GLOBAL RESEARCH ALLIANCE
ON AGRICULTURAL GREENHOUSE GASES

Livestock Research Group Meeting

Casa400, Amsterdam, The Netherlands

4 - 5 November 2011

Meeting Report

OVERVIEW

1 The third meeting of the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases ("the Alliance") was held in Amsterdam, the Netherlands from 4 – 5 November, 2011 immediately following the 6th International Symposium on Non- CO2 Greenhouse Gases (NCGG6) Conference from 2 – 4 November, 2011 (www.ncgg.info). The meeting was co-chaired by New Zealand (Dr Harry Clark, New Zealand Agricultural Greenhouse Gas Research Centre) and the Netherlands (Dr Martin Scholten, Wageningen UR) as the country co-chairs of the Livestock Research Group.

2 This report is a summary of key discussions, action points and outcomes from the meeting. Presentations are provided separately as PDFs.

PARTICIPANTS

3 The meeting was attended by 47 Alliance representatives (from 24 member countries) and other invited guests:

- **Alliance Members attending:** Argentina, Brazil, Canada, Chile, China, Colombia, Denmark, France, Germany, Indonesia, Italy, Ireland, Japan, Korea, Malaysia, Mexico, The Netherlands, New Zealand, Spain, Switzerland, UK, USA, Uruguay, Vietnam

- **Alliance Members unable to attend:** Australia, Costa Rica**,** Finland, Ghana, Norway, Peru, Philippines, Sweden

- **Observer countries unable to attend:** Pakistan, Russia, South Africa, Thailand

- **Invited Guests able to attend:** Animal Taskforce, European Commission, UN Food and Agriculture Organisation (FAO), International Meat Secretariat (IMS), Sustainable Agriculture Initiative platform (SAI), World Bank, European FACCE JPI

- **Invited Guests unable to attend:** International Livestock Research Institute (ILRI), Climate Change, Agriculture and Food Security program (CCAFS), Tropical Agricultural Research and Higher Education Centre (CATIE).

MEETING OUTCOMES

4 The Livestock Research Group (LRG) agreed that its further activities can be seen in three broad 'categories': (a) actions the LRG can **do** directly, e.g. research projects; (b) actions the LRG can **facilitate**, e.g. setting up networks, organising training workshops; and (c) actions the LRG can **influence**, e.g. attracting resourcing and influencing research directions of other organisations. It considered its future work in the light of those categories and where it could add most value in each of them.

5 The meeting achieved the following outcomes:

- Presentations on the Alliance and the LRG provided to around 228 science delegates attending the NCGG-6 Symposium.

- Review of activities since the last LRG meeting, 1-2 March 2011 (France); an impressive production of best practice methodologies and technical manuals, established networks and synthesis reports were produced, showing the LRG as a source of trusted information .

- Identification of additional areas of focus for the LRG, with lead countries to coordinate, for example:

    - Establishment of a network and database on feed and nutrition in relation to GHG emissions

    - Dedicated activities on manure management research such as extension of Emission Factor Data Base and establishing a network on manure management by smallholders

    - Animal health and how this may influence livestock GHG emissions intensity

- Updates on relevant research activities underway in participating countries of the LRG. Several delegates noted that the global and domestic level of effort on research into agricultural GHG emissions seems to have been increasing steadily since the Alliance was formed (including an increase in regional and international collaboration), with a particular boost to activities since the Alliance Charter was signed by Ministers in June 2011.

- Agreement to organise technical workshops for capacity building and increasing expertise to help build research capabilities in countries. The first workshop will be a South East Asian regional event in the first half of 2012.

- Outreach to relevant international and regional institutions working in or supporting livestock emissions research, and agreement to continue active engagement with these organisations and others as the LRG work plan unfolds. This may include joint research calls involving funding from a number of countries.

- Agreement that a full stocktake would not be carried out on an annual basis and that the LEARN network be used for putting researchers in touch with each other. The current stocktake data and experiences in compiling and analysing the data could be published in an aggregate form in an appropriate journal. No country-specific data would be made available in this publication.

- Identification of key areas for the LRG to engage with other Alliance Research and Cross-cutting Groups in order to achieve multiple objectives.

    - Continued development and facilitation of new collaborations that are mutually beneficial and can be sustained

    - Better coordination of existing resources and funding mechanisms and linking with other initiatives working in the same area to avoid duplication, e.g. JPI-FACCE, AnimalChange, FONTAGRO

    - Influencing research directions and funding decisions of other organisations, attracting and offering value propositions for more resources and better utilising existing resources

6 The co-chairs will present an update on LRG progress to the Alliance Council at its next meeting (Canada, mid-2012). The next meeting of the Group will take place in the second half of 2012, venue still to be determined.

SUMMARY OF DISCUSSIONS

PRE-MEETING: THURSDAY 3 AND FRIDAY 4 NOVEMBER – NCGG6 plenary and parallel scientific sessions

7 The LRG meeting was preceded by an NCGG-6 plenary and parallel scientific sessions dedicated to the Alliance. These were open to all participants of the NCGG-6 conference and took place the afternoon of Thursday 3 and the morning of Friday 4 November. The sessions were **not** part of the official LRG meeting. The sessions show cased objectives and activities of the Alliance and in particular the LRG to the NCGG-6 audience, including specific activities underway in LRG member countries and global research networks recently set up in support of LRG objectives. It was an important opportunity for the LRG to interact with the wider scientific community on non-CO2 greenhouse gases. Presentations/papers to the NCGG-6 will be made available on the Alliance website.

FRIDAY 4 NOVEMBER – LRG MEETING

OPENING REMARKS

8 The co-chairs welcomed attendees and opened the LRG meeting.

9 The co-chairs reminded delegates that a key criterion for activities by the LRG was to achieve outcomes that would not have happened without the collaborative nature of the Alliance. They proposed a framework to consider future activities by the group under three broad 'action categories' : (a) actions the group can do, e.g. undertake the stocktake and indentify priorities; (b) actions the group can facilitate, e.g. establishing networks and other tools to assist the group do its work; and (c) actions the group can influence, e.g. countries' and organisations' prioritisation and coordination of funding or research opportunities and directions. The rumen microbial taxonomic framework project and research activities linked to it were examples of activities that would not have happened without the Alliance. The LRG needs more of these as strong evidence of the value and contribution of the group and of the Alliance more broadly. It was noted that in order to be

successful, action has to be undertaken in all these three categories. The group agreed that this suggested framework would be useful to inform its discussions.

UPDATE FROM THE SECRETARIAT

10 The Secretariat updated participants on Alliance developments since the LRG last met in March 2011 (refer separate PDF presentation). This covered new members, tabling and signing of the Alliance Charter at the Ministerial Summit on 24 June 2011 in Rome, developments in the other Research Groups, and updates on the development of the Communications Policy and on the process for inviting 'Partners' to join the Alliance at Council level.

Communications Policy

11 On the Communications Policy, it was noted that drafting was still underway. There had been a discussion at the Council meeting on 25 June, followed by a period of electronic consultation. A large number of Council members expressed their support of the draft Communications Policy, but there are still some divergent views. Key issues to resolve include the extent to which the Council is involved in approving all Alliance communications, including those of the Research and Cross-cutting Groups. This will be addressed at the next Council meeting, in Canada in mid-2012. Another draft will be circulated before then.

12 It was noted that the absence of a Communications Policy was not preventing the Research and Cross-Cutting Groups from sharing information about their work and other activities publicly, or countries presenting and discussing their own activities in support of the Alliance. However, it was clarified that where an Alliance country wished to present *on behalf of the Alliance*, then Council guidance/approval would be required and this would be covered by the Communications Policy. Where presentations were *about the Alliance* (e.g. Research Groups reporting on their activities) this was up to each Group to decide and did not need Council input at this stage.

Partners

13 The Secretariat also provided an update on the process for inviting Partners to the Alliance. The Charter provides for Partners at a Council level, for the Alliance as a whole.

14 At its meeting in Rome in June, the Council agreed an initial list of potential Partner organisations. This included the FAO, the World Bank, regional development banks, international research institutions (e.g. CGIAR, CATIE, etc). Other organisations can be invited later as the Council approves them. The Secretariat has drafted an invitation letter, which has been approved by the Council and will soon be sent to the identified organisations. Once the terms of the letter have been agreed to by the organisations, they will be granted partnership status and a discussion between the Council and Partners would be initiated.

15 It was noted that the Charter also enables Research Groups to establish scientific collaborations and other relevant links with outside organisations that are relevant to the Group's work (as the LRG has done by inviting a number of organisations to attend this meeting).

UPDATING THE WORKPLAN

16 The LRG workplan had been circulated prior to the meeting. There was a short discussion to identify any omissions or corrections to the document as presented. Key updates and additions included:

Actions on Information and Technology Transfer (IT)

- IT1: It was noted that the first stage of the development of SF6 best practice guidelines is complete and a workshop report is available on the LRG page of the Alliance website. The second stage of the project has been advertised but the completion date may be slightly delayed. If anyone is interested in being involved in this project, they should contact the Secretariat.

- IT2: The first stage of the development of best practice guidelines on using chambers for N_2O measurements is complete, with an outline and chapter structure agreed and international authors identified. The second stage of the project has been advertised and the completion date is anticipated to be mid-late 2012.

- IT3: For the technical manual on alternative designs for low cost CH_4 respiration chambers, a draft is nearing completion.

- IT4: The proposed co-authored guide on measuring soil carbon in agricultural soils was not identified as a priority for action by the Croplands Group so has not progressed. The LRG considered that this remains a gap that may still need to be addressed. Potentially, it could be raised as a measurement activity for the Inventory and Measurements Cross-cutting Group.

Actions on Networks and Databases (ND)

- ND – general: Any Alliance country is welcome to join any of the networks being established. In time, contact information on that particular network will be available on the public Alliance website. In the meantime, if countries are interested in participating in a particular network they should contact the Secretariat for the contact points for networks and databases.

- ND3: The United Kingdom should be recorded as a participating member of the animal genetics and genomics network.

Actions on Research Collaboration (RC)

- RC1: The UK has recently agreed to purchase a C-Lock system and in time will be able to contribute trial data.

- RC2: Future joint funding and research activities are being explored between the EU Joint Programming Initiative on Food Security, Agriculture and Climate Change (EU JPI FACCE) and other Alliance member countries. This initiative is across 20 European countries and is a strategic platform for research and aligns with existing research programmes in these 20 countries.

- RC4: Additional funding for the AnimalCHANGE network has been received and therefore the programme will be asking for more partners. If countries are interested in joining and are not directly contacted by AnimalCHANGE in due course, they should contact the Secretariat.

Actions on Policy Support (PS)

- PS – general: The NCGG-6 conference papers were seen as making an important contribution to policy support

- PS1: Resourcing of people to establish a literature database on livestock GHG emissions and mitigation options in support of the IPCC 5th Assessment report has been difficult to obtain so is behind schedule at the moment. It was noted that Professor Charles Rice from Kansas State University has developed a literature database for the Croplands Group and this could possibly be expanded to include livestock.

COUNTRY ACTIVITIES: ROUNDTABLE DISCUSSION

17 There was a roundtable session where countries were asked to report back on relevant activities underway in their country in relation to the LRG. During this agenda item, the Dutch Ministry of Economic Affairs, Agriculture & Innovation also made a short statement welcoming meeting attendees to the Netherlands.

18 During the country reports, it was observed that there are many projects underway that have good international collaboration. Also, there are increasing avenues of funding that countries are able to access. Many countries also noted that while domestic work on agricultural GHG emissions had previously been slow, this had changed notably over the past year. Countries are now seeing new funding and incentives for research in areas related to the Alliance, and in some instances better coordination between agencies within countries. However, the roundtable identified the ongoing need for better technology transfer to farmers, and to ensure sustained funding for research and to increase research capacity.

19 The issue of animal health (including pests and diseases) and how this may influence GHGs was suggested as a possible area of interest for the LRG. The UK (DFID) noted that it was developing a project on the transmission of disease between livestock and people and that there is potential for this to be expanded to look at how animal disease affects GHG emissions if there was enough interest and support. This was further discussed on the second day (see para 24).

20 In closing the session, the co-chairs noted the very positive message that there was a great deal more domestic/collaborative activity reported in this meeting than there had been in previous LRG meetings, which indicated that the research effort is increasing. The co-chairs made several further observations:

- Given the diversity between country efforts at the national level, a lot of thought is required on how to cross research boundaries. This is not easy to do but the Alliance is aware of that challenge and so is trying to find ways to address the issues. The role of the group is to challenge, help and support each other to cross these research boundaries while also respecting the limitations of scientific disciplines.

- Regional collaboration is growing across Europe, the Americas and in South East Asia. This is the first stepping stone in developing international collaborations and is good support to the Alliance. These regional networks should be further encouraged and supported and if they can be successfully linked then it starts to become a truly global network.

- Although government support of the Alliance is often discussed, we cannot forget the potential for support from the private sector. The LRG needs to find ways to combine public and private interests as its work unfolds. This is not an easy task for the Alliance, but will be greatly helped both by the Council's efforts to set up formal partnerships and also by the Group's own efforts to foster links and collaborations with other relevant organisations (refer to discussions on day 2, pages 10 - 12).

- Another challenge is ensuring that research can be and is used by farmers. There are more problems with discussing GHG issues with the farming community than with the science community. It is vital that the science community is able to help farmers see the opportunities to increase and improve agricultural production while still addressing greenhouse gas emissions.

- There is a high demand from the Alliance member countries for knowledge transfer and training, and establishing and developing research activities, especially on measurement and monitoring systems. Countries want to maximise participation in any regional or local workshops and other events and this is where the Alliance can help, e.g. publicising details to a wider audience and encouraging participation through the membership.

- There is a focus in research on the possibilities to reduce GHG with nutrition of the rumen (CH_4) and with manure management (CH_4 and N_2O). There is less research but much interest in the possibilities of Carbon sequestration in grasslands and rangelands. With the growth of international interest in agriculture/climate change issues, there are now many meetings around the world and on an increasing range of topics. It is important that everyone is kept informed of these so that they can be combined where possible and also opened up to participation by others, to help ease pressure on limited time and resources.

DISCUSSION OF PROPOSED NETWORK AND DATABASE ON 'FEED AND NUTRITION IN RELATION TO GHG EMISSIONS'

21 The idea for a network and database on 'feed and nutrition in relation to GHG emissions' was originally proposed at the LRG meeting in Banff, October 2010. The agenda item in Amsterdam was an opportunity to take the concept further. A short presentation was given by Switzerland as the proponent of the concept and then the floor was opened for discussion.

22 The network and database were fully endorsed by the group. Discussion focused on expectations for the network, likely benefits for participants/users, the scope, and a possible short term action plan. It was agreed that it would focus on ruminant methane but would also take into account nitrogen excretion. Switzerland would coordinate the activities with support from others. The Secretariat will also assist by circulating a formal invitation to countries to nominate an expert to assist with the further establishment of the network and to develop an action plan (the latter in due course).

SATURDAY 5 NOVEMBER

SURVEY OF RESEARCH AND CAPABILITY BUILDING NEEDS AND OPPORTUNITIES

23 The second day of the meeting started with a presentation and discussion on the results of the recent LRG survey on research opportunities and training/capability building needs. The presentation is provided separately.

24 The survey had concentrated on three areas of interest: (i) Training; (ii) Opportunities for enhancing collaborative research; and (iii) Awards/fellowships/funding. Key points arising from the discussions included:

- Strong support for regional technical training workshops; if possible combined with local business with partners. The first workshop will be a South East Asian regional event, to be

held in Thailand in the first half of 2012. Agreement that New Zealand would take the lead on this first workshop, working closely with other countries. More details will be provided in due course.

- There was support for the UK's proposal regarding the links between animal health and GHG emissions that was raised on the first day. The group agreed this was an important area and the UK will explore how to progress this in conjunction with other interested countries and relevant organisations like FAO and ILRI.

- Acknowledgement of the recent workshop on measurement of livestock GHGs (Global Research Inventory) in the UK (Reading) in support of the Alliance and the opportunity it presented to demonstrate different technologies available to carry out CH_4 and N_2O measurements.. The UK agreed to review future opportunities arising from the workshop as potential activities for the LRG to be considered at the next meeting.

- The limitations of available funding for enhancing collaborative research were acknowledged by the group.

- Need for better promotion of existing opportunities for training and development (e.g. US Borlaug Fellowships, LEARN awards etc.). Countries can help with this by sharing details of any domestic/regional opportunities with the Secretariat, who can then post them on the Alliance website. Also, existing networks such as LEARN can be used to distribute information.

LESSONS FROM THE FIRST ROUND OF THE RESEARCH STOCKTAKE, AND IMPLICATIONS FOR THE NEXT ROUND

25 An updated analysis of the LRG's stocktake data was presented to the group, expanding on the discussion paper that had been distributed prior to the meeting (both documents provided separately). The group was asked to review the value of the stocktake and its potential future use/s for the LRG.

26 Many countries noted the stocktake had been a useful exercise, e.g. helping inform LRG representatives themselves on what research their country is doing. However, most were not keen to carry out a full stocktake exercise on an annual basis. Some thought that a less frequent time period could be a possibility. Most countries were in favour of having the information more easily available, e.g. via a searchable database (possibly web-based), but it was also noted that some countries had expressed the need to protect some data and maintain confidentiality. Some countries raised issues about the age of data, e.g. clearly stating it so that users can easily determine how up to date the information is. It was noted that many countries had originally filled the stocktake out with the understanding that the information would eventually be made public. However, it was agreed that any detailed information that would be made public would require the consent of the country/institution involved before it could be released.

27 Some countries saw value in the stocktake for helping maintain and encourage researcher-to-researcher contact. However it was agreed that dedicated networks exist that could better achieve this, e.g. LEARN, rather than having to rely on the stocktake to do more than it was originally intended.

28 Countries agreed that statistical results from the current stocktake data and experiences in compiling and analysing the data could be published in an aggregate form in an appropriate journal. Opportunities for such a publication would be explored by New Zealand, and any countries

interested in contributing to such a publication should contact the Secretariat. No country-specific data would be made available in this publication.

PROGRESSING WORK ON MANURE MANAGEMENT FOR RUMINANTS AND NON-RUMINANTS

29 This agenda item opened with a presentation from the Netherlands summarising the information gathered in the stocktake on manure management practices (presentation provided separately), including identifying the key research areas across countries. The majority of the research work on non-ruminants is concentrated predominantly on swine, and storage and treatment (anaerobic systems) of manure. Research on the manure management of ruminants is predominantly focused on cattle, and storage and treatment as well.

30 The UK then gave a presentation reviewing the state of knowledge on manure management technologies (presentation provided separately). A large number of technology issues were identified, some of which are already successful, while others are still only potential technologies.

31 To initiate the discussion following the two presentations, China and Vietnam were asked to provide a brief background on their domestic situations. China has a wide range of farming systems. Bio digesters are applicable but the cost is high compared to the income of small farmholders. The government is supporting this work and a significant number of bio digesters have been built. For larger, more intensive systems there are a range of options available but many of these larger farms have not adopted them. Only 3% of intensive farmers use a manure management system but the majority of these still apply manure directly to land. This is because many farmers are not aware of GHG issues. There is a need to raise farmer awareness of how these systems can be useful in improving the local environment and in bringing co-benefits to the farm. In Vietnam, the systems are very different as there is limited agricultural land and farmers do not have the money to develop any manure management systems. Manure management is a big problem with high volumes of slurry being applied directly to the land.

32 During the ensuing discussion, countries agreed that farmers and officials both need to be shown the co-benefits of using low GHG manure management systems. It was also important that research on new manure management technologies and mechanisms is carried out to encourage farmers to use them. It was recognised that along with research into manure management systems that is applicable to the many different countries and their situations, dissemination of existing information is vital. The information needs to be provided in a way and a format that is beneficial to as many countries as possible. Some suggestions were given:

- Linking the Alliance website to an existing website on manure management (www.extension.org). This contains webcasts on a multitude of disciplines and is freely available.

- Establishing a network on manure management for small farmholders.

- Adding value to existing regional networks by having workshops to help share information and build capability.

- Continue the review on the state of knowledge on manure management that is already underway, led by the UK. This is a starting point to develop a framework of further work and also to gather information on emission factors on the different stages in the manure management process. The data can then be included in the Emission Factor Database (EFDB) to add value to that resource and also to ensure the dissemination of this information.

33 It was agreed that the Netherlands will advance these ideas by email.

PRESENTATIONS FROM OTHER INSTITUTIONS ON POTENTIAL SYNERGIES WITH THE LRG

34 Prior to the meeting, the co-chairs had sought the approval of the LRG to invite relevant institutions and organisations to attend. This was to help the LRG understand the work of these organisations and how they could work together to achieve LRG goals. Invited institutions were: FAO, World Bank, European Commission Directorate-General Research, EU JPI FACCE, Animal Task Force, Sustainable Agriculture Initiative, International Meat Secretariat, ILRI (unable to attend), CATIE (unable to attend), and CCAFS (unable to attend). The invited organisations were asked to present to the LRG on the potential synergies that they could see with the LRG. All presentations are provided separately.

FAO – Dr Pierre Gerber, Livestock Policy Officer, Animal Production and Health Division

35 Gerber noted that many Alliance countries are also FAO member countries and therefore there are many existing links. Gerber's presentation focused on the partnership between the International Dairy Federation (IDF) and FAO, as an example of how the FAO and LRG could work together.

36 FAO is also developing a multi-stakeholder partnership to conduct further the work in benchmarking and monitoring the environmental performance of livestock food chains. Reports similar to FAO's Greenhouse Gas Emission from the Dairy Sector report are planned for 2012 – one on ruminant meat production and another on mono-gastrics. Gerber outlined a number of benefits of this work, e.g. improved co-ordination and cost effectiveness; improved consistency, objectivity and credibility of environmental performance enhancement approaches; and avoidance of "short-termism". An assessment and quantification of the uncertainty of life cycle analysis (LCA) outcomes will be carried out in an effort to help improve how LCA information is produced.

37 Gerber saw the FAO and the LRG as being highly complementary. The FAO does not carry out any work on emission factors, measurements, etc. Therefore the LCA work carried out by the FAO could draw on data that has been produced by the LRG. Gerber saw many other possible benefits from collaboration with FAO, including LRG access to FAO regional offices, some of who are doing work in the GHG area (e.g. in Latin America).

World Bank – Cees de Haan, Consultant

38 De Haan provided an overview of the activities of the World Bank and, in particular, its role in climate change and livestock emissions research. He identified where he felt the synergies between the World Bank and the LRG existed.

39 The World Bank currently spends US$200 million per year across 15 livestock development projects. It has limited grant funding and almost all of it goes to the Consultative Group on International Agricultural Research (CGIAR) (US$100 million per year). The Bank's main focus on agriculture and climate change is in "climate smart agriculture" and in piloting carbon footprinting tools. The Bank has a variety of funding mechanisms to support developing country activities on climate change, e.g. 'BioCarbon Fund'.

40 The World Bank saw itself mainly as a "client" of the LRG as it could use the results from LRG research, e.g. on methodologies of measuring and potentially to help upscale proven technologies in reducing GHG, to assist with its own work. De Haan noted that funding to support LRG activities

could be possible but would have to be as a request from a government (standard practice for the Bank), which is usually treated as part of a competitive bidding process.

European Commission – Jean-Charles Cavitte, Senior Administrator, DG Research and Innovation

41 Jean-Charles Cavitte from the European Commission presented funding opportunities that may be of interest to the LRG. The Commission funds approximately €30-40 million of research on livestock each year. Funding is open to all countries within the EU and also encourages collaborative research with international partners outside of the EU. Cavitte suggested that a link to the Commission website could be placed on the Alliance site so that funding calls can be viewed by LRG members and potential collaborations with EU countries followed up.

42 Cavitte noted that a Commission initiative of potential relevance to the LRG is the Global Initiative on Animal Health. This is an industry-driven forum whose focus is on creating a partnership covering the whole chain, from innovation to delivery of new vaccines and tests. Cavitte went on to identify other, broader areas where the LRG and the Commission could work together, including networking between existing projects, sharing research results, mapping research to reduce duplication or fragmentation of effort, engaging in priority setting (e.g. identification of research topics), and pooling expertise where relevant. Cavitte also noted that the Commission is unclear on areas for investment in manure research and that this could be an area the LRG could assist with.

EU Joint Programming Initiative on Food Security, Agriculture and Climate Change – Dr Jean-Francois Soussana, Scientific Director Environment, French National Institute for Agricultural Research (INRA)

43 Soussana presented on the EU Joint Programming Initiative in Food Security, Agriculture, and Climate Change (FACCE-JPI). There are currently 20 countries across the EU that are involved in this initiative. It has five core research themes: i) Sustainable food security under climate change; ii) Environmentally sustainable growth and intensification of agriculture; iii) Assessing and reducing tradeoffs: food production, biodiversity & ecosystems services; iv) Climate change adaptation; and v) GHG mitigation. Soussana provided more detail on the fifth theme as this is most related to the work area of the LRG.

44 Soussana also informed the LRG of a possible multi-country call which is currently being discussed by a number of countries involved in the FACCE-JPI to support theme 5 (GHG mitigation) in a coordinated manner which would be relevant to the work of the Alliance. The objective of this joint call is to create a mechanism for coordinating research funding of participating countries and to encourage scientists to collaborate internationally. Soussana welcomed the participation of other interested countries.

Animal Taskforce – Professor John Oldham, Research Liaison

45 John Oldham presented on the Animal Taskforce, which is a group of European livestock production stakeholders and research providers, working together on four platforms: European Aquaculture, European Feed Technology Centre, Sustainable Farm Animal Breeding and Reproduction Technology, and European Technology Platform for Global Animal Health. The Taskforce works together on areas of common interest; organises “vision discussions” with experts and the European Commission; translates these into vision papers for research and dissemination; maintains a dialogue with European Commission officials; works together on joint calls to access European Commission research funds; and promotes the European Research Area Networks scheme (ERA-NETs).

46 Oldham offered that the Animal Taskforce could organise a discussion within Europe between the Taskforce and the LRG to increase understanding of mutual goals and needs. Action

could then be prioritised on relevant areas and financial support could be organised. Oldham also mentioned that, although it has not occurred before, it might be possible for a non-European institution to join the Taskforce. However, the focus would need to remain on Europe with links elsewhere.

International Meat Secretariat – Hsin Huang, Secretary General

47 Huang outlined the role of the International Meat Secretariat, describing it as a private sector, not-for-profit organisation. He commented that the meat sector is increasingly under attack that meat production is bad for the environment so one of the main tasks for the IMS is to partner with other groups to try and shift perceptions away from this. Huang saw some clear synergies with the work of the LRG, particularly to help the IMS move more into the area of climate change (currently its focus is on sustainability but it does not have a committee that explicitly addresses climate change). The IMS has been impressed by the high scientific credibility of the work carried out by countries in the LRG. Huang noted that it would be helpful to have a plain English synthesis of this work so that the IMS can more clearly understand what it means for them and their constituents. Because of its international role as a representative of the meat sector, the IMS has access to many meetings and opportunities to influence things at a global level, which could help promote and support the LRG's work.

48 Huang noted the broad IMS membership (94 members around the world in 30 different countries) but acknowledged that they would like greater representation from developing countries. This has been somewhat limited to date because these countries are not always high producers/consumers of meat. The IMS is looking at how to improve its membership in that regard and saw a real opportunity from working with the LRG.

Sustainable Agriculture Initiative – Kimberly Crewther, Trade Policy Manager (Europe), Fonterra

49 Crewther presented on the work of the Sustainable Agriculture Initiative (SAI) Platform, describing it as a not-for-profit organisation set up by the international food industry to share knowledge and initiatives in support of sustainable agricultural practices across the food chain.

50 The SAI Platform works with farmers on a daily basis so has good systems in place to do this. Due to these links with farmers and the many different areas that SAI members work in, the SAI has strengths that can be useful to the LRG. For example, through testing, implementation and providing feedback of technologies and how they might be rolled out over a range of geographies. Crewther noted that the SAI was doing work on GHG metrics and that it welcomed input from broader stakeholders to "make sure they get it right".

Summary of discussions

51 All of the guests invited to the meeting noted the value of the LRG and expressed their willingness to foster the group's activities for mutual benefit.

52 The group found benefit in having these organisations present at the meeting as it provided an opportunity to interact with them and to hear how the LRG could work with others. The group agreed to continue the practice of inviting guests in order to explore new connections and how to get more collaborators involved. It was noted that other organisations or initiatives which are more focused on developing countries would be of benefit (acknowledging that unfortunately, ILRI, CATIE and CCAFS were unable to attend the Amsterdam meeting). Suggestions for potential collaborators to invite to future LRG meetings were welcomed. In the first instance, these should be sent by countries to the co-chairs, who would then circulate to the LRG for consideration. The co-chairs

were also asked by the LRG to give consideration to how to make the most of the opportunities for collaboration that were identified during the meeting.

KEY POINTS OF THE LRG ENGAGEMENT WITH OTHER RESEARCH AND CROSS-CUTTING GROUPS OF THE ALLIANCE

53 There was a short discussion on the way that the LRG interacts and works with the Alliance's other Research and Cross-Cutting Groups. The following key points were made:

Paddy Rice Research Group

54 The Paddy Rice Research Group is meeting in Japan on 18 November 2011. The Japanese representative at the LRG meeting will also be attending the Paddy Rice meeting. It was agreed that it would be useful to hear from the Paddy Rice Group on any work they are carrying out that takes into account whole farm systems, i.e. mixed paddy rice and livestock farming, and the overall emissions from these systems. There was interest in hearing more from the Paddy Rice Research Group on how it is addressing LCA, which was identified in its action plan. Also, is there any scope for microbiological scientist cooperation between those working on methane from rice and those working on enteric fermentation from livestock?

Croplands Research Group

55 There were no specific points made regarding the links between the LRG and the Croplands Research Group, given that the latter had already met (20 October 2011) by the time of the LRG meeting. It was noted that work on soil carbon measurement methodologies, which had been recognised in the LRG work plan as possible joint project, was not a priority issue for the Croplands Group at its last meeting.

Inventory and Measurement Cross-cutting Group

56 The inaugural meeting of the Inventory and Measurement (I&M) Cross-cutting Group is taking place in Canada from 8 – 10 November 2011. A short presentation was given to the LRG by the Netherlands, on behalf of the co-chairs of the I&M Group (see separate PDF). This included the proposed objectives for the group that will be discussed at the meeting. The I&M Group will work closely with the other groups to ensure there is no duplication or overlap of effort. Feedback from the I&M Group on their identified role and actions will be provided to the other groups soon after their meeting.

57 As identified during the work plan discussion (see pg 5), the LRG agreed that measurement of soil carbon under permanent grassland is an important area of work and should not fall through the gaps. This is an area where the I&M Group could assist and it was agreed to raise it in their meeting. The LRG also agreed that it would be helpful to have a high-level synthesis of the various methodologies for measuring agricultural greenhouse gases and that this could be something the I&M Group could consider.

Soil Carbon and Nitrogen Cycling Cross-cutting Group

58 Unfortunately France's co-chair of the Soil C&N Group (Jean-Francois Soussana) was unable to attend this part of the LRG meeting. However, as he is closely involved in LRG work as well as co-chairing the other group, he will be able to liaise between the two and keep each informed.

OPTIONS FOR OUTREACH AND PROMOTING EFFECTIVE USE OF THE LRG PRODUCTS AND ACTIVITIES

59 This session was an opportunity for the LRG to discuss activities for promoting LRG products and activities to external audiences. Current promotional activities for the LRG include its page on the Alliance website and a newsletter that is produced regularly and also made available on the website. The newsletter covers LRG activities and is meant to facilitate information-sharing and raise the profile of the LRG. Two editions have been produced to date.

60 The group was asked if they were happy to continue with the newsletter as it is and whether they would contribute content if asked to. Most countries were happy with the newsletter and felt it was good to have something that promoted what the group was doing. However, although the newsletter is not on behalf of the Alliance, and is not the opinion of the Alliance but purely provides an update of current activities by the LRG, there was still some concern as to whether this would come under the Communications Policy that the Council is currently working on. It was agreed that the co-chairs should seek clarification on this matter before any further newsletters were disseminated.

61 There was a discussion on the need to better connect agricultural GHG scientists in individual member countries with their Alliance representatives. It was suggested that contact details for these nominated representatives could be made publicly available on the Alliance website to assist in-country coordination of effort. There was strong support for this idea and it was agreed that the Secretariat should be asked to put it in place for the LRG. The group was also asked to provide the Secretariat with a list of scientists who are working in this area so that they can be put into the LEARN network, which would also help with identifying options for research collaborations.

VISION FOR THE FUTURE

62 The final agenda item for the LRG meeting was to discuss the group's longer term vision. The co-chairs noted that in the past, the LRG has necessarily had to focus on the short- and medium-term. However, with the Charter now signed, the Research and Cross-Cutting Groups formally established and more permanent structures in place for the Alliance, there is now a need to think about the LRG's long-term vision and actions. Five key areas were proposed for the group to consider. These relate to the three action categories proposed at the beginning of the meeting and re-summarised below:

a) Actions the group can **do**:
    a. The LRG as a source of information and trusted information, e.g. development of best practice methodologies and technical manuals
b) Actions the group can **facilitate**:
    a. Continued development and facilitation of new collaborations that are mutually beneficial and can be sustained.
    b. Regional workshops for capacity building and increasing expertise.
    c. Global research networks to pool data and expertise (animal health and GHG; manure management network; network nutrition and feed)
    d. Better coordination of existing resources and funding mechanisms and linking with other initiatives working in the same area to avoid duplication, e.g. JPI-FACCE, AnimalChange, FONTAGRO
c) Actions the group can i**nfluence**:
    a. Influencing research directions and funding decisions of other organisations, attracting a and offering value propositions for more resources and better utilising existing resources

63 The co-chairs also noted that the LRG needed to be realistic about its goals – we cannot do everything at once. Small but positive and concrete steps that are achieved are better then big long-term goals that are not achieved. Short term actions lead to medium term plans that achieve long term ambition.

NEXT MEETING/CLOSING REMARKS

64 In closing the meeting and discussing arrangements for the next one, the co-chairs reflected that the Amsterdam meeting was very fruitful with a lot of results achieved in a short space of time. The LRG is functioning very well and attendees were thanked for their contributions between meetings and over the past few days, both at the NCGG-6 and in the LRG meeting itself. Once again, it had been helpful to be able to have the meeting in the margin of an existing event and this should continue to be a characteristic of future LRG meetings.

65 In discussing this, the co-chairs proposed that the group should meet once a year and that preferably the next meeting would be in the second half of 2012. The co-chairs confirmed their understanding that the groups would not be meeting as part of the Council meeting in mid-2012 in Canada – this would be a Council meeting only. However, the LRG co-chairs would look to attend the Council meeting to present LRG efforts to date and intentions for the future. Co-chairs of the Research and Cross-Cutting Groups may meet to coordinate their efforts in this regard.

66 It was not possible at the time to identify existing events in the last half of 2012 that the group could use as a venue for its next meeting. Therefore, countries were asked to think of any suitable conferences, workshops or other meetings – with Asia or South America floated as possible locations – that may relate to the group and that might be an opportunity to hold an LRG meeting in the margins. Countries should contact the co-chairs or the Secretariat with their suggestions.

APPENDIX 1: Participants List

Country	Attendees
Alliance Member Countries	
Argentina	Laura Finster, INTA; Guillermo Berra, INTA (lfinster@cnia.inta.gov.ar)
Australia	Unable to attend
Brazil	Pedro B. Arcuri,, EMBRAPA (arcuri@agropolis.fr)
Canada	Richard Butts, Agriculture & Agrifood Canada (Richard.butts@agr.gc.ca)
Chile	Marta Alfaro, INIA (malfaro@inia.cl)
China	Dong Hongmin, Chinese Academy of Agricultural Science (donghm@mail.caas.net)
Colombia	Olga Lucia Mayorga, CORPOICA (lmayorga@corpoica.org.co)
Costa Rica	Unable to attend
Denmark	Peter Lund, Aarhus University (peter.lund@agrsci.dk)
Finland	Unable to attend
France	Jean-François Soussana, INRA, JPI-FACCE (dsenv@paris.inra.fr); Mélynda Hassouna, INRA (hassouna@rennes.inra.fr)
Germany	Karl-Heinz Südekum, University of Bonn (ksue@itw.uni-bonne.de); Friederike Hippenstiel, University of Bonn (fhip@itw.uni-bonn.de)
Ghana	Unable to attend
Indonesia	Amlius Thalib, Indonesian Centre for Animal Science Research (am_thalib@yahoo.com); Romjali Endang
Ireland	Padraig O'Kiely, TEAGASC (padraig.okiely@teagasc.ie)
Italy	Giacomo Pirlo, Italian Ministry of Agricultural, Food and Forestry Policies (giacomo.pirlo@entecra.it)
Japan	Tomoyuki Kawashima, Japan International Research Centre for Agricultural Sciences (tkawa@affrc.go.jp)
Korea	Kyu-Hyun Park, National Institute of Animal Science (kpark74@korea.kr); Ji-hyuk Kim, Rural Development Administration (jihyuk@korea.kr)
Malaysia	Mohd Saufi Bastami, MARDI (msaufi@mardi.gov.my)
Mexico	Sergio Gomez Rosales, INIFAP (gomez.sergio@inifap.gob.mx)
Netherlands	Martin Scholten, Wageningen UR (martin.scholten@wur.nl); Jac Meijs, Wageningen UR (jac.meijs@wur.nl); Paul Vriesekoop, Wageningen UR (paul.vriesekoop@wur.nl); Julio Mosquera Losada, Wageningen UR (julio.mosquera@wur.nl)
New Zealand	Harry Clark, NZ Agricultural Greenhouse Gas Research Centre (harry.clark@nzagrc.org.nz); Andy Reisinger, NZ Agricultural Greenhouse Gas Research Centre (andy.reisinger@nzagrc.org.nz); Victoria Hatton, NZ Agricultural Greenhouse Gas Research Centre (victoria.hatton@nzagrc.org.nz); James Walker, New Zealand Embassy to the Netherlands (james.walker@mfat.govt.nz)
Norway	Unable to attend
Peru	Unable to attend
Philippines	Unable to attend
Spain	Antonio Torres, Universidad Politécnica de Valencia (atorres@dca.upv.es); Carlos Fernández, Universidad Politécnica de Valencia (cjfernandez@dca.upv.es)
Sweden	Unable to attend
Switzerland	Michael Kreuzer, ETH Zurich (michael.kreuzer@inw.agrl.ethz.ch); Johanna Zeitz (johanna.zeitz@inw.agrl.ethz.ch)
UK	Pinder Gill, DEFRA (pinder.gill@defra.gsi.gov.uk), Jon Morrby, Aberystwyth University (jon.moorby@aber.ac.uk); Toby Mottram, DEFRA (toby.mottram@defra.gsi.gov.uk); Maggie Gill, DFID (m-gill@dfid.gov.uk); David Chadwick, Rothamsted Research (david.chadwick@rothamsted.ac.uk)
USA	Richard Hegg, USDA (rhegg@nifa.usda.gov)
Uruguay	Veronica Ciganda, INIA (vciganda@inia.org.uy);
Vietnam	La Van Kinh, Institute of Agricultural Sciences for Southern Vietnam (lakinh@hcm.fpt.vn)

Alliance Observer Countries	
Pakistan	Unable to attend
Russia	Unable to attend
South Africa	Unable to attend
Thailand	Unable to attend
Invited participants	
Animal Taskforce	John Oldham, Research Liaison (john.oldham@sac.ac.uk)
European Commission	Jean-Charles Cavitte, DG Research (jean-charles.cavitte@ec.europa.eu)
FAO	Pierre Gerber, Livestock Policy Officer (pierre.gerber@fao.orgorg)
International Meat Secretariat	Hsin Huang, Secretary General (hsin.huang@meat-ims.org)
Sustainable Agriculture Initiative Platform	Kimberly Crewther, Trade Policy Manager (Europe), Fonterra (Kimberly.Crewther@fonterra.com)
World Bank	Cees De Haan, Consultant (cdehaan@worldbank.org)
Secretariat: Andrea Pickering and Hayden Montgomery, New Zealand (andrea.pickering@maf.govt.nz, hayden.montgomery@mfat.govt.nz)	