



## **Paddy Rice Research Group Meeting**

**Room 304, Tsukuba International Congress Centre, Tsukuba, Japan**

2 September 2017

# **Meeting Report**

## **OVERVIEW**

The 2017 meeting of the Paddy Rice Research Group's (PRRG) Asia sub-Group of the Global Research Alliance on Agricultural Greenhouse Gases ("the Alliance") was held at the International Congress Centre – Epochal Tsukuba, Tsukuba, Japan on 2 September 2017 alongside the 7<sup>th</sup> Alliance Council meeting and international symposium on agricultural greenhouse gas mitigation. The Alliance meeting was chaired by Japan (Dr Kazuyuki Yagi, NARO (NIAES)) as Co-Chair of the Paddy Rice Research Group.

This report is a summary of the key discussions and outcomes of the meeting. PDF's of the presentations are provided separately on Alliance's website.

## **PARTICIPANTS**

The meeting was attended by 42 participants, representing eight Member countries and partners of the Group. Several scientists from institutes of the host country also attended the meeting.

- **Alliance Members attending:** China, Indonesia, Japan, Malaysia, Philippines, Thailand, Viet Nam and Uruguay.
- **Invited Organisations:** International Rice Research Institute (IRRI), International Centre for Tropical Agriculture (CIAT).

## **MEETING OUTCOMES**

The meeting achieved the following outcomes:

- Next steps identified for supporting the three projects developed under the Reducing GHG Intensity of Rice Systems (Rice Flagship);
- Agreement to support a capability building workshop on the implementation of AWD practices;

- Agreement to develop a review document summarising mitigation options for rice systems; and
- Announcement of nominations for a third PRRG Co-Chair.

## SUMMARY OF DISCUSSIONS

### OPENING REMARKS

1. The meeting of the Paddy Rice Research Group (PRRG) Asia sub-Group was opened by Dr Yasuro Funaki, Principal Deputy Director, Ministry of Agriculture, Forestry and Fisheries, who welcomed participants to the meeting.

### UPDATE FROM THE SECRETARIAT

2. The Alliance Secretariat provided an update to the Group on activities of the Alliance since the 2016 Council meeting, including new Members and Partners and an update on expanded Research Group pages on the Alliance website.

3. The Alliance now has 48 Member Countries, with South Africa and Zimbabwe joining in the past year. Following the decisions at the 2016 Council meeting the Alliance now works with 14 Partner organisations, and at the 2017 Council meeting agreed to invite nine additional organisations to become partners of the Alliance, including:

- the Asian Development Bank;
- International Fund for Agricultural Development;
- International Soil Reference and Information Centre (ISRIC);
- Global Agribusiness Alliance (GAA);
- World Business Council on Sustainable Development (WBCSD);
- Sustainable Agriculture Initiative Platform (SAI Platform);
- International Fertiliser Development Centre (IFDC);
- Caribbean Agricultural Research & Development Institute (CARDI); and
- Forum for Agricultural Research in Africa (FARA).

4. Outcomes from the 2017 Council meeting that are of relevance to the Research Groups include the decision to complete an inventory of member capability building needs and fellowships and training events that could be used to support Alliance activities. The Research Group Co-Chairs also proposed developing regional capability building activities, which will be coordinated across all Research Groups. This would make the benefit received from these activities, for the Alliance and institutes and researchers attending, more visible. Council members have been asked to support these activities by identifying experts that could help to develop workshop programmes and deliver the workshops.

5. Recent updates to the Alliance website had provided additional space for each of the four Research Groups to showcase activities and the work of their Networks. Groups are now able to highlight key projects and outcomes, and upload meeting documents. The website now includes a resource library, so that all of the Alliance outputs and documents are located in one place and visitors to the site are easily able to search by document type and research group. At the Council meeting members agreed that all meeting documents would now be made publically accessible in the resource library, and the member's area would be removed.

## GROUP OVERVIEW

6. Dr Kazuyuki Yagi and Mr Gonzalo Zorrilla, Co-Chairs of the PRRG, provided an overview of the Group's activities to date and the outcomes from previous meetings.
7. The Co-Chairs reported on the activities of the Group at the Council meeting earlier in the week and noted the recent achievements of the Group as well as the ambitions of the Group.
8. Key achievements:
  - New partnerships with the Latin American Fund for Irrigated Rice (FLAR) and Sustainable Rice Platform (SRP).
  - Attending the SRP General Assembly and conference in Bangkok, 4-5 October 2017.
  - Update on progress of the MIRSA project,
  - Development of the Rice Flagship, including broadening the scope.
  - Preparation of a special edition for the journal *Soil Science and Plant Nutrition*.
9. Ambitions:
  - Collaborative project in the Americas supported by FONTAGRO.
  - Developing the next phase of the MIRSA project, combining management options.
  - APEC capacity building project to implement alternate wetting and drying (AWD) in Asia.
  - Publication of MRV guidelines.
  - Develop a review of mitigation options for rice production.
10. An Alliance meeting with Africa Rice will be held in The Gambia on 21 September 2017 and will be attended by Dr Yagi, the Special Representative and other Members. Several African countries have included rice mitigation activities in their nationally determined contributions (NDCs), therefore it is a good time to discuss how the PRRG can support these goals.
11. The next East Asian and South East Asian Federation of Soil Societies (ESAFS) meeting will be held 12-15 December 2017 in Thailand. This meeting will involve researchers from India, Bangladesh, and Sri Lanka that are not members of this Group, therefore this meeting is a good opportunity to encourage their participation.

## RESEARCH ACTIVITY REPORTS

12. Countries presented on national circumstances and recent research results, the presentations are provided separately to this report, and may be downloaded from the Global Research Alliance website.

## OVERVIEW OF FLAGSHIP ACTIVITIES

13. The Special Representative presented on the development of Flagships of the Alliance. Four Flagship topics were agreed to as priority activities of the Alliance at the 2015 Council meeting and a Taskforce was established to further develop each Flagship, a number of projects that would contribute and to identify the resources required including opportunities for funding. The four Flagships are:
  - Enteric Fermentation
  - Soil Carbon Sequestration
  - Greenhouse Gas Inventories

- Rice Management

14. Each Flagship has developed a number of components that identify key actions and address the same framework of inclusiveness and benefit for all members, with solution focused projects that build Member capability/capacity. Flagships are a priority action of the Alliance Strategic Plan, developed to bring greater visibility to the Alliance and Research Groups and to increase support for our activities, including resourcing of projects and in-kind support.

15. To support these Flagships and other activities of the Research Groups a range of 'Joint Programming' mechanisms were identified and presented to Council Members including Fellowships, Bilateral cooperation, Thematic Annual Programming, alignment of funding programmes and joint funding calls. Research Groups should consider how these types of mechanisms may be used to finance future work plan activities.

## **RICE FLAGSHIP**

16. The Co-Chairs provided more detail on the development of the Flagship - Reducing GHG Intensity of Rice Systems. The objective of this Flagship has broadened from the original proposal on water management and now aims to assess multiple practical measures that reduce emission intensity of rice systems, while sustaining or improving overall production efficiency. Participants from all regions contributed to the Taskforce that developed the Flagship and projects. The Taskforce identified four key components:

1. Developing solutions (water management, organic matter management, cultivar selection).
2. Improving quantification (database compilation, improved emission factors, modelling).
3. Adopting solutions (identification of suitable areas for AWD, MRV guidelines, promotion).
4. Building capabilities (workshops, coordinated networks).

17. Three projects have been developed so far to support the Flagship:

1. On farm assessment of multi-beneficial improved water management techniques, reducing costs, water use and gas emissions in America's rice systems.
2. Multi-country on-farm assessment of multi-beneficial integrated management techniques in the rice sector of Asia.
3. Identification of high yielding rice cultivars as related to low methane (CH<sub>4</sub>) emissions.

18. The project proposal on water management techniques for the extensive rice production system, most common to the Americas, has been submitted to a regional fund in Latin America (FONTAGRO). The full proposal is now being developed for second stage assessment.

19. The project on integrated management techniques in Asian rice systems considers reduction of greenhouse gas emissions when a combination of management practices are used. This would build on the post-MIRSA activities, and if funded would begin in April 2018.

20. The rice cultivar project proposed would screen existing rice varieties for those that have low methane emissions, with the same or higher yields. The project does not have an identified leader or funding opportunities as yet.

21. The Group was reminded that it is not too late to contribute, including supporting and leading the three proposals developed and also by developing additional proposals that can contribute to the Flagship. The above projects only cover the first component 'developing solutions', additional projects are needed to expand the scope of activities to the other three Flagship components.

## Discussion

22. It was suggested that the Group should complete a review of rice emission factors that are used by each country, how countries have improved emission factors from Tier 1 to Tier 2, and the relevant research countries have undertaken. This would contribute to component two, improving quantification, and would also link to the agricultural greenhouse gas inventory Flagship.
23. The IPCC emission factor methodology currently under revision and regional default emission factor for rice is expected to be developed for Asia. Papers that can be considered for inclusion in this report must be published by July 2018.
24. At the JIRCAS-NARO symposium ahead of this meeting a presentation had been given on the Workshop on Greenhouse Gas Inventories in Asia (WGIA) activity that many countries would already contribute to, although different agencies may be involved. This is a group that the PRRG should communicate and share activities with, particularly for component two of the Flagship.
25. The idea of improved modelling to contribute to the development of inventories was also raised. A suggested project was to develop a tool that helped countries move their inventories from Tier 2 to Tier 3.
26. The Group mentioned that project two –integrated management techniques should consider new fertiliser types and application options, biochar and compost should be considered as should soil; inversion techniques which link to improved soil carbon sequestration.
27. During the discussion about project three on low emissions varieties, it was noted that CCAFS have completed a literature review of about 30 articles on this topic. This review can be provided to the Group and support the initial development of the project.

## **BEST PRACTICES DOCUMENT**

28. The Group discussed the idea to develop a best practices and emerging options document, similar to one the Livestock Research Group has produced. This document would outline management practices that reduce greenhouse gas emissions from rice production systems and summarise available and upcoming mitigation technologies.
29. The Group agreed that a summary of available options that compare mitigation potential, ease of implementation and costs would help to inform the development of further flagship projects and be an important activity for the PRRG. A decision was made to develop this document ahead of the next Group meeting.

## **APEC PROJECT**

30. Japan, together with Mexico and New Zealand, has submitted a concept note to an Asia Pacific Economic Cooperation (APEC) fund to develop capacity building for management technologies in the rice sector. The objective of the proposal is to provide rice producers and growers with understanding of technologies available to reduce greenhouse gas emissions from rice production, including water management (alternate wetting and drying practice) and fertiliser management.
31. If funded, the activity would begin in early 2018 by selecting experts from the APEC economies involved. The capacity building workshops would be held in the middle of 2018 and a final report submitted at the end of 2018.
32. The Group noted that the timing of this project may also coincide with the development of the water management project proposed for Latin America, and that several Latin American countries are part of APEC. Non-APEC countries could be funded to attend using a different mechanism.

33. The Group should consider the experts that should be invited to attend, suggestions included social scientists, extension workers, industry, private companies, and irrigation workers/managers etc. who would have experience managing the transfer of knowledge to farmers. The group should also think about how to manage the activity, as the funding is only for one year, so the project developed needs to make the best use of the funding. Members will be contacted and asked to provide more input if the project is funded, this should be known towards the end of September 2017.

## **DEVELOPMENT OF MRV GUIDELINES**

34. To follow up from the publication of guidelines for measuring greenhouse gases from paddy rice, measurement, reporting and verification (MRV) guidelines are now being developed. MRV helps to ensure the accuracy of greenhouse gas emissions compared to a baseline. Countries will need to have good MRV systems in place to demonstrate the impact of mitigation practices proposed to meet international climate change targets and NDCs. The guidelines are currently undergoing peer review, and are expected to be published online from February 2018.

35. The Group noted that CCAFS had completed MRV guidelines as part of the SAMPLES project, and with the Livestock Research Group for the Livestock sector. The authors involved could be asked to review these guidelines.

## **MIRSA**

36. Participants of the greenhouse gas mitigation in irrigated rice systems in Asia (MIRSA) project presented on the additional research components of this project and the final reports of site specific findings and outcomes. The presentations are provided separately to this report.

### Synthesis paper summary

37. Alternate wetting and drying (AWD) practices were compared at four different sites, the Philippines, Vietnam, Thailand and Indonesia. Each site was comparing safe AWD (drainage to 15cm below soil surface) and a site specific practice, alongside a continuously flooded field. Although it was noted that AWD was not able to be practice the sites from Thailand and the Philippines as high rainfall meant that the sites were never able to drain.

38. The average methane emissions from all sites (based on the site specific option) were found to be slightly higher than the default emissions factor provided by the IPCC, although not significantly higher. The sites that were able to practice AWD found that they were able to reduce water use and maintain the same yield as well as reduce methane emissions. A reduction in methane emissions was not always seen at the site where heavy rainfall prevented soils drying during a drainage event.

## **MEETING OUTCOMES**

39. Outcomes:

- Reducing GHG Intensity of Rice Systems Rice Flagship – three projects are now under development:
  1. Water management options in the Americas – contact Gonzalo Zorrilla if you are interested in contributing.
  2. Integrative management practices in Asian rice systems – tentative funding decision will be known early next year, while the final decision will be made next spring. Additional activities are still able to be included, contact Dr Kazuyuki Yagi.

3. Low emission varieties – the project still needs a coordinator, contact the Co-Chairs if you can support this project.
  - Capability development, if funded more information on the APEC proposal will be provided to participants in December 2017.
  - Development of a review document summarising mitigation options for rice systems, to be completed by next year.
  - Databases, members are requested to provide data to the MAGGnet group.
  - Fellowship, the Group should identify short activities, to support the Flagship or other PRRG projects, able to be completed in 3-6 months. The Fellowship opens in November 2017 and projects must be identified before this.
  - The Paddy Rice Research Group is looking for a third Co-Chair that would help to lead the Group. Interested members should contact the Co-chairs.
40. Next Meetings:
- The Group did not finalise the time and location for the next meeting of the Asia sub-Group.
  - The America sub-Group expect to meet alongside the World Congress of Soil Science, 12-17 August 2018 held in Rio de Janeiro, Brazil.

# APPENDIX 1: Participants List

Country	Attendees
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