LIVESTOCK RESEARCH GROUP
newsletter
GLOBAL RESEARCH ALLIANCE ON AGRICULTURAL GREENHOUSE GASES

Update from the Co-Chairs

The year has been every bit as busy and productive as we imagined it would be, and we are now in the last quarter of the year already.

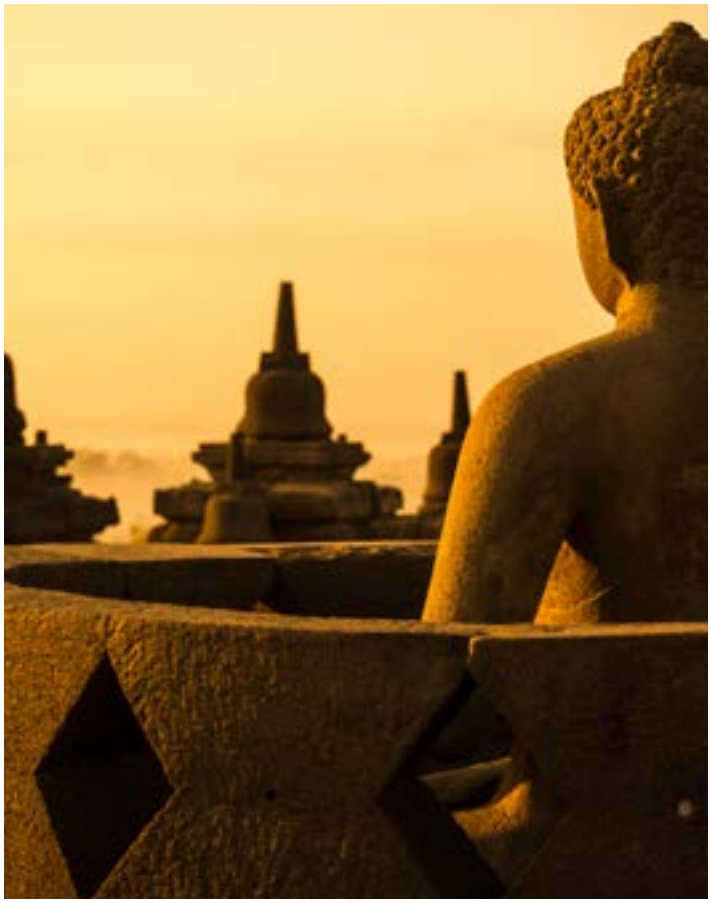
Ahead of us is the LRG meeting which will be held on the 14-15 November 2014 at ***Jogjakarta Plaza Hotel, Jogjakarta, Indonesia*** in the margins of the AAAP congress. The agenda has been circulated and many LRG representatives have already registered for what intends to be a full and active meeting. The agenda will focus on five of the key work areas of the Alliance: Research Networks, Capability Building, Collaborative Projects, International Partners, and Knowledge Transfer. A meeting dinner will be hosted by Indonesia for all delegates attending the meeting on the evening of the 14th November.

To register for the LRG meeting please contact the GRA Secretariat (secretariat@globalresearchalliance.org).

Since the last newsletter was published the LRG has hosted events in Mozambique (see page 6) and Poland and facilitated a second technical training course that was hosted by the University of Pretoria (see page 4). We can also report that we have a new Chair of the Alliance Council appointed in June at the Council meeting (see page 2-3). Included in this newsletter is also an introduction to the CCAC project on Manure Management.

Enjoy reading the newsletter. See you in Indonesia.

Harry and Martin



The 16th AAAP Animal Congress is to be held in Yogyakarta, Indonesia from Monday 10 to Friday 14 November 2014. The theme of the AAAP 2014 is "Sustainable Livestock Production in the Perspective of Food Security, Policy, Genetic Resources and Climate Change". The congress will attract speakers and delegates from throughout the globe and will build on previous successful meetings in the series.

For more information and registrations please visit www.aaap2014.ugm.ac.id

Council of the Global Research Alliance meets for the fourth time

The fourth meeting of the Council of the Global Research Alliance took place in The Hague and at Wageningen University in the Netherlands across the week of 16-19 June 2014.

The meeting was attended by 51 representatives from 21 member countries (Argentina, Belgium, Brazil, Canada, China, France, Germany, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Paraguay, Spain, Sweden, Switzerland, Thailand, United Kingdom, United States, and Uruguay). Invited speakers and guests included Alliance Partner organisations, the World Bank and the World Farmers' Organisation with additional presentations from the Climate and Clean Air Coalition and the Sustainable Agriculture Initiative platform, two organisations that already collaborate with the Livestock Research Group.

This meeting saw the Netherlands take on the role of Council Chair, with Uruguay as outgoing Chair. Uruguay's achievements during its past year as Chair saw the Alliance form a Partnership with the World Farmers' Organisation to better connect the outcomes of the Research Groups with the farmers who can implement these changes in practice. Under Uruguay's Chairmanship the Research Groups were also asked to consider how they could better consider synergies between greenhouse gas mitigation and adaptation to climate change. In his outgoing speech Walter Oyhantcabal, Ministry of Livestock, Agriculture and Fisheries welcomed the eight new countries that had joined the Alliance in the past year, with six countries also from the region of Latin America. Countries new to the Alliance since July 2013 are: Belgium, Bolivia, Ecuador, Honduras, Nicaragua, Panama, Paraguay and Sri Lanka.

The Netherlands Ministry of Economic Affairs hosted the meeting, which included an innovative mix of discussions, presentations and visits to agricultural sites. The agenda ensured that the Research Groups and Cross-Cutting Groups remained at the heart of discussions, as each Group was provided with an hour to present its activities and issues to the Council and engage in discussion with members. As in previous years, the Research and Cross-Cutting Group Co-Chairs met ahead of the Council meeting to discuss issues common across all Groups and at this time identified five common topics to present to the Council:

1. **Framing the Profile of the Research Groups** – outcomes for stakeholders and the creation of regional networks, define and study mitigation and adaptation synergies
2. **Key Global Partners** – strengthen our role as an effective research partner with existing key organisations; roadmaps for engagement
3. **Communication** – develop appropriate communications for our partners, improve the website to promote the data and achievements, Identify and exploit promotional opportunities, greater commitment from Council Members to appoint and support a dedicated contact for each of the Groups
4. **Adaptation** – develop an additional Stocktake on specific adaptation studies related to GHG emission management with a focussed Terms of Reference and support from partners
5. **Cross-cutting issues** – Strengthen the dialogue with Research Groups: Integrated Cross-Cutting Networks under Cross-Cutting Leadership

The outcomes from the Council meeting saw agreement for the proposed Research Group activities as outlined above. The Council agreed to continue developing its own strategic relationships with partner organisations, including identifying new partners and developing concrete activities with new and existing partners. The Council will also promote the Alliance at international events such as the UN Secretary-General Climate Summit in September 2014.

Alliance Council member country representatives 2014.

Participants and trainers on the 2014 training course at the University of Pretoria, South Africa.

Technicians across Africa participate in a Global Research Alliance training course

The Global Research Alliance on Agricultural Greenhouse Gases seeks to find ways to globally reduce the greenhouse gas emissions intensity of agriculture.

As part of achieving this objective, the New Zealand Government with the International Livestock Research Institute (ILRI) and the European Union-funded AnimalChange project (http://www.animalchange.eu/) funded a training course to increase the research capacity in methane and nitrous oxide measurements across Africa. Seventeen participants arrived at the University of Pretoria, South Africa on 21st September to begin a two week intensive training course on the "Introduction to Greenhouse Gas Emissions Measurement".

Nominated by their organisations to attend the course, the participants came from Botswana, Namibia, South Africa, Ethiopia, Ghana, Nigeria, Kenya and Uganda. Participants received 'hands-on' training during the two weeks to develop skills that will improve the measurement and understanding of greenhouse gas emissions from agriculture in their home country. This will facilitate their participation in further research and programmes to explore the potential for mitigation of livestock greenhouse gas emissions. The training course strongly supports and promotes the priorities and goals of the Global Research Alliance: developing a collaborative approach to reduce greenhouse gas emissions from pastoral farming.

The course was organised by the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC) and taught by a collaboration of New Zealand, British, Irish and Kenyan experts in the field. German Molano from the Animal Nutrition team at AgResearch, New Zealand led the course with support from Christo Jacobs from the University of Pretoria and Dr John Goopy from ILRI, Kenya. Dr Kenton Hart from Aberystwyth University, Wales was funded by the UK Government to assist German Molano for the two weeks of the course. Dr Gary Lanigan was funded by AnimalChange and TEAGASC, Ireland to demonstrate nitrous oxide measurement using static chambers.

The course, the second of its kind organised by New Zealand in support of the Livestock Research Group, reflects a growing desire amongst scientists and practitioners from institutions in developing countries to develop their own capability to quantify agricultural greenhouse gas emissions.

Climate and Clean Air Coalition Livestock and Manure Management Project

The Climate and Clean Air Coalition, an initiative under the United Nations Environment Programme, recently agreed to fund a project that seeks to improve livestock manure management practices with the goal of reducing short-lived climate pollutants (SLCPs) such as methane, and other harmful emissions to the environment

Benefits of such actions include the ability to capture methane as an energy source and optimising nutrient utilization for crop production by managing and removing barriers to action. The project is being undertaken through the Manure Management Research Network of the LRG. Started in January 2014, the project targets Latin America, Africa and Asia and will be identifying countries within these regions to participate in the project during its first year.

During the 18 months of funding the project will:

- increase awareness of the potential of manure management amongst key stakeholders such as farmers and policymakers
- improve stakeholder capacity to implement best practice in manure management
- introduce policies that enable improved manure management
- link practitioners and organizations to share experiences and generate partnerships that accelerate manure management activity in the livestock sector.

The project will establish a Central Hub and three Regional Centers, working in close collaboration, to identify opportunities and conduct work in regions, build networks and partnerships, gather information, and implement projects. It will be supported by an Advisory Board of leading international institutions to provide strategic guidance.

Expected outcomes include:

- Raising awareness of manure management options at the level of policy, private sector and farmers organizations through outreach and communication
- Establishing networks to exchange manure management information, connect people, and forge partnerships
- Establishing a roster of experts to provide targeted technical assistance and training, analysis and practical implementation and policy support, relying heavily on co-financing and in-kind resources from partners
- Launching projects and partnerships to improve manure management by providing information, experts, knowledge exchange, and access to resources
- Establishing an internet-based information infrastructure to serve as a searchable repository for global and regional knowledge on manure management.

Together these activities will help policymakers, practitioners and other key stakeholders acquire, share, and disseminate knowledge and leverage new and existing resource bases and institutions to enable the adoption of improved manure management practices at the regional, national, and local level. This will be achieved by strengthening institutions, assisting in the development of effective policies, and directly transmitting expertise and assistance to farmers and practitioners.

Cattle grazing in Thailand; an established biogas unit in Thailand.

List of partners and implementers:

United States; Canada; World Bank; Tropical Agricultural Research and Higher Education Center (CATIE); Stockholm Environment Institute (SEI); European Commission; U.N. Food and Agriculture Organization (FAO); Global Methane Initiative (GMI); Global Research Alliance on Agricultural Greenhouse Gases (GRA); Wageningen UR Livestock Research; the International Livestock Research Institute (ILRI); Livestock and Poultry Environmental Learning Center (LPELC).

For more information about the CCAC follow the link: http://www.unep.org/ccac

Presenters at the side event: Professor Martin Kopff (WUR), Matt Hooper (Ministry for Primary Industries, New Zealand), Henk van der Mheen (WUR) and Victoria Hatton (NZAGRC).

ALLIANCE SIDE-EVENT

RUFORUM, MAPUTO, MOZAMBIQUE, 22 JULY 2014

The biennial conference for the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) attracted around 600 academic researchers, regional and pan-African research organisations from across Africa.

The conference is a major event in agricultural science and research in Africa and was an excellent event for promoting the work of the Global Research Alliance to a diverse audience.

The objective of the Alliance side event was to discuss the work of the Alliance, its Research Groups and research networks with African research and development organisations at various levels, Universities and scientists to identify opportunities for positive scientific engagement in the objectives of the Alliance.

The event was attended by more than 30 scientists from different organisations and institutions across the RUFORUM network. There was significant interest in participating in the work of the Alliance, particularly once scientists had a better appreciation of what the Alliance is about.

RUFORUM was established in 2004 as a consortium of 42 universities in 19 countries from Eastern and Southern Africa. Its mandate is to oversee graduate training and networks in this region, recognising the significant contribution of African universities to small-scale farming and agricultural development in sub-Saharan Africa.

From Uganda to New Zealand on a LEARN fellowship

Uganda has a large population of indigenous ruminants, and feeds of poor digestibility are associated with high energy expenditure in ruminants. This limits production efficiency and this is assumed to result in relatively high greenhouse gas (GHG) emissions per unit of human edible product. However, there is little information on actual GHG emissions from ruminants and about nutritive value of feeds under different farming systems that exist in Uganda.

Stephen Olinga graduated with a diploma in Animal husbandry in 2004 and aims to graduate with a BSc in Agriculture in September 2014. Stephen is currently a research technician in the Department of Animal Production, National Agricultural Research Organization (NARO) and he is also working with Nabuin Zonal Agricultural Research and Development Institute located in north eastern Uganda (Karamoja sub-region). He is currently involved in projects on crop-livestock integration in sustainable natural resource management, strengthening germplasm collection and forage seed production in Karamoja and evaluation of production methods and performance of Napier grass intercropped with legume mixtures in north Eastern Uganda.

Stephen Olinga working at AgResearch, Palmerston North.

Stephen has been awarded a LEARN Technician Fellowship to visit AgResearch Grasslands in Palmerston North, New Zealand for 6 months to gain knowledge and capability in methane measurement techniques in ruminant livestock and to measure nutritional value of forages and feeds. The knowledge and capabilities gained during the 6 month fellowship will be used to support similar research efforts in Uganda. During the fellowship, Stephen will learn about SF_6 tracer technology to estimate methane emissions from grazing ruminants including construction and assembly of SF_6 measurement equipment, permeation tube manufacture and calibration, gas subsampling and analysis and hands on experience in a field trial with sheep grazing pasture. Stephen will also gain an understanding of the principles and set up of *in vitro* batch culture systems including hands-on training on the automated *in vitro* gas production technique. In addition, he will be involved in the development and validation of a simplified manual *in vitro* system that can be directly translated for use in Uganda. Stephen will also have the opportunity to be involved in other projects to gain experience with respiration chambers for methane measurements, detailed pasture measurements and digestibility trials with sheep and/or cattle.

On his return to Uganda, Stephen would like to collaborate with his colleagues within the National Agricultural Research Organization (NARO) and other research institutes to develop research proposals and experiments to find ways of reducing emissions of methane from grazing ruminant livestock in Uganda, improve animal productivity and to get an better description of the nutritive value of forages and feeds. The new knowledge and skills will contribute to building a regional network of collaboration in East Africa among participants from countries with similar livestock production systems.

Dr Stefan Muetzel and Dr David Yáñez-Ruiz, in Palmerston North, New Zealand.

RumenStability and early life intervention under discussion in New Zealand

David R. Yáñez-Ruiz, senior scientist at the Animal Nutrition Institute (CSIC, Granada, Spain), is visiting AgResearch (Palmerston North, New Zealand) funded through a GRASS Award, offered by the New Zealand Government in support of the Global Research Alliance on Agricultural Greenhouse Gases.

David is working with Dr. Stefan Muetzel at the Nutrition and Health research group on the potential of nutritional interventions applied in early life of ruminants to program the rumen microbial ecosystem for low methane emissions in the adult animal.

The recent studies published by David's team (Yáñez-Ruiz et al., 2010, Abecia et al., 2013, 2014) show that manipulating the feeding management early in life would indeed promote different microbial populations establishing in the rumen of the young animal. David will present his latest results on Early-Life Programming and will work with AgResearch scientists to gain understanding of the processes occurring in the early life of the animal in relation to rumen development, immune system, metabolic profile and microbial colonization.

A workshop gathering scientists from AgResearch and Massey University will be held to evaluate the mitigation potential of such a strategy and to identify gaps of knowledge for future research studies.

Capability Building Opportunities

Global Research Alliance Senior Scientist (GRASS) Award

Supporting research in Agricultural Greenhouse Gases

The New Zealand Government has announced funding for senior scientists to participate in an exchange programme to enhance collaboration and the building of mutually beneficial research partnerships between New Zealand and other Global Research Alliance countries.

Focus areas

- Methane emissions from livestock and livestock wastes.
- Nitrous oxide emissions from livestock wastes.
- Enhancement of pastoral soil carbon sinks.
- Integrated whole farming systems impacts at all scales as they relate to livestock emissions.
- National inventory development as it relates to livestock emissions.

Eligibility

To be eligible, you must:

- Have a PhD or be a scientist with at least 5 years experience participating in/ leading major projects that align to the priorities of LEARN, the Alliance or other relevant national strategies.
- Demonstrate impact and leadership in your professional field.
- Be able to contribute to scientific research and its application in your home region and the larger Alliance network, based on your networking record.
- Work in collaboration with a New Zealand research organisation.
- Be resident and normally employed on a permanent contract by a research organisation in an Alliance member country.
- Be fluent in English.

Funding

The exchange must be between 6 weeks and 6 months duration.

- Up to $30,000 for 6 months (pro rata for less than 6 months) will be provided to recipients to cover actual and reasonable living expenses.
- Up to $5,000 will be provided for economy airfares and travel/medical insurance.
- Up to $5,000 will be awarded for associated research costs.

For more details refer to the LEARN Website:
http://www.livestockemissions.net/

Or Email the New Zealand Agricultural Greenhouse Gas Research Centre:
enquiry@nzagrc.org.nz

Upcoming events

Contacts

GLOBAL RESEARCH ALLIANCE
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