

Croplands Research Group Meeting
Held in conjunction with the Soil C&N Cycling Crosscutting Group
Fiera del Levante, Bari, Italy (EuroSoil2012 Conference)
Istituto Agronomico Mediterraneo di Bari, Valenzano, Italy
3, 5, 7 July 2012

Meeting Report

OVERVIEW

The fourth meeting of the Croplands Research Group of the Global Research Alliance on Agricultural Greenhouse Gases (“the Alliance”) was held in Bari, Italy, over three sessions on 3, 5, and 7 July 2011, in the margins of the Eurosoil 2012 Conference.

The Croplands Research Group meeting was co-chaired by the USA (Dr Steven Shafer and Dr Alan Franzluebbers, USDA) and Brazil (Dr Ladislau Martin-Neto, EMBRAPA).

The meeting was held in conjunction with the Soil Carbon and Nitrogen Cycling Cross-Cutting Group.

This report is a summary of the discussions and outcomes from the meeting. All presentations given during the meeting are provided separately.

PARTICIPANTS

The meeting was attended by 45 Alliance country representatives and 4 other technical experts. 20 Alliance member countries were represented. No observer countries attended.

- **Alliance Members attending: Australia, Brazil, Canada, China, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Thailand, UK, USA,**
- **Alliance Members unable to attend: Argentina, Chile, Colombia, Ghana, Indonesia, Malaysia, Mexico, Peru, Philippines, Republic of Korea, Viet Nam, Uruguay.**

MEETING OUTCOMES

The meeting achieved the following outcomes:

- An update from the Secretariat covering the Alliance Council meeting in Saskatoon, Canada, and the Alliance website.
- Update on country activities.
- Clarification process for decision making of the Group between meetings.

- Agreement to a series of new activities to be added to the Croplands Research Group's Work Plan.
- Plans for cooperation with the Soil Carbon and Nitrogen Cycling Cross-cutting Group.
- Confirmation that the Group will meet again at the November 2013 "Tri Societies" Conference in Tampa, Florida.

SUMMARY OF DISCUSSIONS

Note that although the discussions of the Croplands Research Group took place over three sessions during the week of the EuroSoil conference, this report has been structured in a topical, rather than chronological way.

OVERVIEW OF THE THREE SESSIONS

1. In Tuesday evening's opening for the meeting, Dr Steven Shafer (Agricultural Research Service - USDA) as one of the Co-Chairs of the Croplands Research Group (CRG) welcomed participants and presented the agenda for the meeting. The Group was asked to consider activities that build on member country research activities and align with components of the CRG Action Plan. Dr Ladislau Martin-Neto was recognized and welcomed as the CRG's new Co-Chair on behalf of Brazil. Steve Shafer shared the combined research groups' presentation at the most recent Council meeting and provided some highlights of recent CRG activities. Representatives of the three CRG Action Plan Components provided brief overviews of activities and interests in their respective groups. Proposals for meeting plans in 2013 and 2014 were introduced for consideration through the week.
2. In Thursday evening's session, discussion centred on interactions between the CRG and the Soil Carbon and Nitrogen Cycling Cross-cutting Group (C&N). Jean-Francois Soussana, Sylvain Pellerin, and Sylvie Recous provided an introduction to the interests and current activities of the C&N Group and opened discussion around modelling topics provided to CRG and C&N Group attendees in the weeks before the meeting.
3. The host for the Saturday all-day session was Dr. Pandi Zdruli at the Istituto Agronomico Mediterraneo di Bari (www.iamb.it), where the group met. Dr. Zdruli provided an overview of the institute, which just celebrated its 50th anniversary; 13 countries participate in the institute, partnered with centres in Montpellier, Zaragoza, and Crete, all of which comprise the Centre International de Hautes Etudes Agronomiques Mediterraneennes (www.ciheam.org). The chair noted the host's extraordinarily generous support and thanked Dr. Zdruli and the institute for enabling the CRG's meeting on Saturday, including meeting space, visual aid hardware, break and lunch arrangements on-site, and logistics for a post-meeting dinner at a fine local restaurant. The day focused on in-depth discussions, including two break-out sessions, on specific topics for collaboration among scientists in the CRG and C&N Group.

UPDATE FROM THE SECRETARIAT

4. The Secretariat gave a presentation of the outcomes of the Alliance Council meeting held in Saskatoon, Canada from 5 – 8 June 2012 (available from the Alliance Council documents area on the Alliance Member site). As a part of this presentation, the key outcomes from the

Council meeting were summarized, including notification that the Communication Policy has now been adopted by Council, that the Council requested more regular and detailed reporting from all of the Groups on their activities, and that the Council would like all Groups to report in a consistent manner by giving consideration to activities in their work plans in the following categories: stocktake, networks and databases, capability development, research collaboration, information and technology transfer, policy support and links to international processes.

5. The Secretariat also provided an update on the Alliance website pointing out the improvements that have been made and encouraged members to make full use of it. A user guide is located on the Secretariat Updates section of the Member's area of the Alliance website.

Discussion

6. During the short discussion there was a question to the Secretariat about when funding is going to be mobilised by Ministers/Ministries to support the Research Groups. The Secretariat pointed out that the new structure for reporting to Council, and the recent addition of Alliance Partners, will help to mobilise resources. The Secretariat also pointed out that all Alliance participants, including those in the Research Groups have a responsibility to make the case within their own systems to try to mobilise more resources to support the work of the Alliance.
7. Others asked whether or not the Croplands literature database could be linked to the Alliance website in the Croplands Research Group area. The Secretariat confirmed this was possible. Steve Shafer also encouraged all other Groups to consider contributing to the Croplands literature database of Kansas State University. Dr. Charles Rice of K-State is the contact (cwrice@ksu.edu).
8. There was a question about how many members are using the Alliance Website.

Discussion of Croplands Group Action Plan

9. The Action Plan of the Croplands Research Group is divided into three component areas of croplands greenhouse gas emissions research that the group agreed to during the second meeting of the Group March 2011 in Versailles, France. These are:
 - **Component 1:** Quantifying Net GHG Emissions in Cropland Management Systems – Project lead Chuck Rice (USA), Guy Richard (France).
 - **Component 2:** Assessing GHG Emissions in Agricultural Peatlands and Wetlands – Project lead Lillian Øygarden (Norway) Kristiina Regina (Finland) Åsa Klemedtsson (Sweden).
 - **Component 3:** Modeling N₂O emissions and Soil Carbon Stocks – Project lead Sylvain Pellerin (France), Nancy Cavallaro (USA).

Prior to the meeting, representatives from member countries were asked to provide specific information about the type of research, outreach, or educational actions that would be of interest for collaboration under one or more of the three components from the Action Plan, and to specify the scientist(s) who might be interested and available for such collaboration. Countries were given the option of submitting a one-page summary of their interests, and these provided the basis for group discussion and subsequent organization of specific activities. These documents are available within the CRG's part of the Alliance website (Alliance Member only access).

Discussion on governance of the Group and organisation of work

10. The Secretariat was requested by the Group's co-chairs to provide some reflections on the way in which other Groups were organising their work, and on the key elements of the Charter that relate to Group decision making, including the consensus decision making process.
11. The Secretariat began by reminding Members that the Alliance is not in itself a funding body, but that its purpose is to bring about a step-change in global research activity. It was also highlighted that it is not always the case that the expertise needed to address every research activity exists within the Groups and there is a significant amount of expertise outside the Groups.
12. There were examples of ways that other Groups had dealt with this complexity by establishing a process to advance the work of the Group between meetings, and to enable consensus decisions to be taken on the issues of importance and priority for the Group without this implying that all of the activities had to be conducted within the Group. With this in mind and reflecting on the outcomes of the Council meeting, the Secretariat suggested that the Group might want to consider activities that it could undertake, facilitate or influence in some or all of the following categories: stocktake, networks and databases, capability development, research collaboration, information and technology transfer, policy support and links to international processes.

Discussion

13. During the course of the discussion it was questioned how to proceed when an idea emerges between meetings and whether or not things could be started and then advanced and reported between meetings. Also, there was a need to identify what we don't know and for Members to be proactive in identifying areas that need to be addressed.
14. On the question as to what the distinction really was between undertake, facilitate and influence, examples were given of the Livestock Research Group work plan. Referring to some of the proposals being considered by the CRG, (i) the development of a modelling network could be considered to be an activity facilitated by the Group, (ii) if brochures were to be prepared for farmers on good practices this would be an undertaking of the Group, and (iii) interactions between the Group and the Agricultural Model Intercomparison and Improvement Project (AgMIP) could be characterised as the Group having influence on another process.
15. It was pointed out that it was important to have a vision for 5-10 years to direct research and fund it. Questions that country representatives have need to be identified and decisions need to be clear when they have been taken or not.

Way forward

16. On the basis of this discussion, the CRG agreed that while not everything had to be resolved during meetings of the Group, that it was very important to have clarity on the process between meetings so that the Group is able to make progress. It was agreed that the process would be as follows:
 - Proposals for new activities would be made by Members to the co-chairs, including how the proposed activity fits within a revised work plan for the Group,

- Co-chairs would then circulate the proposal (through the Secretariat) to the Group Members' nominated contact points for their consideration.
 - If there were no objection within a specified time period, then the activity would be agreed and included on the Group's revised action plan.
17. All documents would be placed on the Group's section of the Alliance website. Members were encouraged to use discussion forums on the Alliance website to develop ideas. The Secretariat was asked to confirm whether emails sent out to the Group can also be saved on the website.

DISCUSSION OF MEMBER'S PROPOSED ACTIVITIES FOR THE CROPLANDS GROUP

18. These discussions took place during the Group meeting plenary, and in some cases in break-out groups during the Saturday session of the meeting. For ease of comprehension all discussions that took place on each proposal have been grouped together.

Agro-forestry - Canada

19. Denis Angers provided an overview of Canada's proposal to organize a joint Croplands-Inventory and Measurement workshop on measurement and quantification of greenhouse gas emissions and carbon in agro-forestry systems, and to provide sustainable land management options through regional networks that promote the benefits of adopting agro-forestry practices (see activity proposal on the website for details). It was suggested that the workshop might take place in conjunction with the 13th North American Agroforestry Conference 19 – 21 July 2013 in Canada.
20. It was pointed out that there is a need to decide where it fits in the structure of the Group and that a research network under Component 1 could be the rightful place, that there was a need to involve forestry specialists, and that the Consultative Group on International Agricultural Research (CGIAR) and country experts should be included to ensure that all aspects of the ecosystem are covered.
21. Any Members interested in participating in this activity were asked to contact Henry de Gooijer (Henry.deGooijer@agr.gc.ca). During the meeting representatives of the US, France, Thailand, Brazil, NZ, Italy, Ireland, Denmark, Australia, and Sweden expressed interest in being involved. Canada will send (via the Secretariat) a formal invitation to participate to all Group Members in due course.

Irrigation efficiency - Canada

22. Denis Angers outlined Canada's proposed future activity to form a water use efficiency network to share science and technology that would improve water use efficiency while reducing greenhouse gas emissions (see activity proposal on the website for details).
23. Members expressing an interest in participating in this during the meeting were the US, Australia, NZ, Italy, Thailand, Brazil, France, the UK, and Spain.
24. Denis Angers clarified that the proposal is for an activity in the future and that Canada will proceed with this once the agro-forestry network is advanced.

25. In the meantime, Group Members with an interest in participating in this future activity should contact Laurie Tollefson (laurie.tollefson@agr.gc.ca).

Foreign Expert Exchange – Brazil

26. Ladislau Martin-Neto provided an overview of Brazil's proposal for an International Expert Exchange, building on the Brazilian Enterprise for Agricultural Research's (EMBRPA) LABEX and reverse LABEX programmes (see activity proposal on the website for details).
27. The proposal was that the CRG could stimulate or influence the LABEX institution to support Alliance related activities in all regions. The Alliance could also help find suitable scientists to take part in the exchange. Suitable scientists are those individuals that can promote young scientist exchange between member countries.
28. It was agreed that Brazil would lead discussion over email to define this activity further. Any interested Members should contact Ladislau Martin-Neto (martin.ladislau@yahoo.com).

Drained organic soils – Sweden and Norway

29. Sweden presented their proposal for activity on drained organic soils (see activity proposal on the website for details). Sweden pointed out that in boreal, temperate and tropical countries drained organic soils used for agriculture are a hot-spot for greenhouse gas emissions. The proposal is to discuss ongoing and needed activities, by Alliance members and possible cooperation with other organisations and networks, e.g. Intergovernmental Panel on Climate Change (IPCC) guidelines, Food and Agriculture Organisation's (FAO) Mitigation of Climate Change in Agriculture (MICCA) initiative.
30. The questions from Sweden to the Group were:
- what cooperation and influence can the CRG have on these processes?
 - is it an important issue in Alliance countries?
 - how to improve emissions estimates?
 - who will do it?
 - what influence can the Alliance have and what co-operation can be done in the name of the Alliance?
31. In response, New Zealand outlined that the government has tendered for research on N₂O and CO₂ under grazed pastures to better understand emissions. It will be the first time that annual mechanisms from these soils will be measured. The UK notified the Group that they are also starting work to look at it and highlighted that in Scotland there is interest in the net greenhouse gas impact of draining peatlands for wind farms. France said that they have an experiment that warms peatlands to discover how temperature affects emissions. In all of these examples there was significant interest and potential for greater collaboration.
32. It was pointed out that the Alliance had been invited to an informal expert meeting at FAO in March 2012 which resulted in a cooperative activity under the MICCA programme of FAO. The FAO MICCA programme currently lists the Alliance as a participant in the peatlands work. It was felt that there is a value in cooperation but there is a need for clarity from the Group and the Alliance in general on how to interact on this issue with FAO.

DNDC network – United Kingdom

33. The UK proposed that the CRG could undertake to set up a DNDC modelling network (see activity proposal on the website for details). An existing network on DNDC is acting as a clearinghouse for technical problems and there is opportunity to expand this into a more active forum for model users. The activity would document any modifications made to models, metadata, and take a more strategic approach to model development. The initial focus would be on DNDC (all gases) to look at mitigation options and reduce uncertainty. It could expand in the future into DayCent, RothC, Holos, APSIM, and other models. Key questions to be addressed could include how to improve greenhouse gas quantification, how to capture mitigation, how to reduce uncertainty, and how to make effective decision support tools.
34. The intention is for the network to be a collaborative network (virtual lab) of lectures and events, interactive website, link existing networks for testing, tuning and validating models, publishing protocols for the sites, mapping exercise showing regional groupings (climates, soils, ecosystems). It was also suggested that a 'moderated WIKI' approach could be taken so that people can add to it (but with an element of quality control).
35. The UK notified the Group that it would be able to provide a small amount of money to assist with the activity.
36. Throughout the course of the discussion it was queried whether a WIKI could link to or from the Alliance website, and it was thought to be useful if an evolutionary tree of the DNDC model could be developed that showed exactly the modifications that have been made to different versions which would enable potential users to select the correct tool for the task they are trying to perform. It was also pointed out that the work would have to link very closely to the work of the Soil Carbon and Nitrogen Cross-cutting Group. There was a question as to whether the Joint Research Centre of the European Commission could be linked into the work also.
37. It was also pointed out that the work should be well coordinated across the Research Groups and that it might be more appropriate to have it under the auspices of the Soil C&N Cross-cutting Group because it is related to Rice, Livestock, Croplands, given that now there is a 'landscape DNDC' model. It was then agreed that in the short term the intention of the activity would be to focus on education about the tool, rather than running the model and that the evolutionary tree would be very helpful because there is a lot of confusion about different versions. The activity could for now be considered to be a pilot in the CRG and if deemed appropriate it could become part of a broader modelling effort in the Soil C&N Cross-cutting Group.
38. The Group agreed with the vision of web-based resource, including the WIKI suggestion. It would be a pilot activity under the CRG on DNDC and expand in the future to other Groups through the Soil C&N Cross-cutting Group where it could also include treatment of uncertainty, applicability of different models for different mitigation options.
39. The following Members that were represented in the discussions indicated that they are happy to participate in this activity: UK, Ireland, Italy, NZ, USA, China, Japan, Thailand, and Spain.
40. The UK will send (via the Secretariat) a formal invitation to participate to all Group Members in due course.

Croplands GHG Network – USA

41. Mark Liebig outlined the USA's proposal for a formal greenhouse gas croplands network under Component 1 of the CRG, pointing out that the Group already has an objective to develop global networks. He pointed out that the key to success will be explicit goals, clear protocols and standards, integrated database and working relationships built on trust.
42. An invitation has already been sent to Group Members to collect background information. Ten countries responded positively to an excel spreadsheet survey identifying 123 experiments with 16 unique treatments. Of these, 93% of the locations were measuring soil organic carbon and 63% were assessing N₂O. So there was a strong foundation already in place. There was a need to discuss engagement, ownership, communication, and then review metadata synopsis in detail to help guide future activities.
43. During the discussion it was noted that it would be important to include annual flux of N₂O along with climatic conditions to allow correlation of greenhouse gas flux with management, and other variables. There was a question as to whether there would be potential for other databases to be linked to it and have it searchable. It was also highlighted that it would be very useful to take data from 'super-sites' with ammonia, nitrate leaching and other variables. There was agreement that the project will need to strike a balance between sufficient detail and encouraging participation without undue effort.
44. It was pointed out that much of the project is about data sharing so it will be important to establish data-sharing intellectual property rules at the outset (e.g. FLUX-Net already has a memorandum of understanding that could be used). By focussing on meta-data it would avoid a lot of the intellectual property issues and it could start with published data to begin with. The Secretariat was asked to check how far other groups are advancing in the area of meta-data sharing.
45. The Group took stock of the data that the group had found already in the initial inventory, and in order to enhance the Cropland GHG Network, there was a desire to follow this with a further inventory by expanding the data sheet to include other variables, including soil organic carbon, crop yield, annual greenhouse gas flux, and the methodologies being used for each. It was suggested that it would be useful to try to present the results of this as a group of papers at upcoming international meetings, such as the 20th World Congress of Soil Science (8 – 13 June 2014, Jeju Korea) and the International Conference on Agricultural Biosystems Engineering (ICABE) 20 – 21 June 2013 In Istanbul, Turkey.
46. The Group felt that if the project were successful, it would be a huge step for the scientific community.
47. A formal invitation will be sent via Secretariat through Group's country contacts so that they can facilitate the request for information in each Member country. This activity is to be led by Mark Liebig, Chuck Rice, and Guy Richard and sent out by mid-September 2012. The aim is to have results out to the Members by beginning of 2013.

Develop brochures for land managers and/or policy makers - USA

48. Steven Shafer presented the USA's proposal that the CRG organize a group to develop simple, one-page brochures for farmers, land managers, etc., communicating science-based information and recommended practices for reducing net greenhouse gas emissions from agricultural systems. The brochures could be put on the website to be downloaded.

49. It was suggested that the CGIAR system be engaged in this work from day one because they are involved in participatory extension. There was a question about which language(s) they should be in and who the intended target audience is. Pointing out that much of the greenhouse gas advice is actually in the form of production advice, yield, emissions intensity, profit, efficiency, etc., so there is a need to communicate in a language that is more acceptable to the end user being targeted. It was also very important to be careful that good practices are not interpreted to be applicable under all conditions.
50. It was suggested that the proposal be refined more before proceeding. All Group Members were invited to share with the Group co-chairs any examples of brochures that have been developed on greenhouse gases that could be considered.

Identification of country priorities for mitigation practices to be modelled – France (in partnership with the C/N Cross-cutting Group)

51. Jean-François Soussana proposed a Soil C&N Crosscutting Group activity to evaluate how well C/N models capture mitigation in agricultural systems, including trade-offs between greenhouse gases.
52. There was then a joint discussion between the CRG and Members of the Soil C&N Crosscutting Group to identify those cropping systems that Members would like to prioritise for modeling. Jean-François suggested that Members should identify their top 3 (or up to 5) priorities considering data availability as a criterion. A survey was handed out to CRG Members to aide in the process that sought the following information:
 - Regions (classification may come later)
 - Climate: e.g. temperate, Mediterranean, semi-arid, wet tropical, etc.
 - Soil: e.g. mineral, organic, wet, etc.
 - Crop systems: e.g. maize monoculture, typical crop rotation (specify), etc.
 - Baseline management: e.g. tillage, mineral nitrogen, crop residues, etc.
 - Mitigation options: e.g. catch crops, no-till, nitrogen fertilizer type, legumes, etc.
 - Are Tier 1, 2 or 3 data available?
 - Short term or long term datasets?
53. There was a question regarding the use of 'Tier 1, 2, 3'. It was clarified that it was best to think about it as Tier 3 including all greenhouse gas fluxes, all management and production variables, most soil, climate, environment data, mitigation options compared; Tier 2 including one or two greenhouse gas fluxes measured, soil, climate and management measured; Tier 1 including soil, climate and production data but no greenhouse gas measurements.
54. It was proposed that the Soil C&N Cross-cutting Group would conduct the same exercise with the other Research Groups, and would seek policy input from all Alliance Council Members.

SUMMARY OF OUTCOMES AND ACTION ITEMS

DNDC network

55. This activity was agreed as an addition to Component 3 of the CRG Action Plan. The UK offered to host a web event to discuss the details of the web tool, then commission initial work on the website including evolutionary tree. The objective is to have the website up and running by

early 2013. UK contacts are Luke Spadavecchia (luke.spadavecchia@defra.gsi.gov.uk) and Jagadeesh Yeluripati (j.yeluripati@abdn.ac.uk).

Testing mitigation options with models

56. This activity was agreed as part of Component 3 of the CRG Action Plan, but leadership would be by the C&N Group.
57. It was noted that the C/N model stocktake will be completed by Sylvie Recous to establish what mitigation options each model is able to deal with and whether models could deal with more options.
58. On specific interactions with the CRG for the croplands modelling exercise, Peter Grace (pr.grace@qut.edu.au) would lead this effort and would liaise with the CRG Component 3 leads Sylvain Pellerin (pellerin@bordeaux.inra.fr) and Nancy Cavallaro (ncavallaro@nifa.usda.gov).

Croplands GHG network

59. This activity was agreed as an addition to Component 1 of the CRG Action Plan. Contacts are Mark Liebig (mark.liebig@ars.usda.gov), Chuck Rice (cwrice@ksu.edu), and Guy Richard (guy.richard@orleans.inra.fr). An email invitation will be sent via the Secretariat to Group members to request information from each Member country.

Drained organic soils

60. This activity is already part of the CRG Action Plan. It was agreed that the Component 2 leads should interact with the Secretariat on how to advance this further, and get necessary clearance from the Group or Alliance as needed. It was also agreed that Component 1 and Component 3 leads should be aware of the need to include organic soils in their activities. Contacts are Lillian Øygarden (lillian.oygarden@bioforsk.no), Åsa Kasimir Klemetsson (asa.kasimir@gvc.gu.se), and Kristiina Regina (kristiina.regina@mtt.fi).

International research expert exchange

61. This activity was agreed as an addition to Component 1 of the CRG Action Plan. Ladislau Martin-Neto (martin.ladislau@yahoo.com) will lead discussion over email to define this activity further.

Agro-forestry GHG network

62. This activity was agreed as an addition to Component 1 of the CRG Action Plan. Any Members interested in participating in this activity were asked to contact Henry de Gooijer (Henry.deGooijer@agr.gc.ca). Canada will send (via the Secretariat) a formal invitation to participate to all Group Members in due course.

Water use efficiency network

63. This activity was agreed as an addition to Component 1 of the CRG Action Plan.. Canada will advance this proposal in the medium term once the agro-forestry activity is under sufficient development. In the meantime, Group Members with an interest in participating in this future activity should contact Laurie Tollefson (laurie.tollefson@agr.gc.ca).

Good practice brochures

64. It was felt that this proposal needed further development before being added to the Group work plan. In the meantime, all Members are encouraged to send to Steve Shafer (steven.shafer@ars.usda.gov) any examples of brochures they have developed for farmers and/or policy makers.

Future Meetings

65. The fifth meeting of the CRG is planned alongside the 2013 ASA-CSSA-SSSA "Tri Societies" annual meeting in Tampa, Florida, USA, 3 – 6 November 2013.
66. The Croplands Research Group was informed that the Paddy Rice Group would like to meet jointly with them in the margins of the 20th World Congress of Soil Science in Korea from June 8-13, 2014.
67. The Group will explore the possibility of holding its annual CRG meeting in Brazil in September 2014.
68. Under Component 1 in San Antonio it was agreed that technical workshops would be useful to allow researchers to learn measurement techniques and protocols, thereby increasing capability in countries that wish to develop country specific emissions factors. The Group was informed that an expert workshop on N₂O would be held in France or USA in March/April 2013 to address the N₂O chamber method and an N₂O symposium will be held at the 2013 ASA-CSSA-SSSA meeting co-sponsored by the CRG.

CONCLUSIONS

69. The next step for the Croplands Research Group is to update its Action Plan with the activities agreed at this meeting and make this available on the Alliance website.

Follow- up comment received

The following comment was received from the representatives from Spain, as a point for consideration by the Group.

70. We would appreciate if the importance of Mediterranean system and its intrinsic characteristics that affect to any mitigation practice that would like to be implemented.

APPENDIX 1: Participants List

Country	Attendees
Alliance Member Countries	
Argentina	Unable to attend
Australia	Leann Palmer: DAFF (leann.palmer@daff.gov.au) Peter Grace: Queensland University of Technology (pr.grace@qut.edu.au)
Brazil	Ladislau Martin: Embrapa, Brazil (martin.ladislau@yahoo.com) Debora Milori: Embrapa, Brazil (debora@cnpdia.embrapa.br)
Canada	Denis Angers: Agriculture and Agri-Food Canada (denis.angers@agr.gc.ca)
Chile	Unable to attend
China	Xunhua Zheng: Chinese Academy of Sciences (xunhua.zheng@post.iap.ac.cn) Tida Ge: (gtd@isa.ac.cn)
Colombia	Unable to attend
Denmark	Soren O. Petersen: Aarhus University (soren.o.petersen@agrsci.dk)
Finland	Kristiina Regina: MTT Agrifood Research (kristiina.regina@mtt.fi)
France	Jean-Francois Soussana: INRA (Jean-Francois.Soussana@paris.inra.fr) Sylvie Recous: INRA (sylvie.recous@reims.inra.fr) Sylvain Pellerin: INRA (pellerin@bordeaux.inra.fr) Pierre Cellier: INRA (cellier@grignon.inra.fr) Catherine Henault: INRA (catherine.henault@orleans.inra.fr) Guy Richard: INRA (guy.richard@orleans.inra.fr)
Germany	Heinz Flessa: vTI Institute of Agricultural Climate Research (heinz.flessa@vti.bund.de) Klaus Butterbach-Bahl: (klaus.butterbach.bahl@hiti.de)
Ghana	Unable to attend
Indonesia	Unable to attend
Ireland	Gary Lanigan: Teagasc (gary.lanigan@teagasc.ie) Mohammad Ibrahim Khalil: Environmental Protection Agency (i.khalil@epa.ie)
Italy	Claudio Mondini: Ministry of Agricultural, Food and Forestry Policies, (claudio.mondini@entecra.it) Dario Sacco: University of Turin (dario.sacco@unito.it) Roberta Farina: Roberta.farina@entecra.it Rosa Francaviglia: rosa.francaviglia@entecra.it Antonio Berti : (antonio.beriti@unipol.it) Domenico Ventrella: (domenico.ventrella@entecra.it) Pier Paolo Roggero: (pproggero@uniss.it)
Japan	Ayaka W. Kishimoto-Mo: National Institute for Agro-Environmental Sciences (mow@affrc.go.jp) Yasuhito Shirato: National Institute for Agro-Environmental Sciences (yshirato@affrc.go.jp) Shinichiro Mishima: National Institute for Agro-Environmental Sciences (shin@affrc.go.jp)
Malaysia	Unable to attend
Mexico	Unable to attend
Netherlands	Caroline van der Salm: (caroline.vandersalm@wur.nl)
New Zealand	Frank Kelliher: AgResearch (frank.kelliher@agresearch.co.nz) Joanna Sharp: The New Zealand Institute for Plant and Food Research Ltd (joanna.sharp@plantandfood.co.nz)
Norway	Lillian Øygarden: Bioforsk Norwegian Institute of Agricultural and Environmental Research (lillian.oygarden@bioforsk.no) Daniel Rasse: Norwegian Institute for Agricultural and Environmental Sciences (daniel.rasse@bioforsk.no)
Peru	Unable to attend
Philippines	Unable to attend

Republic of Korea	<i>Unable to attend</i>
Russia	<i>Unable to attend</i>
Spain	Jose Luis Rubio: CIDE-CSIC (jose.L.rubio@uv.es)
Sweden	Åsa Kasimir Klemedtsson: University of Gothenburg (asa.kasimir@gvc.gu.se) Thomas Kätterer: Swedish University of Agricultural Sciences (Thomas.katterer@slu.se)
Switzerland	Jens Leifeld: (jens.leifeld@art.admin.ch)
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