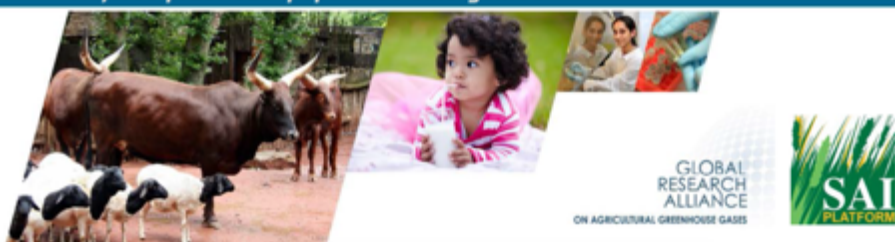
for
improving food security
and livelihoods



2016: Communication products:
 industry guidelines translated, new
 case studies, practice briefs,
 newsletters



Reduciendo las emisiones de gases de efecto invernadero de la ganadería:
Mejores prácticas y opciones emergentes



PRACTICE BRIEF Climate-smart agriculture

Improved ruminant genetics: Implementation guidance for policymakers and investors



Overview

Genetics makes use of natural variation among animals. Selecting preferred animals as parents can yield permanent and cumulative improvements in the population. More efficient animals can greatly reduce greenhouse gas emissions and feed costs. Breeding, including cross-breeding between indigenous and imported species, can also improve resilience to diseases and heat stress and increase reproductive performance.

KEY MESSAGES

- 1** Improved genetics results in permanent and cumulative changes in livestock productivity
- 2** Breeding can increase the resilience of livestock to climate-related stress and diseases and increase reproductive performance
- 3** Methane emissions intensity (emissions per litre of milk or kg of meat) can be improved by breeding for productivity in many countries
- 4** In 10 years, an 11-26% reduction in methane emissions intensity can be achieved by targeted breeding
- 5** In some systems, breeding must integrate multiple purposes for livestock in addition to milk and meat production



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RESEARCH PROGRAM ON
 Climate Change,
 Agriculture and
 Food Security



Yvette de Haas, Steve Davis, Andy Reisinger,
 Meryl Breton Richards, Gareth Difford, Jan Lassen

Regional engagement in 2016/17: South and South East Asia

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- Regional engagement workshops and inventory technical training
- Establishment of a regional inventory community for South East Asia

Research Cooperation achievements

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Several funding bids submitted for significant pieces of work during 2017-2020 – for example:

- GPLER: e.g. funding confirmed for project on microbial markers to predict low CH₄ emissions from sheep (involving ASGGN scientists)
- ERA-GAS (decisions pending): RumenPredict (RMG), CEDER (FNN – building on existing databases), Dataman (MMN)



Research Network achievements (1)

Animal Health Network (AHN):

- Contribution to a peer reviewed paper 'Challenges and priorities for modelling livestock health and pathogens in the context of climate change'

Animal Selection, Genetics & Genomics Network (ASGGN):

- Published review of proxy methods for estimating enteric CH₄ in dairy cows
- Multi-country dataset to estimate heritability of CH₄ emissions in dairy cows
- Ruminant genetics practice brief, jointly with CCAFS and GACSA

Research network achievements (2)

Feed & Nutrition Network (FNN):

- Two major reviews of experimental methods to improve research practices (*in vivo* and *in vitro*)
- Treatment means and prediction databases

Rumen Microbial Genomics Network (RMG):

- Creation of a replica of LRG's Hungate 1000 cultures to be held in IBERS and available to scientists on request
- RumenMine – database tool for mining the Hungate 1000 cultures

Manure Management Network (MMN)

- No special achievements this year

GRA Council meeting, October 2016

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- Succession of GRA Presidency from the US to Mexico and this year to Japan (August 2017)
- Approval of a four-year Strategic Plan
- Agreement to pursue four GRA flagship programmes on:
 - ✓ Enteric fermentation
 - ✓ Inventory issues
 - ✓ Soil carbon
 - ✓ Paddy rice
- Agreement to explore joint programming (including to support the flagships)
- New GRA partners: FACCE-JPI, FONTAGRO, GODAN
- GRA confirmed as IPCC Observer

Challenges & opportunities: 2017/18

- Two LRG networks with challenges facing their leadership and longevity: AHN and MNN
 - Addressing the growing diversity of the LRG, accomodating member expectations
 - International attention on livestock and climate change – countries need support to fairly respond
- Flagships – a way of bringing it together – achieving research and capability outcomes that would not have been possible without the GRA

Country updates Round Table is this year at tonight's dinner



- **Come prepared to share your country/organisation's activities and priorities with colleagues at your table:**

**HOW CAN GRA / LRG
FOSTER YOU?**



Other Updates

Platform for Sustainable Intensification of Livestock Production in LAC

2017 Livestock Research Group
Meeting
April 10th, 2017



LAC contribution to global

- Livestock emissions 18.3%
- Livestock production:
 - ✓ 23% Beef
 - ✓ 21.4% Poultry
 - ✓ 11.2% Milk
- Livestock exports:
 - ✓ 44% Beef
 - ✓ 42% Poultry
 - ✓ 17% Pork



Building on existing efforts

- Ongoing projects involving livestock
 - ✓ Three projects on GHG supported by MPI New Zealand and FONTAGRO in 12 LAC countries
- FONTAGRO-GEF-IDB project on technology transfer mechanisms
- CATIE: silvopastoral projects
- CIAT: tropical forages
- Others

Ministry for Primary Industries
Manatū Ahu Matua



Platform objectives

To network key stakeholders for the sustainable intensification of livestock production systems as strategy for climate change adaptation and mitigation

- Components:
 - a) Coordinated research and development
 - b) Facilitate knowledge sharing
 - c) Strengthen capacities
 - d) Share good practice policy design
 - e) Jointly mobilize resources
- Assist LRG to implement activities in LAC region

Coordination & initial funding

- Coordinator: CATIE
- Steering Committee:
 - ✓ MPI New Zealand
 - ✓ FONTAGRO
 - ✓ GRA
 - ✓ INIA Uruguay
 - ✓ CIAT
 - ✓ UNALM Peru
 - ✓ INTA Costa Rica
 - ✓ IICA
 - ✓ Others



- Initial Funding
 - MPI New Zealand
 - FONTAGRO
 - CATIE

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THANK
YOU!





Any Other Updates?