Livestock Research Group Meeting
Berlin, Germany
24 October 2024

MEETING REPORT

1. The 14th annual meeting of the Livestock Research Group (LRG) of the Global Research Alliance on Agricultural Greenhouse Gases (GRA) was held in Berlin, Germany on the margins of the 2024 Agri-GHG Symposium. The one-day meeting was chaired by the co-chairs of the LRG: Sinead Leahy (New Zealand), Tommy Boland (Ireland), and Richard Dewhurst (United Kingdom).
2. This report is a summary of the key discussions and outcomes of the meeting. All the presentations are available on the GRA website (here).

PARTICIPANTS

3. The meeting was attended by approximately 46 participants, including both in-person and online attendees, representing at least 21 member countries of the GRA and one observer country, as well as multiple partner organisations. For a detailed list of attendees, please refer to Appendix 1.

KEY MEETING OUTCOMES

4. The key outcomes identified during the meeting are presented below:
    - **Dissemination Activities:** Explore opportunities for broader dissemination of the Feed Additive Flagship's outputs to wider stakeholders (both academic and industry). This includes participation in relevant meetings, the development of webinars across networks, and enhanced LinkedIn communications.
    - **Engagement with the Global Methane Hub (GMH):** Identify key messages for presentation to the GMH, working through Co-Chairs and Network Leads. A meeting is needed to discuss next steps.
        - A particularly challenging but high-interest area is the interaction between low-methane genetics and feed additives, with potential links to rumen physiology.
        - Key focus areas include animal health, grazing management, and ration formulation.
        - Strengthening communication across networks, esp. through LinkedIn, will be essential.
    - **Science-to-Policy Facilitation:** Consider additional actions the GRA or LRG can take to enhance science-to-policy engagement as part of the wider GRA Council-led initiative.
    - **Skill Development and Capacity Building:** Identified as a key priority, with significant gaps across multiple areas, including a shortage of early-career researchers. This is particularly evident in LMICs and in relation to policy and practice change.

WELCOME AND LRG CO-CHAIR UPDATES

5. Dorothea Schildt welcomed the participants on behalf of the Federal Ministry of Food and Agriculture Germany (BMEL). She provided an overview of the GHG mitigation research discussions that had occurred on the preceding days - highlighting some of the challenges (and opportunities) for GRA research groups and networks.
6. Richard Dewhurst provided a high-level update on the LRG on behalf of the co-Chairs over the past 12 months and introduced the agenda for the day. Presentation available here

GRA SPECIAL REPRESENTATIVE UPDATES

7. The GRA Special Representative provided an update to the group.

8. Outcomes of the 2024 GRA Council meeting that are of relevance to the LRG include:
    - Spain will continue as GRA Council Chair until the end of 2024.
    - Ireland took on the role of Council Vice Chair and will start its role as Council Chair at the beginning of 2025.
    - A Working Group was established to develop the 2025-2030 Strategic Plan; chaired by Ireland with participating delegates from Canada, China, Germany, New Zealand, Spain, United Kingdom, United States, Zimbabwe.
    - A second Working Group was established to review the structure of Research Groups; chaired by Ireland with participating delegates from Australia, Canada, China, France, Germany, Ghana, New Zealand, Spain, South Africa, United Kingdom, United States, Zimbabwe.
    - First science to policy communication note to be developed on GHG emission metrics comparison and use for climate policy as pilot document ahead of the June 2025 Council meeting. The GRA Science to Policy Working Group to develop a process identifying future topics of interest.

9. The 2025 Council meeting will be held in June 2025 in Dublin hosted by Ireland as the incoming Council Chair.

NETWORK UPDATES

10. The LRG has five science networks, focussed on strengthening collaboration in the main areas of livestock GHG research. The coordinators of each of the Networks provided on-demand presentations on their respective Network activities since the 2023 LRG meeting and answered questions from participants.

Feed and Nutrition Network (FNN) - David Yanez-Ruiz

11. Presentation slides available here.
12. The Network focuses on ruminant feed and nutrition issues in relation to GHG emissions. There are 49 members in the Network and membership continues to grow. However, the Network could benefit from additional membership from Africa. Further information about the Network can be found on the GRA website.
13. Updates and future activities:
    - Various papers and guidelines have been published.
    - Produced equations on enteric methane on different species through international collaboration. Some of the recommendations have been taken up by the IPCC.

- Papers to be published end of December or early January. This will be followed up by a webinar.
- The next in-person meeting will be alongside the GGAA in Kenya (October 2025). This will be a good opportunity to increase the Network's African membership.

14. Q&A Session:
    - The GRA is a voluntary network. How much time does it take to lead this Network?
        - It depends. Having projects with regular meetings helps to keep the Network alive. Caveat: those projects are not helpful in bringing in everyone together. Maybe having a core group is better than having 1-2 people as leads.

Animal Selection, Genetics and Genomics Network (ASGGN) – Suzanne Rowe

15. The ASGGN is a forum for scientists exploring the impact of genetic technologies for managing livestock greenhouse gas (GHG) emissions. Further information about the Network can be found on the GRA website.
16. Updates and future activities: [not documented]

Rumen Microbial Genomics (RMG) Network – Milka Popova

17. Presentation slides available here.
18. The Network focuses on methane mitigation by understanding microbial mechanisms and has grown in success and numbers of participants. The Rumen Microbial Genomics Network has an active Twitter/X account (@RMGNetwork), where Network events, publications and activities are shared. Further information about the Network can be found on the GRA website. There are 219 scientists registered as members of the Network.

19. Updates and future activities:
    - 2024 RMG Webinar "Rumen Microbes: Back to the roots of culture" attracted ~ 90 participants for each session. It provided in-depth discussions on the state-of-the-art techniques for culturing rumen microbes; expert insights on overcoming common cultivation hurdles; and practical tips for wet lab techniques to explore the vast repertoire of the rumen microbiome.
    - 2024 RMG Workshop "Implications of the Nagoya Protocol for researchers working with biological material from abroad". Organised by the German Nagoya Protocol Hub (web-based meeting) and scheduled for November 21st 2024 1h00-3h00 PM
    - Literature reviews are a priority for 2025:
        - Early life microbial acquisition health, performance & environmental footprint in adulthood (L. Guan, I. Tapio, J. Seifert, M. Popova)
        - Extending knowledge on rumen microbes: qualitative/quantitative evidence synthesis of genomic data from public repositories (metagenomes/MAGs); meta-analysis type review (Y. Cheng)
    - The Network's 2025 in-person workshop was initially planned to focus on bioinformatics and/or SynComs with a keynote speaker from Hildebrand Lab. However, as of March 2025, the workshop topic has been updated to: "Rumen Innovations for a Sustainable Future in Livestock Farming" featuring keynote speakers from New Zealand, Canada and China (self-funded).

Manure Management Network (MMN) – Tony Van Der Weerden, Barbara Amon

20. Presentation slides available here.

21. The Network is a global forum for scientists focused on reducing greenhouse gas emissions from livestock production systems and increasing the nutrient use efficiency of manures through the improvement of manure management. Further information about the Network can be found on the GRA website.
22. Updates and future activities:
    - Introducing a new co-lead for the network: Sven Gjedde Sommer.
    - Planning to develop and submit guidance on what data should be reported for inventories (NDCs) in early 2025.
    - The manure guidelines in the IPCC are still erroneous. The IPCC says that inventory compilers get to choose either housing or grazing systems.
    - Joint call enhancing circularity between crop and livestock farming systems. Many of them include manure management (one through the involvement of Dave Chadwick). There is an opportunity to build connections between the two (crop and livestock). Opportunity for co-funding through the GRA.
    - A call was sent out to the network members to seek feedback on whether this network should expand to include circularity. The response was to stay within the bounds of manure management as the focus for this network.
    - Opportunity to learn from and connect with circularity at the GGAA conference next year.
    - DATAMAN which is freely accessible database and was funded through the GRA is a tangible output of this network. One way to develop it further is through contributing data to continue building this database and prevent the database to become out of date. Additionally, the database needs to be more regionally balanced as currently most of its data is from the Global North. The current data comes from France which was primarily housing systems, in addition to sizeable databases from NZ and UK.
    - Looking for an opportunity to connect with partners such as ILRI to focus on the African side of the network.
23. Q&A Session:
    - Comment from Barbara Amon: There is so much to learn about circularity. Support the idea of having a final workshop to report on experiences.
    - Comment from Vibeke Lind, Co-chair of the GGAA2024: The GGAA themes include manure management. This may be a good opportunity to have final discussions about the nine projects.
    - How did the DATAMAN database come together? Who contributed?
        - This was a GRA-funded piece of work followed by MELS Project led by Barbara Amon. It's live and free to access at: www.dataman.co.nz One database was from France which was primarily housing systems in addition to sizeable databases from NZ and UK. There are a lot of individual datasets available that can be collated. However, DATAMAN is an unbalanced data set, we do need data from Africa, and other regions of the world as well.

Animal Health and Greenhouse Gas Emissions Intensity Network (AHN) – Nick Wheelhouse

24. Presentation slides available here.
25. The aim of the Network is to bring together researchers from various fields to identify links and synergies between the control of animal diseases and the reduction of GHG emission intensity. The network currently has about 70 members. Further information about the Network can be found on the GRA website.

26. Updates and future activities:
    - Increase in applications from East Africa, especially among young early career academics

- Major outputs are centred around a project funded by EDF and Bill & Melinda Gates Foundation among others. More work and policy briefs to be expected.
- The activities of the network are very popular, esp. on the social media.
- The Network's newsletter has been active for three years disseminating members' activities biannually.
- Project: Animal Health as a Climate Solution - Some activities and workshops coordinated within the EDF as well as fieldwork activities looking at the potential impact of mastitis to be launched in October.
- Seyda Ozkan was involved in some collaborative work with the FAO
- Lydia Lanzoni has been the network's communications coordinator for two years now.
- The Network now has a LinkedIn page called GRA Animal Health Network with double the number of followers ever had on Twitter/X. Follow the network!
- Working with LD4D climate finance. Hoping the bilateral relationship will move forward with the current work of the Network to address data gaps.

27. Q&A Session:
    - How to incorporate various issues into the network?
        - We've been traditionally siloed. Will have more discussions on how to have a transdisciplinary approach (e.g. through workshops).
    - The biggest problem in a country such as South Africa is ticks which are occurring in areas never seen before.
        - Vector-borne diseases are big issues within LMICs. Vaccines are not a priority in those countries. The issue of climate change and vector distribution will be a major issue over the next few years.

Working together to support the GRA's research Flagships

28. This session, facilitated by Sinead Leahy, comprised three segments. The first segment featured updates on the two Flagship projects under the LRG. The second segment included presentations on shaping the future direction of the LRG Flagships. The final segment involved elevator pitches that proposed ideas for potential future Flagships, followed by discussions.

CURRENT FLAGSHIP UPDATES

29. GRA Flagship Projects are specific, time-bound projects that have been approved by the GRA Council. They are led by a community of experts within the GRA membership.
30. These projects develop new knowledge to better understand agricultural greenhouse gases, have global relevance and applicability, and generate high scientific impact.
31. The GRA works collaboratively, bringing together researchers from all over the world, to deliver its Flagship Projects. These key priority projects have been identified as uniquely suited to the research expertise and global membership of the GRA.

Feed Additive Flagship - David Yanez-Ruiz

32. Presentation slides available here.
33. The main goal of this Flagship is to facilitate the development of methane inhibiting feed additives and provide technical guidelines and protocols on best practices for their development.
34. Focus on establishing accounting methods for inventories, farm-level assessments, etc.
35. A network of experts has been built which is a good example of collaborative effort.
36. Held 3-4 workshops and webinars aimed at structuring the guidelines and achieving more concrete results.
37. Six working groups have been formed, with 53 members from various countries participating. There will be 6 manuscripts published in a special issue in the Journal of Dairy Science at the beginning of 2025.
38. Work under development: identification of new feed additives, screening in the lab, and understanding their mode of action, what needs to be considered to account for these reductions.
39. In most of the working groups, two experts lead the efforts.
40. Key challenges are translating the findings for a wider audience, such as policymakers and industry stakeholders, and collaborating effectively across different themes.
41. Planning to develop two webinars focussed on the academic and technical aspects, with more dissemination activities outlined in the slides.
42. Q&A Session:

- Funding is key. A lot of people are putting in considerable amount of work without much funding. Would you see that as a drawback?
    - In the case of this project, not sure if more funding would have worked. The challenging part is in collaboration efforts across different themes.

Rumen Gateway - Fernanda Godoy Santos

43. Presentation slides available here.
44. This project is a collaborative international consortium in continuous expansion, focused on culturing and characterizing rumen microorganisms to enhance knowledge of rumen microbial diversity. By isolating and analysing key microbial strains, the project aims to deepen our understanding of microbial interactions, metabolic pathways, and their impact on fibre degradation, nutrient utilization, and methane emissions. Through international collaboration,

partners share protocols, harmonize methodologies, and work together to address technical challenges, including identifying skill gaps and developing targeted training programs. This collective effort not only advances fundamental microbiological research but also paves the way for applied innovations, such as the development of microbial-based interventions to optimize rumen function and reduce methane emissions. The central objective of the project is to establish a global biobank alongside a comprehensive database that integrates metadata on isolates, functional traits, and their potential applications.

45. The project encountered a lengthy bureaucratic process in establishing a unified collaborative agreement across all participating institutions. This complex negotiation, necessary to align institutional policies and legal requirements, led to delays in some deliverables. However, these challenges have now been addressed, and efforts are underway to compensate for lost time, ensuring that project milestones are met through accelerated implementation strategies and strengthened coordination among partners.
46. Developed a logo for the project.
47. Developed and distributed surveys (e.g. about the workshops) including a survey about what each laboratory could offer.
48. The goal is to expand the international biobank of pure rumen cultures alongside a comprehensive, well-structured database. This database will serve as a central resource for researchers and industry stakeholders, facilitating data sharing, comparative analyses, and the integration of complementary initiatives. It will ensure synergy between different research efforts focused on rumen microbiology, microbial isolation, and methane mitigation technologies.
49. The project is actively supporting the training of seven PhD students, including both enrolled candidates and visiting scholars, as well as visiting researchers from partner institutions. This initiative fosters knowledge exchange, capacity building, and international collaboration, providing early-career scientists with hands-on experience in rumen microbiology and anaerobic microbial isolation. These training opportunities contribute to strengthening the global research network and advancing expertise in sustainable livestock solutions.
50. Q&A Session:
    - Indigenous microbes are a challenge across the world. Are you facing this challenge and how are you dealing with it?
        - Yes. We recognize the challenges of accessing indigenous microbes globally. While assessing microbial biodiversity in each country, we must also ensure compliance with national regulations. Therefore, flexible access frameworks are essential to respecting institutional and legal requirements.

SHAPING THE FUTURE FOCUS OF LRG FLAGSHIPS

51. This segment focussed on the development and future direction of Flagship projects within the LRG, featuring two presentations, each followed by a Q&A session. The discussions explored strategies for advancing and implementing LRG Flagship projects globally.

Agriculture: How can the LRG contribute? - Hayden Montgomery (Online)

52. Hayden Montgomery, Global Methane Hub (GMH), was the first presenter for this session.
53. GMH was launched at COP26 in Glasgow, with a focus on methane emissions. It works across several domains, providing charitable funding and supporting R&D to scale agricultural practices that increase productivity and reduce methane emissions. GMH also offers policy support by granting funds to organisations assisting governments in developing methane mitigation strategies.

54. Human activities contribute to approximately 60% of methane emissions. GMH aims to identify scalable agricultural practices that mitigate methane emissions and can be implemented quickly.
55. The GMH has launched a $200 million global funding initiative, with contributions from governments, foundations, and other organisations. Key focus areas include methane measurement, microbiomes, and feed additives. GMH encourages participants to review its published research strategy and consider how LRG Networks can contribute.
56. Communication is crucial for visibility. Hayden emphasised the importance of maintaining an up-to-date website and using platforms like LinkedIn to attract funding. Networks should also leverage social media to enhance visibility.
57. Hayden stressed the need for clear articulation of project priorities and anticipated costs for successful funding proposals. Projects should align with GMH's goals and be well-defined to meet funding criteria.
58. The Networks within the GRA are unparalleled in terms of the expertise and the reach. The depth and reach seen at LRG is unique.
59. Challenge: More than 50 people are involved in the feed additives projects and only some of them are getting funded.
60. There are no studies that have looked at the combinations of feed additives in combination with low methane emissions.
61. Q&A Session:

- How can we address the challenge of limited expertise in certain areas and the differing pace between funders and scientists?
    - The GMH values training and capacity building, providing opportunities for postgraduates and early-career scientists. GMH is interested in projects that address livestock methane and manure management without compromising the speed of work.
- How does the GMH handle varying overhead costs across different organisations?
    - The maximum amount of the overhead acceptable at GMH is 15% of the total value of the contract. This is the same for most foundations, although for some the acceptable level is capped at 10%. GMH can fund consumables and other project-related costs.
- Does the GMH work on packaging information for policymakers?
    - GMH is interested in seeing how the communication output of a project is going to be used by policymakers, especially in developing countries, and encourages documenting successful strategies rather than offering generic recommendations. The GRA could also play a role in this process.

Methane mitigation: Joint nutritional and genetics solutions needed - Birgit Gredler-Grandl

62. Presentation slides available here.
63. Birgit Gredler-Grandl from Wageningen University & Research introduced a collaborative initiative involving nutritionists and geneticists to develop solutions for methane mitigation and livestock.
64. The group aims to facilitate international research collaboration, including organising webinars and building networks around key topics of interest.
65. The Global Methane Genetics program, in collaboration with the GMH, received funding from the Bezos Earth Fund, with a budget of $20-30 million for global projects.
66. The program is built around three pillars: 1) Developing protocols and building networks, 2) Data collection and phenotyping, 3) Implementation and genetic evaluation, including breeding programs.
67. Over 100 people have been involved in discussions, and the program is now beginning to adopt and promote its findings to farmers, involving all stakeholders in the process, from AI organisations to policymakers.

68. The program has received proposals from countries including North America and several African nations, with funding decision still under review by GMH.
69. The mission is to integrate nutrition and genetics to jointly address methane emissions, with plans to create an inventory of existing data to estimate breeding values for animals and explore relationships between genetics and methane emissions.
70. Q&A Session:

- What countries are involved in the working group from Asia?
    - The group includes China and India, though involvement from India has been challenging. The working group continues to engage and seeks to expand collaboration within the region. Great opportunities in the GRA, if there is interest among member countries to collaborate.
- Important to map how the population of dairy cattle is breeding for reduced methane around the world. What levels of breeding intensity are we targeting?
    - It will be important to develop a global inventory of existing and new data – work with existing selection lines, new experiments and large data sets coming from the industry
- Breeding activity needs to link in to work to understand what (e.g. aspects of animal physiology) is driving low methane emitters, early data suggest a heritability of 0.18 and we need to know for example if there are differences in cow's response to methane inhibitors.

POTENTIAL FLAGSHIPS

71. In the third and final segment of the Flagships session, Suzanne Rowe and John Tauzel delivered elevator pitches presenting ideas for potential future Flagships. As background, during the LRG meeting, John along with a group of collaborators, participated in a separate session focussed on exploring a potential Flagship project on Animal Health. John's pitch served as a concise debrief of the outcomes from that meeting.

Genetics Flagship - Suzanne Rowe

72. The focus is on exploring the entire digestive tract.
73. The aim is to use biological information to create a solution that is robust and applicable across species and populations.
74. The idea has been presented to DAFM (Ireland) and MPI (New Zealand) as part of a collaboration between the two countries.
75. We would like to turn this idea into a Flagship project, expanding it to involve other countries and systems for global relevance.
76. The project needs to be global in scope and offer comparability across regions.

Animal Health - John Tauzel

77. Under the GMH, the focus is on how to integrate animal health commitments into national inventories.
78. The details of the Flagship concept are still being determined, with an emphasis on scientific justification.
79. Ongoing work involves identifying how countries can participate in the process and what the major diseases are in each country.
80. The project is still under development, with more information to come. Stay tuned.

SCIENCE TO POLICY PANEL DISCUSSION

81. This session, facilitated by Tommy Boland, focussed on exploring ways the LRG can strengthen its connections with policymakers and enhance its contribution to the goals of the GRA's Science to Policy Working Group. The session featured three panelist presentations, each offering a unique perspective on science-to-policy. The first panelist, representing the Irish Department of Agriculture, Food and the Marine (DAFM), discussed the role of science in policy making in Ireland. The second shared insights from a scientist's perspective, while the third, from the European Commission's DG AGRI, provided the policymaker's viewpoint. The panel discussion was followed by a Q&A session.

The role of science in shaping policy: The Irish experience - Karl Walsh

82. Presentation slides available here.
83. Karl Walsh from DAFM, presented on Ireland's experience in integrating science into policymaking.
84. The main challenges in science-to-policy include combatting fake news, dealing with short attention spans, balancing normative values with political priorities, and the non-linear nature of policymaking. Continuous interaction between scientists and the policymakers is crucial.
85. There is no formal system in universities to reward researchers for engaging in policymaking, though some Irish programs encourage researchers to embed within ministries.
86. A robust library system is essential for ministries, as they often struggle to access scientific journals.
87. Calls for proposals should require researchers to develop a knowledge transfer plan, including policy engagement from the start and impact statements (including policy impact). Proposals should be scored based on these criteria.
88. Tools used by the Irish Government to translate scientific findings into policy include incentives for farmers, education and advisory programs, and regulation.
89. The "Science into Action" conference held last year successfully brought together scientists and policymakers.
90. Effective science communication involves speaking with an authoritative, independent voice, sharing objective evidence, and balancing facts, interests, and values. Recommendations should be specific rather than general.
91. As the incoming Council Chair, Ireland welcomes the GRA's increasing involvement in science-to-policy efforts, noting that the upcoming Ireland Council Meeting would include tours of research centres.

Science to policy study case: Flagship project on feed additives - David Yanez-Ruiz

92. Presentation slides available here.
93. David Yanez-Ruiz presented a science-to-policy case study from a scientist's perspective, focussing on the Flagship project on feed additives.
94. The case study explored applying the legislative framework, looking at different regions and countries as examples. The study involved engagements and collaborations with policymakers worldwide.
95. In the UK, there is a unique situation following their departure from the EU, with strong interest in the work and information being generated. Direct engagement with policymakers has helped in policy development.
96. Other examples include collaborations with the FAO.
97. Policymakers often want to understand the industry's perspective, while scientists occupy a middle role, which can be challenging.
98. Recommendations included considering whether the link between science and policy is effectively facilitated within the GRA space (e.g. through capability building, webinars, etc.), as

well as considering science-policy links early on in project design and development. Different approaches, such as top-down, and co-development, should also be explored to strengthen these connections.

Policy maker perspective - Valerio Abbadessa

99. Presentation slides available here.
100. Valerio Abbadessa from DG AGRI presented on the policymaker's perspective regarding the science-to-policy cycle, emphasising its circular nature.
101. A key challenge highlighted was ensuring that science is incorporated into policy decisions as objectively as possible.
102. Reinforcing trust and transparency in the policymaking process is crucial to achieve public convenience, affordability, and intended outcomes.
103. Scientific information is just one type of evidence needed for policymaking, with other factors such as environmental, economic, and social considerations also playing a role.
104. Policymakers must navigate different types of evidence to make informed decisions.
105. In the EU, two main pillars guide the policymaking process:
    - Impact assessments, which evaluate the socio-economic and environmental impacts.
    - Public consultations, which begin after the impact assessment is completed.
106. Within the agri-food system, various policies, visions, and initiatives shape the sector, ranging from markets and products to environment, climate, health, research, and innovation. Many of these policies directly affect primary production, though synergies and trade-offs across them may not always be immediately clear.
107. Several examples of feedback to policy were presented including the Scientific Advisory Mechanism (SAM), composed by the Group of Chief Scientific Advisors (GCSA) and the Scientific Advice for Policy by European Academies (SAPEA), which is tasked with providing independent scientific advice to European Commissioners.
108. Examples of the different procedures followed by the Joint Research Centre (JRC) and the European Food Safety Authority (EFSA) in the science-policy interface were provided.
109. Feedback loops in policy planning are designed to anticipate future policy needs and ensure timely adjustments based on emerging scientific data.

Q&A Panel

- It's difficult for policymakers to know which proposals to fund. How do we address this?
    - It is not about supporting certain applications, but about preparing for them.
    - In Ireland, there is an ongoing conversation with Irish Universities Association to consider if involvement in policy-related research could be a criterion for academic career progression.
- What do policymakers need from the scientific community?
    - In Ireland, we introduced a new research funding instrument where Ministry policy colleagues list their research needs, and we fund projects in those areas on a two-year cycle. Typically, we get about 30 topics across the Ministry, focussing on short-term policy questions.
    - In the EU Framework Programme for Research and Innovation, the policy priorities to be addressed are already listed in the calls. It's up to the researchers how to tackle them. Furthermore, some EC policy officers are involved as advisory board members in some of the funded projects. The EC recently received the final report of the Strategic Dialogue on the future of EU agriculture launched at the beginning of 2024 with the involvement of stakeholders from the EU agri-food sectors, civil society, rural communities and academia. The EC now has about three months to assess Dialogue's recommendations and elaborate the Vision for Agriculture and Food that sets the priorities for the next Commission.

- Considering the slow process of science and regulatory approvals, are there areas of convergence identified between jurisdictions? This might be something the GRA could do: Clear recommendations to policymakers to speed up the process of accounting for reductions in inventories.
    - The paper presented above didn't go into the detailed comparison of everything. Rather, it looked at the commonalities and those that differ. We should develop mechanisms where reductions are fairly accounted for.
- Researchers are increasingly expected to engage with farmers and industry, but there are specialist roles for these tasks. What are your thoughts?
    - We usually have people working on technology transfer in the industry. It would be good to also have people who are specifically working on science to policy.
    - With the Multi-actor approach implemented by the EC, farmers, practitioners and people working in the rural areas are involved in project design and implementation. In addition, there are several topics related to developing the skills of the farmers to participate together with researchers and other stakeholders.
    - It's a good idea to provide technical scientific evidence to farmers. When we open research centres, it's the researchers that tend to stand in front of the farmers.
    - In Ireland, some practices that work well include setting up research boards and avoiding statistics in posters. For example, in conversation with the policy people in the Climate Ministry, we emphasise that there is no need to reduce livestock numbers and that we can use the technologies. All farmers need to use feed additives, but only one of them is approved. Things are not moving fast enough.
    - In terms of the regulatory aspect in the EU, feed materials don't go into the same approval process as feed additives.
    - In terms of the inventories, recently formally established an inventory group at official level involving scientists, policy people, and the environmental protection agency.
- What is the role of political will?
    - Without it, progress challenging. We will need to focus on win-win policies that improve food production and have mitigation co-benefits.

PARTNER UPDATES

110. Four partners of the LRG provided on-demand presentations to showcase their LRG-related portfolios and discuss updates, future priorities, and new opportunities for collaboration. LRG partners also answered questions from participants.

FAO GLEAM: Ongoing developments, and future directions – Dominik Wisser

111. Presentation slides available here.
112. Dominik Wisser from FAO discussed the GLEAM tool and its evolution to better assess livestock's role in climate change.
113. The goal is to transform GLEAM into an openly accessible web application that functions at various scales (farm-level, regional).
114. Expansion into other domains is planned.
115. Key areas for improvement identified: emission factors (EF) for feed, manure, and post-farm processes.
116. Efforts are made to ensure project data from countries is incorporated into the database.
117. Consumer roles and international trade impacts on emissions and their allocation are considered.
118. Soil Carbon dynamics and grazing management are additional models to be implemented, with ongoing requests from countries.
119. An uncertainty assessment will identify data gaps and prioritise improvements.
120. There are opportunities for involvement in the network, guided by a newly established scientific advisory board.
121. Quantification and simulation of feed additives' effects on emissions are underway.
122. Q&A Session:

- How do you intend to incorporate mitigation into GLEAM?
    - There are certain interventions that we cannot simulate. Similarly for feed additives, the interventions are simulated at a certain scale before applying them on a larger scale.
- What level of scientific rigour is required before incorporating elements into GLEAM?
    - Adherence to IPCC guidelines is necessary, and transparency in methodology is key. The tool evolves as new information is integrated over time.
- Differences in emissions figures between FAO and national inventories—how are these addressed? Is there an effort to align with national inventories?
    - Animal stats come from FAOSTAT reported by countries. Access to accurate data has been a past challenge, but with consistent data, results align closely with national inventories. The aim is to improve data quality by working more closely with countries.
- It would be really useful for scientists to know what kind of difficulties you get into working on GLEAM and what assumptions are being made. It would be good to have further conversations on this topic.
    - Engaging in further conversations about emissions impacts, barriers to uptake, and farmer acceptance of interventions is crucial.

CCAC - Greg Kohler (Online)

123. Presentation slides available here.
124. The Climate & Clean Air Coalition (CCAC) works at the intersection of health and climate pollutants including pollutants resulting from agriculture (e.g. enteric methane from livestock, methane from manure and paddy fields, and black carbon from burning crop residues). The CCAC is a UNEP convened initiative and has historically focussed on short-lived climate pollutants (SLCPs).

125. Currently CCAC is focussed on COP30 and the emphasis on agriculture through investing in sustainable solutions, building evidence base, scaling innovation, and raising ambition.

126. The main focus is on the overlap of climate mitigation with other opportunities, particularly in the livestock sector, such as poverty reduction and adaptation co-benefits.

127. A webinar series is being offered, covering topics such as livestock and data.

128. At COP29, CCAC launched the Technology and Economic Assessment Panel (TEAP) initiative to share knowledge about promising but underfinanced SLCP mitigation measures. Partners include Senegal and Ireland.

129. A new N2O Assessment will be launched soon, focussing on opportunities to reduce N2O emissions in industry and agriculture.

130. Countries are revisiting their NDCs by 2025, and CCAC is supporting these efforts, particularly as the final opportunity to update NDCs before the 2030 target under the Paris Agreement approaches.

131. Special thanks to Harry Clark for assisting with CCAC's ag and food systems emissions report.

EDF - John Tauzel

132. The Environmental Defense Fund (EDF) was founded in the 1960s with a focus on ensuring people have access to vital nutrition.
133. EDF has focussed on methane for over a decade, initially concentrating on oil and gas before expanding to include livestock.
134. EDF works to help farmers accelerate adoption of best practices and drive innovation through partnerships with scientists. It is the first NGO partner of the GRA.
135. Below are some of the activities of the EDF over the past year:
    - Launch of the Dairy Methane Action Alliance (DMAA) with dairy companies stepping up to report methane emissions.
    - Scientific engagement through expert panels that complement GRA Flagship projects.
    - Use of standards to inform FDA's review of Bovaer.
    - Exploration of financing mechanisms alongside policy-related activities.
    - Issued a report on carbon market protocols, including manure management protocols and enteric protocols, assessing their fit for purpose.
136. Emerging topic: manure management systems and MRV.
137. Challenge: thinking about methane in a carbon-based world.

Global Dairy Platform - Brian Lindsay

138. The Global Dairy Platform (GDP) brings dairy companies, associations, scientific bodies and other partners together to collaborate pre-competitively to lead and build evidence on dairy's role in the diet and show the sector's commitment to responsible food production.
139. MiLCA project: Collaboration between five dairy organisations and GRA to explore how the private sector can incorporate feed additives into life cycle assessments (LCA). Focus on reporting conservatively, ensuring data integrity, and avoiding accusations of greenwashing. The project aims to develop a responsible approach for integrating feed additives into LCA, working with real data from companies and providing a checklist for their use. Key challenge is the discounting factor. The goal is to build on the GRA Flagship project.

140. Pathways to Dairy Net Zero: Capturing the work diary companies are doing to move toward net zero and bringing these efforts under one umbrella. The project focusses on raising finance for initiatives in Africa, Pakistan, and Latin America, with a target of raising $2.7 million for four African countries. In developing economies, the project covers workstreams in dairy processing, GHG protocol, and dairy nutrition. Efforts aim to accelerate progress in climate finance and innovation.
141. Other piece of work: Working on GHG protocol and a methodology applied by businesses for mitigation across all industries. The goal is to develop a single, industry-specific methodology for dairy, which will require consultations and a transparent process.
142. Also engaged in the Animal Health initiative discussions along with EDF and GRA.

WRAP UP & FUTURE LRG WORKPLAN

143. A wrap-up of the day was provided by Tommy Boland.
144. Focus on strengthening the science-policy connection.
145. Important to bring in and support young professionals.
146. With the expansion in the membership of the GRA, the LRG co-chairs will look at adding a new co-chair to the LRG representing the Global South.
147. The strength of the GRA lies in its global network of experts, though there are still membership gaps in some regions, which need addressing to enhance global reach. As a start, LRG and its Networks could run a survey to identify gaps in memberships.
148. GMH presented a unique opportunity to work together to provide and develop solutions and deliver them.
149. There is a clear need to accelerate the pace of change, with discussions on how to harness the potential of GMH to foster collaboration and develop solutions.
150. Importance of effective communication particularly when it comes to attracting funding. Ensuring the LRG and its Networks have online presence on the right platforms and that information is shown accurately on the GRA website.
151. Emphasis on lobbying national governments to allocate resources to the GRA, ensuring the activities are properly supported, especially since GRA operates on a voluntary basis without a joining fee. Encouraging countries to understand the value of the GRA will be key to future resource allocation.
152. Emphasis on the need to harvest results from project activities and initiate workshops at the start of projects rather than only at the end, ensuring continuous input and refinement.
153. Insights from Partner organisations highlighted the value of close relationships and interactions between Partners and individual members of the LRG, particularly around science-to-policy efforts.

NEXT MEETING

154. The meeting came to close with a presentation on the GGAA 2025 conference as the proposed venue for the LRG's next annual gathering.

Presentation on GGAA 2025 – Vibeke Lind

155. Presentation slides available here.
156. The 9th GGAA2025 will take place at the Sarit Expo Centre, Nairobi's largest
157. conference venue, located in Westlands. The venue has rooms that can hold 40 to 200 people.
158. The program starts on Sunday 5th October 2025 with pre-conference workshops and opening ceremony. The plenary and breakout sessions as well social events will be held on the 6th-8th October 2025. On 9th October, there will be post-conference tours.
159. Conference themes: Impact of Animal Feed and Nutrition on GHG Emissions; Animal Health, Genetics, and Genomics for Climate Resilience; Rumen Microbial Genomics and Nutrition; Manure Management; GHG Emissions from Agricultural Soils and Grazing Systems; Circular Economy; Scaling and Modeling of GHG Emissions; National GHG Inventory and Policy Frameworks with Carbon Finance Mechanisms; Measurement Techniques for GHG Emissions.
160. Inviting reviewers from the GRA community to join the review team.
161. Registration will be announced soon.
162. Suggested date for the next LRG Annual Meeting: Friday 10th Oct 2025. Venue could be Sarit meeting centre or at ILRI.
163. It is also possible to organise Network meetings. Can help facilitate for the location and rooms.

Appendix 1: Participants List

Disclaimer: The following list includes individuals who registered for the meeting. While efforts were made to verify attendance, the list may not accurately reflect all participants who attended the meeting.

Country	Attendees
GRA Member Countries	
LRG Co-Chair (New Zealand)	- **Sinead Leahy**, NZAGRC, sinead.leahy@nzagrc.org.nz
LRG Co-Chair (Ireland)	- **Tommy Boland**, University College Dublin, tommy.boland@ucd.ie
LRG Co-Chair (United Kingdom)	- **Richard Dewhurst**, Scotland's Rural College, Richard.Dewhurst@sruc.ac.uk
Argentina	- **Patricia Ricci**, Instituto Nacional de Tecnología Agropecuaria (INTA), ricci.patricia@inta.gob.ar - **Olegario Hernández**, Instituto Nacional de Tecnología Agropecuaria (INTA), hernandez.olegario@inta.gob.ar
Bangladesh	- **Nathu Sarker**, Krishi Gobeshona Foundation, sarkernr62@yahoo.com - **Sardar Muhammad Amanullah**, Bangladesh Livestock Research Institute, amanullah@blri.gov.bd - **Ashraf Biswas**, Chattogram Veterinary and Animal Sciences University, biswas30669@gmail.com (online)
Belgium	- **Sam De Campeneere**, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), sam.decampeneere@ilvo.vlaanderen.be
Brazil	- **Luis Gustavo Barioni**, Embrapa - Brazilian Agricultural Research Corporation, luis.barioni@ed.ac.uk
Cameroon	- **Kingsley Agbor**, Etchu Institute of Agricultural Research for Development (IRAD), Etchu74@gmail.com - **Christian Tegha Kum**, SEEADO: Soil Organic Carbon Community of Practice (AFCAP), CLIFF-GRADS Scholar, teghechrist@yahoo.com (online)
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Peru	- **Carlos Gomez**, Universidad Nacional Agraria La Molina, cagomez@lamolina.edu.pe
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Spain	- **David Yanez-Ruiz**, CSIC, david.yanez@eez.csic.es – FNN Lead

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Observers	
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GRA Partner Organisations and Invited Experts	
Climate and Clean Air Coalition (CCAC)	- **Gregory Kohler**, CCAC, gregory.kohler@un.org (online)
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CGIAR- CIAT	- **Fernando Florez**, International Center for Tropical Agriculture (CIAT), j.f.florez@cgiar.org - **Jacobo Arango**, Alliance Bioversity and CIAT, j.arango@cgiar.org
FAO	- **Dominik Wisser**, FAO, dominik.wisser@fao.org
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Global Methane Hub (GMH)	- **Hayden Montgomery**, GMH, hayden.montgomery@globalmethanehub.org (online)
World Bank	- **Martin Paul Jr Tabe-Ojong**, World Bank, mtabeojong@worldbank.org
Invited Experts	- **Şeyda Özkan**, Livestock Climate Solutions, ozkanseyda@outlook.com

	- **Brian Lindsay**, Dairy Sustainability Framework, Brian.lindsay@dairysustaiunabilityframework.org - **Caeli Richardson**, AbacusBio International Ltd, crichardson@abacusbio.com - **Barbara Amon**, ATB Potsdam, bamon@atb-potsdam.de (online) - **Xuefei Li**, International Methane Emissions Observatory (IMEO), United Nations Environment Programme, xuefei.li@un.org
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