

ALLIANCE COUNCIL MEETING

Residencia de Estudiantes, CSIC Main Campus Madrid, Spain

Monday 24 – Wednesday 26 April 2023

OVERVIEW

The twelfth Global Research Alliance on Agricultural Greenhouse Gases (GRA) Council meeting took place on Monday 24 and Tuesday 25 April 2023 in Madrid, Spain. Delegates were welcomed at an evening reception on Sunday 23 April at the National Museum of Natural Sciences, and participated in technical visits on Wednesday 26 to the Irrigation Technology Center (Ministry of Agriculture) at San Fernando de Henares and INIA research campus at Alcalá de Henares. The meeting was opened by Dr Esther Esteban Rodrigo, Director of the Spanish National Agricultural Research Institute (INIA) on Monday morning, welcoming all delegates to Spain to participate in the first in-person meeting of the GRA Council held since 2019.

This report is a summary of the key discussions and outcomes from the meeting.

PARTICIPANTS

The meeting was attended by 24 representatives from 21 countries and other invited guests:

- **GRA Member Countries:** Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Denmark, DR Congo, Fiji, Germany, Ireland, Japan, Lithuania, the Netherlands, New Zealand, Spain, Switzerland, United Kingdom, Uruguay, United States of America.
- **Invited Partners:** 4per1000 Initiative, AgMIP, CABI, CCAC, CIHEAM, EDF, European Commission, FACCE-JPI, FAO, Global Methane Hub, World Farmers' Organisation

Refer to Appendix 1 for a full participants list.

QUORUM

With 21 member countries attending, a quorum was not achieved. The procedure for confirmation of decisions will be as follow:

- The list of key outcomes from the meeting are presented below.
- Approval of these outcomes should be provided to the Alliance Secretariat by 30 June 2023. If the Secretariat is not informed of any concerns by this date, the decisions will be confirmed.

KEY OUTCOMES OF MEETING

The outcomes identified during the meeting will be confirmed through the development of the annual Operational Plan that sits under the GRA Strategic Plan.

Outcomes
Council
Following the meeting South Africa confirmed willingness to become Vice-Chair for 2023 and host of the 2024 Council meeting.
Global Methane Hub endorsed as a GRA partner.
Council passed the acceptance of the following proposed GRA Flagship Project: <ul style="list-style-type: none"> Agroecology and Agroforestry: adapting systems and mitigating against climate change (Council Champions: Spain, Brazil, Argentina, UK, USA, Chile, Colombia, Canada).
Science to policy communication working group to be established to discuss how the GRA can better communicate findings to policy makers. (<i>Working Group: Spain, Australia, Brazil, Canada, Denmark, Germany, New Zealand, Switzerland, United Kingdom, Uruguay, USA, EDF, GMH</i>)
GRA Flagship Projects to be strengthened as a mechanism to help coordinate and pool funding.
Request to Council members to support the CLIFF-GRADS programme, including by hosting students for the Round 6 call in 2023.
Research Stocktake working group to submit the report on 10 years of GRA activities ahead of COP28.
Actions to remain on the Operational Plan for 2023: <ul style="list-style-type: none"> Partners Page on the GRA Website
Research Groups
Launch Mediterranean Agriculture Network on GHG mitigation, led by CIHEAM
Research Groups and Networks seek Council support to enhance research.
Continue to foster collaboration between Networks, especially through the establishment of new Flagships.
Research Groups to consider the establishment of regional groups/networks.
Secretariat
Council Meeting structure to be reformatted by the Secretariat, Chair and Vice-Chair.
Special Representative to develop a workplan for the new team approach to the role.

CONTACTS FOR COUNTRY INVOLVEMENT

Working Groups
<ul style="list-style-type: none">• Science to policy communication working group to be established: TBC• Research Stocktake: nina.grassnick@thunen.de
Flagship Projects
<ul style="list-style-type: none">• Agroecology and agroforestry: adapting systems and mitigating against climate change: mrosa.mosquera.losada@usc.es
Priority Actions
<ul style="list-style-type: none">• Mediterranean Agriculture Network: CIHEAM• Policy questions from Council to RGs: secretariat@globalresearchalliance.org• Request to countries/partners to send information on scholarships to support early career scientists to GRA Secretariat: secretariat@globalresearchalliance.org

SUMMARY OF DISCUSSIONS

STATEMENT FROM SPAIN

1. Esther Esteban Rodrigo, INIA-CSIC (Spain), welcomed attendees. She introduced the activities led by the National Research Institute for Research and Technology in Agriculture, Food and Forestry which covers a broad range of research ranging from agronomy to food technology.
2. Spain thanked the Group for the opportunity of becoming Chair of the GRA. This is a great opportunity for Spain whose involvement in the GRA has grown: Spain is co-Chairing the Croplands Research Group; leading the Flagship project on Feed Additives and will present a new Flagship on agroforestry to the Council during this meeting; and has been supporting the GRA capability-building programmes by hosting CLIFF-GRADS fellows.
3. During its presidency, Spain aims to reinforce the synergies between mitigation and adaptation with respect to climate change, as the country is facing a severe drought. Spain will continue to support the CLIFF-GRADS, will host a training course on data management in precision agriculture, and will host an advanced course on greenhouse gas assessment and mitigation in agriculture in collaboration with CIHEAM.
4. Spain wished to use its Chair role to disseminate, and build engagement in, the GRA activities through Europe, and will use its Presidency of the European Council to do so.

WELCOME FROM SPANISH AUTHORITIES

5. Javier Moreno, Vice President of International Relations CSIC Spain, welcomed the attendees. He mentioned the crucial role played by INIA, now part of CSIC, in developing research on agricultural GHG emissions and its work with the GRA. CSIC is engaged in favouring the mobility of researchers and promoting cooperation in bilateral and international programmes.
6. Ignacio Atance Mara, Deputy Director General for Agriculture Policy Planning (Ministry of Agriculture, Fisheries and Food, Spain) mentioned the crucial role played by science in guaranteeing food security and the sustainable development of the agriculture and food sectors. Ignacio also mentioned that Spanish agriculture requires profound transformation to ensure its long-term survival due to climate change. He highlighted the work of the GRA as crucial for the future development of agriculture, livestock and food security.

STATEMENT FROM CHILE

7. Outgoing Chair, Dr Maria Theresa Pino, National Officer for International Cooperation of INIA Chile, reviewed the achievements of Chile as Chair of the GRA since the last Council Meeting in 2022.
8. Chile represented the GRA in four international meetings and collaborated with the GMH on the proposal to develop options for methane mitigation in agriculture.
9. Chile has been involved in the establishment of a roadmap to improve the national capabilities in GHG inventories in agriculture and livestock in the Central American Agricultural Council, the Central American Integration System, SECAC and the technical Group on Climate Change and Comprehensive Risk Management (GTCCGIR)
10. Chile handed over the Chair to Spain (Dr Esther Esteban Rodrigo), highlighting how Chile is looking forward to continuing to collaborate with Spain.

REVIEW OF MINUTES AND AGENDA ADOPTION

11. The 2022 Council Meeting report was received and approved by all members.
12. The 2023 agenda was approved by the present Council members.
13. With 21 countries in attendance, there was no quorum at the meeting. The outcomes of the meeting will be sent out by email and actions will be confirmed after the meeting.

IDENTIFICATION OF THE NEW VICE-CHAIR

14. Unfortunately, the new Vice-Chair was not identified at the time of the meeting.
15. The Secretariat will continue to work with the identified country and is hoping to submit the new Vice-Chair endorsement as soon as possible.

GRA SPECIAL REPRESENTATIVE UPDATE

16. Phil Houlding, Director of International Policy, MPI, provided an update on the Special Representative.
17. Phil thanked Hayden Montgomery, for his achievements since 2016 in the role of GRA Special Representative. His efforts have brought significant recognition to the GRA, which has been reflected by the increased number of members and partners.
18. New Zealand is pleased to continue to host the Special Representative, to promote collaboration and the importance of the work done by the GRA and its members.
19. Dr Harry Clark was welcomed as the new Special Representative for the GRA. Dr Harry Clark was not able to attend in person, but he provided an update on his vision for the Special Representative role via his pre-recorded presentation (see later).

MEMBERS AND PARTNERS ANNOUNCEMENTS

United Kingdom

20. Luke Spadavecchia (DEFRA) provided the update.
21. The United Kingdom is developing new initiatives through the global centre for biodiversity and climate.
22. The United Kingdom will keep on supporting developing countries to tackle climate change. Three research calls will be published during 2023 and 2024 to address this topic. GRA members may inform the research agenda of these calls.

Ireland

23. Aiden Holohan (Department of Agriculture, Food and the Marine) provided the update.
24. Ireland has published a joint research call together with New Zealand which resulted in the funding of four research projects related to reducing methane emissions from ruminant livestock systems.
25. Another joint research call between Ireland and New Zealand will be launched at the AIM4C Summit 2023. There will be four research topics in the Call: Land management on organic agricultural soils, Refinement of agricultural GHG emissions inventories, Technologies for the mitigation of GHG from ruminant systems and Digitalisation and data to support climate-

related action. The deadline for the submission of proposals is 28 July 2023. For more information see [HERE](#).

26. Ireland is funding studentships to support the GRA Culturomics and Feed Additives Flagship projects.
27. Recently launched a nitrogen call with 1.3 M EUR where GHG emissions are the main theme.

New Zealand

28. Phil Houlding (MPI) provided the update.
29. New Zealand has invested over NZ\$300 M through the “Climate-emergency response fund”. The investment involves private partnerships and allows for international collaboration e.g. for capability building, support for developing countries and support of existing research activities of the GRA Research Groups.
30. New Zealand and Samoa are co-leading the newly established GRA Indigenous Research Network. The network will focus on indigenous and traditional knowledge. All GRA members are invited to join the first meeting of the network taking place on 31 May 2023. An invitation will be sent out by the GRA Secretariat.
31. New Zealand has provided funding to enable participation of GRA members in EJP-Soil and ERA-Net projects.
32. New Zealand is providing capability investment in Eastern and Southern Africa, Latin America and the Caribbean and Fiji and Samoa to improve GHG inventories.

Germany

33. Dorothea Schildt (BMEL) provided the update.
34. Under the German G7 presidency, Germany organized an Online Workshop focussing on “Carbon sequestration in agriculture – opportunities and challenges” with participation of GRA members. For more information see [HERE](#).
35. Germany has recently published a research call for research and development projects with focus on “Climate change in agriculture in Germany”. The scope of the funding is limited to research bodies and industries situated in Germany. However, applicants who are not eligible for funding are welcome to join research consortia on a self-funding basis or through in-kind contributions. The deadline for the submission of proposals is 15 June 2023.

China

36. Qin Xiaobo (CAAS) provided the update.
37. In July 2022, the Ministry of Agriculture and rural affairs implemented the 1st agricultural and rural plan to promote conservation agriculture and the reduction of GHG emissions from planting, animal production, fisheries and the use of machinery as well as promoting the use of renewable energy. This includes, amongst others, the reduction of methane emissions from paddy rice fields and the reduction of fertilizer use.

USA

38. James Dobrowolski (USDA-NIFA) provided the update.
39. All country members were welcomed to participate in the [AIM for Climate Summit](#), which will bring parties together to catalyse investment for research, innovations and accelerate transformative solutions.

CCAC - Climate and Clean Air Coalition

40. Catalina Etcheverry (Programme manager) provided the update.
41. 44 country partners overlap with GRA member countries.
42. CCAC is a core implementer of the Global Methane Pledge, supports global advocacy to reduce climate pollutants, supports country negotiation needs and provides short-term target expert assistance.
43. All GRA members are invited to join the CCAC agriculture climate hub. For more information see [HERE](#)
44. CCAC is collaborating with the GRA to implement the agriculture action plan. CCAC is asking GRA members to support its current work in Africa on mitigation assessments for the agriculture sector.

CIHEAM - International Centre for Advanced Mediterranean Agronomic Studies

45. Raúl Compes (Director) provided the update.
46. CIHEAM is organizing a training course “Greenhouse gas assessment and mitigation in agriculture: concepts, methods and simulation tools” from 16-20 October 2023 in Zaragoza (Spain).
47. CIHEAM is organizing a seminar on “Greenhouse Gases Mitigation In The Mediterranean Agricultural And Livestock Sectors” from 15-16 November 2023 in Zaragoza (Spain).

4per1000

48. Julia Klemme (Executive Secretariat) provided the update.
49. 4per1000 is an international multi stakeholder platform that aims to encourage a transition towards a regenerative, productive, highly resilient agriculture, based on appropriate land and soil management, which creates jobs and income and thus leads to sustainable development.
50. 4per1000 has recently launched task-forces on carbon markets and NDCs and invites all GRA members to join. See more information [HERE](#).
51. 4per1000 is holding its 1st Northern European regional meeting in Helsinki (Finland) from 6-8 June 2023. GRA members are invited to join the meeting. Find more information [HERE](#).

EDF - Environmental Defense Fund

52. John Tauzel (Senior Director) provided the update.
53. The EDF is an NGO that is putting people at the centre of climate change. In the case of methane emissions, EDF sees the farmers at the centre for solutions. EDF is supporting Danone as a scientific partner to reach its aim of reducing its footprint. EDF is also involved in a project that is using remote sensing to measure methane emissions. This project will be launched in December 2023.

AgMIP - Agricultural Model Intercomparison and Improvement Project

54. Erik Mencos Contreras (Columbia University) provided the update.
55. AgMIP is a global network of modellers focussing on climate, crops, livestock and economics that has existed for 12 years.
56. The aim of AgMIP is to compare and improve different models. The main activity is the development of protocols.

57. AgMIP is leading the GRA flagship project "[Evaluation of mitigation and adaptation co-benefits of agricultural GHG emission reduction strategies over time \(MAC-B\)](#)" and is currently carrying out a pilot project in Bangladesh.
58. The 9th AgMIP workshop will take place from 26-30 June 2023 in New York which will include a session on the GRA Flagship project. All GRA members are invited to join the workshop. See more information [HERE](#).

WFO - World Farmers Organization

59. Jones Macaulay (Liaison Officer for the Scientific Council) provided the update.
60. The WFO has 70 farmers organizations as members.
61. WFO is coordinating the initiative "[Climakers](#)" which offers the opportunity to farmers to share practices and tools for climate change mitigation and adaptation.
62. WFO is currently expanding its [Scientific Council](#) and therefore inviting GRA members to nominate scientists and academics. The candidates should have expertise in one of the following fields: Human needs and health, Agricultural and animal production systems, Economic, social and governance, Climate and Environment. For more information see [HERE](#).
63. WFO is currently setting up a farmers consultation framework to get quantitative and qualitative data from farmers. The aim is that WFO can support access to data from farmers for research bodies or ministries and vice versa.

REPORT FROM THE SECRETARIAT

64. Dr Harry Clark provided the update. His presentation can be found [HERE](#).
65. Dr Harry Clark, GRA Special Representative, opened by thanking Hayden Montgomery for his work as the former GRA Special Representative. Harry presented the strategy he would like to implement for the Special Representative role, which will be focused on a team approach to provide greater support to country members. He will develop a work plan for the team relying on the decisions made at the Council Meeting.
66. Key developments in the past year include:
 - a. New members: Kenya joined in May 2022, and Fiji joined in March 2023.
 - b. New partners: Regional Network of Agricultural Policy Research Institutes (ReNAPRI); Global Green Growth Institute (GGGI).
 - c. Proposed partner: Global Methane Hub (GMH). A proposal has been submitted to Council Members for endorsement.
 - d. Partners in discussion: University of the South Pacific; SPREP.
 - e. New addition to the enhanced GRA Secretariat: Dr Harry Clark (GRA Special Representative, New Zealand); Nicolas Costa (Uruguay); Bertha Kasonde (Ireland).
 - f. CLIFF-GRADS: The programme is an initiative of the GRA and the CGIAR Initiative on Low-Emissions Food Systems (Mitigate+). 176 awards have been granted since 2017, and Rounds 3 and 4 students are completing their stays following delays due to Covid. Round 5 awardees' research stays are also well underway and all training should be completed by April 2024. The sixth round of the programme is accepting applications from potential host organisations until 2 May 2023. The call for students will be opened in June 2023, and an announcement on the outcome of Round 6 will be made at COP28 in late 2023. Special thanks to the New Zealand

Government and Mitigate + for their financial support, and thank you to the University of Galway in Ireland for their administration of the programme.

- g. RUFORUM: The programme aims to build capability of graduate students and post-graduate scientists in Africa to conduct applied research on agricultural GHGs. For the first round, eight research grants were awarded, training 22 masters students. The second round closed on 10 April and will support 8 research grants including Master students, and 2 PhD grants. The PhD projects will be conducted in collaboration with ILRI's Mazingira Centre.
- h. Green Cattle Initiative: funding initiative between FFAR (USA) and 10 industry and government partners providing a pool of funding. GRA members are encouraged to bid into the fund, as it presents a great opportunity to support Flagship projects.
- i. Global Dairy Platform; Pathways to Dairy Net Zero: The GRA is a knowledge partner to P2DNZ which involves world major dairy companies. The Feed Additives Flagship is a key partner. The work done by GDP uses information from previous GRA projects (FAO/CCAC) providing case study data. The GDP aims to develop new typologies for dairy production systems globally and evaluate mitigation options applications for each of these.
- j. Protocol for including mitigation actions in agricultural LCA assessment (MiLCA): This project will produce a publicly available methodology for incorporating mitigation technologies into dairy LCA. The Feed additives Flagship will provide critical information to allow the methodology to be 'road tested' using feed additives as the first test case.
- k. Partnership with the Global Methane Hub: Focuses on methane emissions from all sectors, with an emphasis on agriculture. The GRA is collaborating with the GMH to become one of our partners. The GMH is already supporting the Rumengate Flagship, and is working on developing a fund for agriculture "the methane accelerator fund". The GRA will collaborate with the GMH to support the development of this fund.
- l. Aim for Climate: The GRA is a knowledge partner of this initiative, and we will be presenting at the AIM4C summit in May 2023. It will be a good opportunity to promote the projects in which we have been involved such as: Greener Cattle Initiative, Global Dairy Platform, FONTAGRO.
- m. COP27: The GRA Special Representative attended seven events highlighting the work done on capacity building such as CLIFF-GRADS; Pathways to Dairy Net Zero. During COP, the GRA identified areas of collaboration with the small island states in the Pacific and Caribbean on data gathering to support mitigation and adaptation efforts.
- n. COP28: The GRA Special Representative will attend COP28. Country members and partners are invited to share opportunities for this event.

RESEARCH GROUPS PRESENTATIONS

Integrative Research Group (IRG)

67. Rowena Nankivell (Australia) and Pamela Joosse (Canada) provided the IRG report.

68. The annual IRG meeting was held jointly with the Croplands Research Group (CRG) in Seville, Spain in January 2023. The topic of the meeting was "Towards Carbon Neutral Cropping

Systems” and had two key notes presentations on “Carbon sequestration in croplands in tropical and subtropical regions” and “Climate Neutral Farms”.

69. One of the outcomes of the meeting is the establishment of a proposal for a joint CRG and IRG paper on a neutral carbon farming system.
70. The IRG endorsed the Indigenous Research Network (IRN) joining its networks. The IRN is led by New Zealand and Samoa and aims at strengthening the participation of indigenous scientists and research relating to reducing agricultural greenhouse gases. The network is looking at expanding its members and the first IRN annual meeting will be held at the end of May 2023. The GRA Secretariat will send invitations to Council members for online participation.
71. The Soil Carbon Network (SC), in collaboration with LEAP FAO, released the first global map of soil carbon sequestration in grasslands. The SC is also working on a MRV project to estimate soil carbon stock change across Europe at country to field scale with remote sensing and soil data, funded by the EU. The SC is planning to launch the International Research Consortium on Soil Carbon by the end of 2023 along with a Soil Mission EU conference.
72. The Farm to Regional Scale Integration Network (FRS) hosted its annual meeting during the CRG and IRG meeting in Spain. The FRS has been hosting webinars regularly since the last Council meeting, and has submitted an organised proposal for this year's European Association of Agricultural Economists Conference with the title “Economics of GHG Mitigation Options at Farm-Level”. The network will host two CLIFF-GRADS students to support the EMiFA Flagship and will broaden the EMiFA Flagship to dual purpose cattle and inclusion of further countries.
73. The Circular Food Systems Network (CFS) funded six case studies and published one white paper. For 2023 - 2024, the CFS aims at funding and starting new in-depth research projects with a focus on indicators for circularity, developing webinars for knowledge dissemination, and identifying opportunities to initiate new research projects with the other networks.
74. The Inventories and Nationally Determined Contributions Network (INDC) hosted three webinars on: Policy relevance of National inventories for agriculture; National agriculture inventory data collection and management; and Commissioning and managing agriculture inventory research projects. The INDC held an agriculture inventory capability building workshop in New Zealand for Fiji and Samoa, resulting in Fiji joining the GRA. For 2023 - 2024, the network aims include developing approved methodologies for incorporating mitigation technologies into GHG inventories, and collaborating with the Animal Health Network to hold a series of workshops and webinars.

Croplands Research Group (CRG)

75. Maria Rosa Mosquera-Losada (Spain) provided the updates for the CRG report.
76. The annual CRG meeting was held jointly with the IRG in Spain. The group discussed how to get to a carbon neutral cropping system and the CRG developed a Flagship project on Agroforestry and Agroecology. The Flagship considers synergies between mitigation and adaptation. The group contributed to two Special issues, and 16 publications.
77. The Agroforestry Network developed several projects, networking events, papers and special issues throughout the year.
78. The Conservation Agriculture and Nutrient Management Network submitted a meta-analysis manuscript on the role of conservation agriculture in mitigating nitrous oxide emissions.

79. The Landscape Management of Agriculture Systems Network completed a new module to calculate off-farm GHG emissions and improved ammonia volatilization mechanisms were added to CNMM-DNDC model.
80. The Peatland Management Network has been working on improving nutrient management, biochar, and water table management.

Paddy Rice Research Group (PRRG)

81. Yasukazu Hosen (Japan) provided the updates for the PRRG report.
82. The PRRG presented the achievement of the past year. The MIRSA-3 project, funded by the Japanese Government, focuses on developing comprehensive rice cultivation technologies that reduce GHG emissions in Asia. The project is at the last stage of its implementation and has shown really good results.
83. Three projects are being developed by the PRRG:
 - a. MIRSA-4: the fourth phase of the MIRSA project will aim at reducing by 60% GHG emissions from paddy rice and will use livestock waste for biogas and fertiliser production.
 - b. GHG and Arsenic reduction: The project, funded by Japan and the US, will aim at reducing GHG emissions from AWD systems and reducing arsenic concentration in rice grain. The project will also study the microbial communities involved in the process.
 - c. Satellite monitoring of methane from rice: The project is funded by the GMH and FONTAGRO.
84. The Americas Sub-group held its annual meeting in July 2022 and following the meeting the group is now working on a Flagship project.
85. Main ambitions for 2023-2024:
 - a. Publications of results from MIRSA-3
 - b. Implementation of MIRSA-4
 - c. Development of a Flagship project on satellite monitoring in collaboration with FONTAGRO and GMH
 - d. The African PRRG is led by a new co-chair Omar Ndaw Faye and supported by Kofi Boateng (CLIFF-GRADS alumnus). The sub-group is planning to host its first meeting at the end of 2023.

Livestock Research Group (LRG)

86. Sinead Waters (Ireland) provided the updates for the LRG report.
87. This was the last Council Meeting for Sinead Waters, who is stepping down from her role as co-Chair after five years. Ireland is maintaining its role as co-Chair and the Group is pleased to welcome Tommy Boland as Sinead's replacement.
88. The 14th annual meeting was attended by 106 participants from 43 country members and 4 partner organisations. The discussions focused on methane metrics and data systems; and the challenges facing global organisations in responding to challenges of climate change. Some key findings from the discussions were the need to better understand how private industries can play a role in the GRA, the need to better support LMICS and remove language barriers. The Group also highlighted the crucial role played by the networks to advance and promote collaboration to find critical solutions.

89. The Animal Selection Genetics and Genomics Network hosted a workshop on methane proxies in 2022.
90. The Rumen Microbial Genomics Network (RMG) funded two collaborative projects, MASTER and HoloRuminant. The network built a Flagship project on culturomics, and received funding from the Global Methane Hub and Schmidt Futures. The RMG will hold a workshop on gut microbiology with INRAE and Rowett. The network is still looking for a deputy lead.
91. The Animal Health Network (AHN) is planning to hold a joint workshop with the INDC network on the challenges around data, types of models, policy integration of aspects related to animal health and climate change. The co-leads also met with representatives of ILRI and the Mazingira Centre (Kenya) to promote the network in East Africa and discuss ongoing work in the region. Selected AHN members reviewed the FAO report on “The role of animal health in national climate commitments”.
92. The Feed and Nutrition Network (FNN) held two online workshops for its Feed Additives Flagship to scope out technical guidelines for developing feed additives. The network published one paper on “Prediction of enteric methane emissions by sheep using an intercontinental database”, and refined an intercontinental database including 2,135 individual animal data from 13 countries.
93. The Manure Management Network (MNN) is now seeking a new chair. The network is working on a survey to gauge the future research priorities and exploring the possibilities of a GRA Flagship in the area of feed quality, manure management and GHG emissions.
94. The LRG ambitions include keeping on supporting the networks and getting new leaders for the RMG and MMN, building on the success of the Ireland - New Zealand Call, support from GMH to help align Flagships and networks. The Group will also focus on facilitating dialogue among scientists from different GRA countries to increase membership in Africa and South America.

Key messages from the Research Group Co-Chairs

95. The Research Groups support the creation of the Science - Policy Special Interest Group.
96. Support the establishment of regional groups, to take advantage of regional funders.
97. The RG co-Chairs highlight the crucial role of Flagship projects in the successful participation in research calls.
98. Research calls need to be open to low- and middle-income countries.
99. There are four new Flagship projects under development:
 - a. Low Carbon Agriculture - Hero Gollany
 - b. Soil Carbon Flagship (ORCASA) - J.F Soussana
 - c. Manure Management - April Leytem
 - d. Paddy Rice (remote sensing) - PRRG

Discussion

100. Members noted the importance to better define the meaning of the science to policy special interest groups and ensure it does not modify the Charter. They agreed the GRA needs to increase the dialogue between science and policy.
101. The creation of the science communication to policy working group requires more definition and should address how the GRA can better promote the messages emerging from the RG reports.

102. Including adaptation in projects is important for members. RG will better highlight the synergies between adaptation and mitigation in their projects.

FLAGSHIPS

103. [Nina Graßnick](#), GRA Secretariat, provided an update on Flagship criteria.
104. [Six Flagship projects](#) were adopted during the last Council meeting, and three of these projects provided brief, written updates prior to this year's meeting. The updates can also be viewed [HERE](#). One new Flagship project was proposed and endorsed this year.

Evaluation of Mitigation and Adaptation co-benefits (MAC-B) of agricultural GHG emissions reduction strategies over time, presented by Roberto Valvidia

105. Objective: generate new knowledge with high scientific impact contributing to the development of NDCs.
106. Results to date: conventional alternate-wetting and drying (AWD) and system of rice intensification (SRI) and AWD are likely to be more resilient to climate change compared to continuous flood systems.
107. Opportunities for GRA Country Members: PRRG, CRG and LRG will be able to engage and use their data and tools to develop MAC-B protocols. The project is looking for funding from GRA members interested in assessments in their regions.

Feed Additives, presented by David Yanez-Ruiz

108. Objectives: Facilitate the development and use of feed additives to reduce enteric methane emissions, and improve academic and industry capability to develop feed additives and contribute to efficacy assessment.
109. Results to date: the group held several workshops to discuss how the technical guidelines should be developed, to develop the working groups and identify their leaders. Each working group will develop guidelines on a specific topic, to address all the elements needing to be considered when developing feed additives.
110. Opportunities for GRA Members: if any members are interested in this Flagship, and would like to contribute to it, please contact [David](#).

Satellite monitoring to improve livestock management, presented by Hayden Montgomery

111. Objective: to use airborne remote sensing to identify and classify type of grassland systems, specifically to estimate the quantity and quality of parameters such as crude protein content, nitrogen content and energy content.
112. Results to date: Work is underway and is taking place in Uruguay, Argentina, Colombia and Costa Rica. This work is being done in collaboration with FONTAGRO.
113. There will be a collaboration with the European Space Agency through the [RAMONA project](#). This project aims at developing an innovative monitoring system for rangeland ecosystems in Africa.
114. Ongoing discussion with the World Resources Institute to collaborate on their [Global Pasture Watch project](#), to map and monitor global grasslands and livestock.

New Flagship: Agroecology and Agroforestry: adapting systems and mitigating against climate change, presented by Maria Rosa Mosquera-Losada

115. Objective: develop a portfolio of agroforestry and agroecology best practices including agrosystem, supply chain and policy scale, and their respective value chains, which is clearly linked to their capacity to increase carbon sequestration and/or reduce GHG emissions.
116. Participation: The CRG and its networks will contribute to the project. The Flagship also links with the new FAO strategy and the Global Alliance for Climate-Smart Agriculture Enabling Environment Action Group (EEAG).
117. Funding: The Flagship will be funded through the collaboration of all the institutions supporting the project.
118. Council Champions: Spain, Brazil, Argentina, UK, USA, Chile, Colombia, Canada

CAPABILITY

119. [Joanne Monjol](#), GRA Secretariat, presented an update on the GRA's capability programmes.
120. The GRA offers two scholarships programmes:
 - a. [RUFORUM](#): This programme aims at building the capability of graduate and postgraduate scientists in Africa to conduct applied research on agricultural GHGs. The programme supported eight projects in the first round, involving 22 master's students. For the second round, the programme will support eight projects for Master students and two PhD projects.
 - b. [CLIFF-GRADS](#): The programme is a joint initiative of the GRA and the CGIAR Research Initiative on Low Emission Food systems (Mitigate+). The research projects focus on measurement, modelling and mitigation of GHG emissions, or measurement, modelling and enhancement of carbon storage in agricultural systems. The sixth round of the programme is open for host expression of interest until 2 May 2023 (2 pm NZST), and the call for students will be open in June 2023.
121. Joanne presented some questions for the Members:
 - a. What strategies can be employed to ensure that all member countries have equal access to opportunities?
 - b. What do you consider to be the most pressing priorities for your respective countries?
 - c. How can we align our capability-building efforts with the specific priorities and needs of each member country?
 - d. To what extent do you believe that Flagship projects can be utilized to strengthen and enhance member countries' capability? (Inclusion of PhD and Postdocs in the projects?)
 - e. What capability-building activities could the members share with council?

Florencia Garcia, Round 1 alumna, talked about her experience as a fellow (view [HERE](#))

122. Florencia went to Argentina to work on the effect of inhibiting rumen methanogenesis on microbial biomass production and composition.

123. Thanks to the programme Florencia developed new skills, such as project management, and research skills. She also benefited from the wide CLIFF-GRADS network and used her research stay and CLIFF-GRADS events to expand her network.
124. Building a strong network allowed her to get more opportunities. Florencia is now working as Postdoc on the GRA Flagship on Feed additives.

David Yanez-Ruiz presented his experience as CLIFF-GRADS host.

125. David has hosted two CLIFF-GRADS fellows to date.
126. The exchanges allowed him to build strong relationships with the research centres the students were from.
127. The programme allowed the students to be trained on new technics and they were able to use materials they usually do not have access to. The students also brought samples from their country, which allowed them to enrich their PhD.
128. One of the fellows has been working on the Feed Additives Flagship with Florencia Garcia (CLIFF-GRADS alumna).

PRESENTATIONS

REMEDIA NETWORK, presented by Alberto Sanz-Cobena

129. The presentation slides can be found [HERE](#).
130. Remedia is a Spanish scientific network on climate change mitigation in the agroforestry sector. It gathers together scientists and interested parties wanting to reduce GHG from the agricultural sector. Like the GRA, the Remedia network is composed of multiple groups: livestock, croplands, agroforestry, interdisciplinary, socio-economic etc.
131. The main challenges encountered in Spain are the diversity in production systems and in climate, with contrasting climatic conditions with more rain in the north. More than 20% of agricultural production is under irrigation.
132. Other challenges include the understanding of carbon sequestration potential of the diverse production systems (agricultural soils, grazing systems, Dehesas, Agroforestry), the improvement of GHG inventories and diverse research priorities.
133. Red Remedia tries to address these challenges through its activities, e.g. by developing [emission factors for N₂O emissions from cropping systems in Mediterranean climate](#) which have been included in the 2019 Refinement to the 2006 IPCC Guidelines for National GHG inventories.
134. Red Remedia offers training and capacity building, e.g. IAMZ-CIHEAM advanced courses in cooperation with GRA and organizes annual meetings to present latest research results. The next Remedia Workshop is taking place from 11-12 May 2023 in Bilbao.
135. The next steps of the network include the opening of the network to interested researchers from Latin America and Portugal and the development of an online platform that will facilitate networking between researchers.
136. More information can be found [HERE](#)

Discussion

137. The Group asked about Red Remedia's dissemination strategy. Alberto explained that they are mainly using social networks (e.g. Twitter) and are collaborating with a newspaper which is publishing articles on Red Remedia activities.

138. There was interest in Red Remedía's experience of science-policy interlinkages. Alberto explained that this is mainly through key policy people who are interested in the work of Red Remedía and therefore approach the network.
139. It was noted that Spain is still applying Tier 1 methodology for nitrous oxide emissions from cropping systems, although Red Remedía has developed a Tier 2 methodology. How does Red Remedía see its role in the national systems in that regard? Alberto answered that Red Remedía has only limited capacities to get involved in this kind of activities. To move from Tier 1 to Tier 2 in Spain it would need more coordinated work at national level and funding.

A SOIL DEAL FOR EUROPE, presented by Paloma Melgarejo

140. The presentation slides can be found [HERE](#).
141. The goal of the EU Mission "A Soil Deal for Europe" is to establish 100 living labs and lighthouses to lead the transition towards healthy soil by 2030.
142. The Soil Mission is one of five missions in the EU's Horizon Europe framework program for research and innovation.
143. It is estimated that 60-70% of soils in Europe are unhealthy due to current management practices, pollution, urbanisation and the effects of climate change.
144. The Mission will be implemented through four building blocks: 1. Research & Innovation programme, 2. Living labs and lighthouses, 3. Soil monitoring and 4. Soil literacy, communication, citizen engagement.
145. The network of 100 Living labs and lighthouses will be built up gradually during 3 phases: Phase 1 (2021-2024): Induction and pilot, Phase 2 (2025-2026): gradual expansion, Phase 3 (2027 -): Scaling-up and mainstreaming.
146. The call for proposals under the work programme 2023 of Mission Soil is currently open with topics on e.g. living labs and spatial planning. Deadline for applications is 20th September 2023. For more information see [HERE](#).
147. Paloma Melgarejo is a member of the Soil Mission Board for 2022-2025 and has been involved in developing the Mission Soil Manifesto. The Mission Soil Manifesto aims to bring regional and local policy-makers, stakeholders and citizens together into a vibrant community that cares for soil health. Signatories of the document recognise the need for action for soil health and will be able to engage in activities for improving soil health. The Mission Soil Manifesto can be signed [HERE](#).
148. Among upcoming activities of the Mission Soil, Paloma Melgarejo highlighted:
- a. 31 May – 1 June: EU Agricultural Research and Innovation Conference
 - b. June: 1st edition of quarterly newsletter; Mission website operational
 - c. 21-23 November 2023: "European Mission Soil Week" which will be organised by Spain/INIA CSIC

Discussion

149. Canada invited all GRA members to join the 1st "[International Forum on Agroecosystem Living Labs](#)" which takes place from 4-6 October 2023 in Montreal (Canada) as a hybrid event. Canada pointed out that upscaling and measuring success of living labs is a challenge. How does the EU deal with it? Paloma answered that indicators for success are being defined and it will be a "learning-by-doing" process along the 3 phases of building up the living labs.

150. The European Commission added that, when it comes to measuring success of living labs, Mission Soil is eager to learn from pioneers (e.g. Canada and France). The Soil Mission Board is also supporting this process and in so doing is helped by the diverse academic backgrounds of its members, including soil science and related disciplines but also economics and humanities.
151. The group was interested in how the effects of climate change and other drivers of soil degradation or soil health will be communicated to the people and farmers. Brazil noted a willingness to share experiences and collaborate on this topic.

THE MAIZ AND THE CLIMATE CHANGE CHALLENGE IN THE MEDITERRANEAN BASIN, presented by Raul Compes

152. The International Centre for Mediterranean Agricultural Studies (CIHEAM) is an intergovernmental organization including 13 member countries. CIHEAM aims to promote the development of a sustainable agri-food system, through activities related to capacity building and transfer of knowledge. The presentation can be found [HERE](#).
153. CIHEAM workstream includes:
 - a. Education and capacity building: Masters programme; technical training; seminars and workshops.
 - b. Research and Innovation projects: 3 Horizon 2023 projects; 2 Prima and 5 Horizon Europe projects.
 - c. Networks and open knowledge platforms: Sheep and Goat Nutrition Subnetwork (FAO CIHEAM Network)' Pastures and Forage Subnetwork; Nut Network; Greenhouse gas emissions in Mediterranean agriculture (in development).
 - d. Technical assistance and development projects
 - e. Policy dialogue: corporate working groups
154. CIHEAM will hold a seminar on "GHG Mitigation in the Mediterranean Agricultural and Livestock Sectors" in Zaragoza, Spain, from 15 to 16 November 2023.
155. CIHEAM is looking for opportunities to collaborate with the GRA to promote a new mitigation paradigm among Mediterranean countries and promote joint projects and activities.
156. The success of the CIHEAM Network is due to their flexibility and ability to adapt to the countries' needs and priorities.

GRA SURVEY RESULTS

157. Nina Grassnick, GRA Secretariat, presented the results from the survey.
158. The survey was developed to meet the Research Stocktake outcome of the 2022 meeting, and it was led by an external provider.
159. The Research Stocktake working group aims to compile GRA activities from the last 10 years. It will compile a document showcasing and highlighting the key achievements of the GRA. The Secretariat used the 6 months reports, annual reports and council reports from 2010 - 2021. The finalized report will be available to members before COP28.
160. 25 countries responded to the survey, leading to the following highlighted findings:

- a. Members valued the GRA's support for collaboration, growing connections and networks.
- b. The core focus areas of supporting research and capability building are both regarded as effective and successful.
- c. Members indicated that participation and engagement could be challenging.
- d. The GRA could be more relevant when considering the anticipated global challenges.
- e. Resourcing is a limiting factor, but there is a strong desire for more engagement through additional/alternative mechanisms.
- f. Coordinating and accessing funding remains a challenge to effective participation of many members.
- g. Mixed feeling about the creation of a partners' forum.
- h. Reinforce its focus on adaptation as well as mitigation.

GRA SURVEY RECOMMENDATIONS

161. Deborah Knox, GRA Secretariat, led the discussions on the GRA survey recommendations.

Creation of Special Interest Group and/or Regional groups by Members.

162. The survey results showed that respondents were interested in establishing two Special Interest Groups (SIG), one on Science to Policy and the other one on Practice Change.

Discussion

163. Country Members and Partners agreed that it is crucial for the GRA to better communicate its findings to policy makers. All agreed that the GRA will not provide policy recommendations, but rather enhance the communications of information to stakeholders. There is a need to better translate the results from research, including GRA Flagship projects, to policy makers. The group agreed that the focus should be on science recommendations to policy, instead of policy recommendations.

164. The group also noted that there is a there is a need for technology transfer, and adoption of new technology. The focus should also be on how we can get the tools to the farmers.

165. Members and Partners agreed on setting up a science communication to policy working group to define what it means for Members and how to improve dissemination of information.

166. The creation of Regional Representative Groups was not supported by Members present, as they fear it will stretch the available resources.

167. This recommendation will need to be discussed again at future Council meetings, as not all regions are well represented at this meeting.

→ **Outcome:** Creation of a working group on science to policy communication. The WG will report to Council before the 2024 Council Meeting.

- Country Members part of the Science to Policy Working Group: US, Australia, Canada, UK, New Zealand, Germany, Brazil, Denmark, Switzerland.
- Partners part of the Science to Policy Working Group: EDF, GMH.

→ **Outcome:** Return to the discussion of Regional Representative Group at the 2024 Council meeting. N.B: This group is policy discussion and does not prevent RGs from creating sub-groups.

Reformat Council Meeting

168. The survey showed there is a desire to modify the configuration of the Council meeting, so the operational matters are received and approved in advance of the meeting, utilising digital technology to facilitate this; and keep substantive items to be discussed during the Council. If this decision is endorsed by the Council, the Secretariat will support the Chair into the transition.

Discussion

169. Members agreed there is a need to reformat the Council meeting, having the discussions before or after the meeting, and to be more flexible with decision making regarding the size of the membership.

170. Members noted the importance of having hybrid meetings as it will be difficult to get a quorum with 67 members. This will guarantee a better representation during the discussions.

→ **Outcome:** The Secretariat will submit the recommendation on reformatting the Council meeting to the Members for endorsement.

Use of Flagships to achieve greater coordination of funding and activities

Discussion

Use Flagships as the key mechanism to help coordinate and pool funding between Members

171. Funding raised within Flagships to be available for all researchers.

172. There is an interest in having mechanisms that ensure all countries are supported to promote broader participation.

173. The Secretariat highlighted that the GRA will not administer funds, but is looking to improve accessibility of funding through the Flagships.

Use Flagship as a key tool to coordinate other activities, particularly capability building

174. Members noted that capability building should not be an additional mandatory criterion for the endorsement of Flagships.

175. The Secretariat indicated that the idea is to better highlight how the Flagships are building capability, but it will not be a requirement.

→ **Outcome:** The Flagship proposal template will be modified to include and highlight capability building activities within the Flagship. This proposition will be submitted to Members for endorsement.

Progress engagement with GRA Partners via Flagships, SIG and RGS

176. The GRA is looking at how to better engage with its Partners, including through Flagships. This will be considered through existing mechanisms as the proposal for Special Interest Groups and Regional Representative Groups was not supported.

REVIEW OF THE 2022 OPERATIONAL PLAN

177. Deborah Knox, GRA Secretariat, provided an update of the progress made regarding the agreed priority actions at the last Council Meeting.

FURTHER RESEARCH COLLABORATION

178. Provide Coordination support through the GRA Secretariat for the development of Flagship Projects → Achieved: webinars series on Flagships and supported research Group leads in preparing their Flagship proposal.
179. Identification of co-benefits from reducing emissions, to prioritise agricultural practices that also contribute to adaptation and other areas → Work to be continued. It is proposed that Research Groups written reports will highlight co-benefits, same for the Flagship projects.
180. Establish working groups to explore the role of innovation → The lead of this working group indicated that the group did not do more work on this matter, as there is already a lot going on and it was not deemed pertinent for the GRA to pursue.
181. Build a network supporting indigenous scientists/capability across the GRA → Achieved. The Indigenous Research Network has been endorsed by the IRG and is led by New Zealand and Samoa. The first annual meeting will be held at the end of May 2023. The network is looking to extend its membership.
182. Launch a network on GHG in Mediterranean Climate Agriculture → Work to be completed. Spain will cooperate with CIHEAM to develop the MCA Network.

FOSTER OUTREACH, KNOWLEDGE SHARING AND INFORMATION EXCHANGE

183. Online webinars and training materials made available on the GRA website → Ongoing activity. Numerous webinars and training are on the website. Members and Partners are encouraged to continue sharing opportunities.
184. Build capability among early career scientists by supporting GRA scholarships and awards → Ongoing. Round 6 of the CLIFF-GRADS opens for students in June. Member countries are encouraged to share this opportunity. Webinars were held throughout the year for the current awardees and past alumni.
185. Supporting existing GRA Scholarships and awards, e.g CLIFF-GRADS, RUFORUM, IPCC scholarship programme alumni. Identifying other existing relevant awards and scholarships offered by members → Ongoing. Progress was made with CLIFF-GRADS and RUFORUM opening new rounds in 2023. Request to Member countries and Partners to send information on scholarships to support early career scientists to the Secretariat.
186. Undertake a research capability stocktake to track progress (including case study) → Underway. The stocktake is well underway and the final report should be available to Member countries by the end of 2023.
187. Provide coordination support through the GRA Secretariat for RG webinars to present research results; develop GRA webinars “corporate design” and webinar calendar. → Ongoing.
188. Encourage Council Members to identify policy questions for Research Groups and Partners to respond to at 2023 Council Meeting → No questions received.
189. Develop and present RG activities summaries for presenting at an event → Underway. The Research Stocktake has identified key activities for each Research Group.

BUILD EFFECTIVE PARTNERSHIPS

190. Provide Partners page on the GRA website for relevant information to be included → Ongoing. More effort is required to work with Partners in identifying joint collaboration opportunities and to make this information available.

191. Establish a Partners forum to discuss opportunities for collaboration → Ongoing. GRA Survey Recommendations identified the development of Special Interest Groups, Partners to be included in these groups.
192. Establish partnership with the GMH → Achieved. GMH endorsed it at the 2023 Council Meeting.

CLOSING REMARKS

193. Esther Esteban Rodrigo gave a closing statement and highlighted the importance of reducing the impact of the agrifood system on the environment, and to develop more science-based guidelines to support countries in reaching their emission reduction targets and design impactful agricultural and environmental policies.
194. Esther closed the meeting by expressing her gratitude to Hayden Montgomery, the Secretariat, the new Special Representative and her co-workers at INIA.

APPENDIX 1: PARTICIPANTS LIST

Members	
Argentina	Melipal Esteban, Argentine Embassy in Spain
Australia	Erin Tomkison, Australian Mission to European Union
Brazil	Gustavo Mozzer, Brazilian Agricultural Research Corporation (EMBRAPA)
Canada	Pascal Michel, Agriculture and Agri-Food Canada Bob Turnock, Agriculture and Agri-Food Canada
Chile	Maria-Teresa Pino, INIA Chile Ignacio Beltran, INIA Chile
China	Xiobo Qin, Institute of environment and sustainable development in agriculture, Chinese academy of agricultural science
Colombia	Rodrigo Martinez, AGROSAVIA
Denmark	Bjarne Thomsen, Danish Ministry of Food, Agriculture and Fisheries
Democratic Republic of Congo	Alphonse Mulami Knongolo, Ministere des Finances Joseph Moto Kosarade, Ministere des Finance Biuma Dorcas, Ministere des Finance
Fiji	Kumar Vinesh, Ministry of Agriculture
Germany	Dorothea Schidt, German Ministry of Food and Agriculture
Ireland	Aidan Holohan, Department of Agriculture, Food and the Marine
Japan	Saturo Muranaka, Research Council Secretariat, Ministry of Agriculture, Forestry and Fisheries
Lithuania	Simona Bieliauskaite, Ministry of Agriculture Vilma Kraujalytė, Ministry of Agriculture
Netherlands	Charlotte Verburg, Ministry of Agriculture, Nature and Food Quality Sascha Bollerman, Ministry of Agriculture, Nature and Food Quality
New Zealand	Phil Houlding, Ministry for Primary Industries
Spain	Esther Esteban Rodrigo, INIA-CSIC Marisa Tello Mariscal, INIA-CSIC Guy Vancanneyt, INIA-CSIC
Switzerland	Laura Sommer, Federal Office for Agriculture
United Kingdom	Luke Spadavecchia, DEFRA
United States	James Philip Dobrowolski, U.S Department of Agriculture, National Institute of Food and Agriculture
Uruguay	Gonzalo Mauricio Becona Lopez, INIA-Uruguay
Partners	
4per1000	Julia Klemme
AgMIP	Roberto Valdivia Erik Mencos Contreras
CABI	Ansari Hosein
CCAC	Catalina Etcheverry
CIHEAM	Raul Compes Antonio Lopez-Francos
EDF	John Tazel
European Commission	Matthias Leonhard Maier
FACCE-JPI	Heather McKhann
Global Methane Hub	Hayden Montgomery
World Farmers' Organisation	Macaulay Jones

Research Group Co-Chairs
Hero Gollany, Croplands Research Group – USA Maria Rosa Mosquera-Losada, Croplands Research Group - Spain Jon Tanner, Livestock Research Group – New Zealand Richard Dewhurst, Livestock Research Group - UK Sinead Waters, Livestock Research Group - Ireland Yasukazu Hosen, Paddy Rice Research Group - Japan
GRA Secretariat
Deborah Knox, New Zealand Joanne Monjol, New Zealand Nina Grassnick, Germany