



## **Paddy Rice Research Group Asia Sub-Group Meeting**

**Room "DRUPADI", The Sintesa Hotel, Bali, Indonesia**

12 October 2019

# **Meeting Report**

## **OVERVIEW**

1. The 2019 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 The Sintesa Hotel, Bali, Indonesia on 12 October 2019 alongside the 9<sup>th</sup> annual Alliance Council meeting and the 5<sup>th</sup> annual Global Science Conference on Climate Smart Agriculture. The meeting was chaired by Japan (Dr. Yasukazu Hosen, NARO (NIAES)) as Co-Chair of the Paddy Rice Research Group and closed by Indonesia as host for the meeting (Mr. Mas Teddy Sutriadi, IAERI).
2. This report is a summary of the key discussions and outcomes of the meeting. PDF's of the presentations are provided separately on the Alliance's website.

## **PARTICIPANTS**

3. The meeting was attended by 23 participants, representing six Member countries and partners of the Group (appendix 1). Senegal observed the meeting as co-chair of the PRRG and lead actor in the establishment of the Africa sub-Group. Several scientists from institutes of the host country also attended the meeting.
  - Alliance Members attending: China, Indonesia, Japan, Malaysia, Philippines, Senegal and Viet Nam.
  - Invited Organisations: International Rice Research Institute (IRRI).

## **OUTCOMES**

4. The meeting achieved the following outcomes:
  - Noted that Senegal (Dr. Laure Tall, ISRA) has been confirmed as one of three PRRG co-Chairs.
  - Clarification to the Asia sub-Group on new criteria and process of Flagship project as agreed by the Council.
  - Agreement to consider how to facilitate international sharing of data, methodologies, and expertise across the sub-Groups, in the quantification and mitigation of greenhouse

gases in rice production and how this might be established as a PRRG Flagship facilitating sub-Groups connection.

- Update on progress for the MIRSA-3 Project, FONTAGRO project in increasing farmer adoption of alternate wetting and drying best management practices and the Enhancing sustainable rice production in Latin America (UIUC) project.
- Discussed increasing involvement in the CLIFF-GRADS Programme across the sub-Groups through both hosting students and advertising to students, short-term scientific training and research opportunities.
- Discussed the proposed ACTIONS-RICE collaborative project in the Latin America, which was seeking funding support from the Science for Nature and People Partnership (SNAPP).
- Discussed participation of more countries across a wider geographical scope; continued growth of Africa participation will be beneficial to the Group.
- Initiated the conversation to establish new initiatives in Africa under the new sub-Group, and facilitating research collaboration across the wider PRRG network.

5. Next Meetings:

- The Group will consider an accessible location to host a joint PRRG-wide meeting in 2020 for all three sub-Groups, Asia, the Americas and the soon to be established Africa sub-Group. The Group may wish to hold this alongside an international rice research forum but should carefully consider whether this may encourage wider participation, or have unintended consequences through limiting the time available to representatives for participation in the joint meeting. The meeting would need to be at least two full days given updates across the three regions, and to facilitate development of PRRG wide projects and collaboration.
- The Group did not finalise the time and location for the next meeting of the Asia sub-Group.
- The next America sub-Group meeting location and date is TBC.

## SUMMARY OF DISCUSSIONS

### OPENING REMARKS

6. The meeting of the Paddy Rice Research Group (PRRG) Asia sub-Group was opened by Dr. Yasukazu Hosen, Institute for Agro-Environmental Sciences (NIAES), National Agriculture and Food Research Organization (NARO), who welcomed participants to the meeting.

### UPDATE FROM THE SECRETARIAT

7. The Alliance Secretariat provided an update to the Group on activities of the Alliance since the 2018 Council meeting, including new Members and Partners.

8. The Alliance now has 58 Member Countries; six African members, Cameroon, Ethiopia, Eswatini, Malawi, Mongolia and Uganda joined in the past year as a result of three regional Low Emissions Livestock Development workshops held in East Africa, West and Central Africa and Southern Africa. The Alliance now works with 20 Partner organisations, and the Council agreed to invite the Greenhouse Gas Management Institute (GHGMI) to become partner to the Alliance in the recent 9th Annual Council Meeting. The four partners that have joined since the 2018 Asia PRRG sub-Group meeting are:

- Caribbean Agricultural Research & Development Institute (CARDI);
- The Agricultural Model Intercomparison and Improvement Project (AgMIP);
- International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM); and
- The European Union (EU).

9. Outcomes from the 2019 Council meeting that are of relevance to the Research Groups include the following:

- Indonesia took on role of Chair with Australia confirmed as Vice-Chair.
- The terms of reference for the Enhanced Secretariat and the Alliance Special Representative were noted as approved.
- The proposed new framework for Flagship projects was accepted by the Council. A Flagship project must now ensure clear project outcomes by a specified deadline, be of global relevance, and encourage multilateral participation. Under the new framework, existing Flagships will be reviewed for alignment. More information of flagship definition is included in the Flagship Framework section below.
- The Council proposed that the Circular Food Systems Flagship taskforce be established as a Research Group Network, in light of the re-framed criteria for Flagship Projects. The Integrative Research Group (IRG) were asked to consider hosting this new Network.
- The Secretariat will update the Operational Plan to reflect completed and new or consolidated actions from the previous Council meeting. Further, the Communications Strategy document has been adopted.
- The Council also established a Working Group to develop the 2021-25 Strategic Plan which will replace the current 2016-20 Strategic Plan. The Council members in the Working Group are Australia, Canada, China, Germany, Indonesia, Netherlands, New Zealand, Tunisia and Zimbabwe. The working group will give consideration to synergies between mitigation and adaptation practices and technologies and develop a communications action plan.

10. Research group activities that are of relevance for the Paddy Rice Research Group include the following:

- The Livestock Research Group (LRG) held three low emissions livestock development capability building regional workshops in East Africa (July 2018), West and Central Africa (March 2019) and Southern Africa (July 2019), which has since resulted in six new member countries for the Alliance. The increasing commitment to and involvement in Alliance activities by African states will be crucial in the successful establishment of a PRRG Africa sub-Group.
- The LRG is establishing 'roster' of experts to utilise for dissemination of knowledge and skills specifically in the context of greenhouse gas inventories, for monitoring, reporting and verification (MRV) and Nationally Determined Contributions (NDC's) which is also of relevance for the PRRG group who may wish to consider how expertise can be shared in a similar way across the sub-Groups.
- The MRV platform ([www.agMRV.org](http://www.agMRV.org)), established by the LRG, shares case studies, analyses, databases, methodologies, technical guidelines and emission factors, among other resources for quantification of agricultural greenhouse gases. There are a number of resources specifically related to rice emission measurement and quantification and sub-Groups of the PRRG should be aware of how they may utilise this platform and potentially contribute to the platform through a joint cross sub-Group activity.

- The Integrative Research Group (IRG) established a refocused Inventories and Nationally Determined Contributions Network which is of relevance to all Research Groups, and brings together 116 members from 57 member countries.
  - The IRG is also hosting a series of webinars, with three successful webinars to date, of over one hundred registrants each. The PRRG may wish to consider how they might utilise this webinar series for either disseminating knowledge across regions, or for seeking data or information to fill knowledge gaps. Topics of the webinar series have included linking with global soil carbon initiatives, carbon offset method in Australia, impacts of climate change on soil carbon, and greenhouse gas inventories and NDCs.
11. Website updates of relevance to the Group.
- The Alliance [PRRG web page](#) will be updated to reflect the new Africa sub-Group. Group highlights have not been updated in some time and the Group is asked to provide a summary of Group achievements over the past year to increase activity visibility for the Group via the Alliance webpage.
  - In addition, any activity of relevance for publication on the website can be mailed to [secretariat@globalresearchalliance.org](mailto:secretariat@globalresearchalliance.org) for consideration as either publication on the PRRG web page, or in the [Updates and Events](#) web page.

## Flagship Project Guidelines

12. The following criteria form the basis for which a proposed Flagship Project will be assessed, and recommended to Council for endorsement, including project scope, participation, research and resourcing. A Flagship Project template (appendix 2) is to be completed by the Flagship Project lead and once endorsed, the Flagship will be profiled on the Alliance website. Once completed, final outcomes will be presented to the Council.

13. Projects that do not meet the criteria to be assessed as a flagship project by the GRA Council may still be GRA projects. The benefit of a project established as a PRRG Flagship project is the increased visibility of the Flagship among the GRA network. More details and examples are included in appendix 2.

- **Project Scope:** Project timeline (defined end date) specified, project outcome defined and globally applicable.
- **Project Participation:** The project will benefit from Alliance wide collaboration and where possible global participation in their delivery. The project will have an identified community of experts within Alliance Membership (i.e. be proposed by one of the Research Group's, or their Networks, or have key Member's act as coordinators if the flagship project focuses on a cross-cutting issue).The project will provide a range of collaboration opportunities, including low cost e.g. data, sample or knowledge sharing.
- **Research:** It is proposed that flagship projects develop new knowledge, validate approaches, methods or hypotheses; and have high scientific impact.
- **Resourcing:** Flagship project leaders should be clearly identified and resourced to complete the project within the specified time-frame. Research Group Co-Chairs should not bear the responsibility of leading Flagship projects, except presenting updates at the annual Council meeting, if required.
- GRA Flagship Projects must identify at least five Council Champions, Members and Partners, consisting of at least three GRA Member countries. A minimum of 30 percent of required funding must be confirmed for the Flagship project lead and core project activities (cash or in kind contributions of total project costs). Proposed funding mechanisms for additional

activities and contributions identified (i.e. fellowship fund, workshop funding, or research call).

## CLIFF-GRADS Programme

14. The CLIFF-GRADS Programme is a joint initiative of the Climate Change, Agriculture, and Food Security (CCAFS) programme of the CGIAR and the Global Research Alliance on Agricultural Greenhouse Gases that supports short research visits of not more than 6 months, to not more than \$12,000 USD for PhD students from developing countries.

15. The CLIFF-GRADS Programme is a platform that Group members should consider advertising existing research projects that are under-resourced for short-term scientific training and research stays on topics related to the measurement and management of greenhouse gas emissions and carbon storage in agricultural systems.

16. The rigorous application process ensures PhD students of a high calibre and the Programme fosters capability building in developing nations, generational knowledge transfer and bilateral collaboration. Researchers and project leaders can consider submitting a research opportunity for consideration for the next call for student applications which will happen in early 2020. Researchers may contact [cliffgrads@globalresearchalliance.org](mailto:cliffgrads@globalresearchalliance.org) for more information.

17. In 2018 CIAT hosted Abubakar Halilu of Nigeria for the research project: “More Rice with Lower Emissions and Lower Water Consumption”.

18. In 2019, the following research opportunities relating to rice have been or are being hosted:

- Lai Lai from Myanmar, hosted by IRRI for *“Compiling a structured Rice Policy Information Portal and demonstrating its potential use in mitigation projects.”*
- Noriel Angeles from Philippines, hosted by IRRI for *“Toward low methane-emitting rice varieties.”*
- Paul Soremi of Nigeria, hosted by CIAT for *“Turning to rice cultivars for solving the CH4 puzzle in irrigated rice systems.”*

19. For 2020, five rice projects were submitted in the third round for CLIFF-GRADS scholarship with student applications are currently under review.

- *“Post-harvest management in rice paddy fields for carbon budget optimization”*, IRTA-Marine and Continental Waters Program, Spain.
- *“The GHG emission potential of the SRP practices for sustainable rice cultivation”*, IRRI, Viet Nam.
- *“Assessing the economic and climate impacts of improved post-harvest practices along the rice value chain”*, IRRI, Viet Nam.
- *“AWD suitability mapping for selected rice growing regions in Thailand”*, IRRI, Viet Nam
- *“Temporal patterns of methane emissions from rice in the Vietnamese Mekong Delta: Impact of ambient meteorological conditions”*, IRRI, Viet Nam.

## PRRG ASIA SUB-GROUP UPDATE

20. Dr Yasukazu Hozen, one of three Co-Chairs of the PRRG, provided an overview of the Group’s activities to date, outcomes from previous meetings, reported on the activities of the Group at the Council meeting earlier in the week, as well as noting recent achievements and ambitions of the Group.

21. Key achievements:

- The third co-Chair of the PRRG is Senegal (Dr. Laure Tall, ISRA).
  - Report completed and two successful workshops concluded in 2018 for the APEC Project: [“Capacity Building on management Technologies for Climate Smart Rice Cultivation in the South-East Asian and Latin America Rice Sector.”](#)
  - Moving to the second phase of the MIRSA project (“MIRSA-3” project”), which has been submitted for consideration by the Council as a Flagship under the new framework.
22. Update on ambitions:
- Continued progress with existing projects; MIRSA-3, FONTAGRO project in increasing farmer adoption of alternate wetting and drying best management practices and the Enhancing sustainable rice production in Latin America (UIUC) project.
  - Increased involvement in the CLIFF-GRADS Programme across the sub-Groups through both hosting students and advertising to students, short-term scientific training and research opportunities.
  - Proposed ACTIONS-RICE collaborative project in the Latin America, seeking support from the Science for Nature and People Partnership (SNAPP).
  - Participation of more countries across a wider geographical scope; continued growth of Africa participation will be beneficial to the Group.
  - Establishing new initiatives in Africa under the new sub-Group, and facilitating research collaboration across the wider PRRG network.

## INDIVIDUAL PROJECT SUMMARIES

### APEC Capability Building

23. The purpose of the project was 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. This project was funded by APEC and supported by GRA member countries of APEC member economies, overseen by MAFF of Japan<sup>1</sup>, proposed by Japan, Mexico and New Zealand, and co-sponsored by Chile, Malaysia, Philippines, Thailand and Viet Nam.

24. The first workshop, “Rice Landscapes and Climate Change – Options for mitigation in rice-based agroecosystems and scaling-up of climate-smart rice cultivation technologies in Asia” held in Bangkok, Thailand, had 120 attendees from Chile, China, Indonesia, Japan, Malaysia, Philippines,

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<sup>1</sup> MAFF of Japan: Ministry of Agriculture, Forestry and Fisheries, <http://www.maff.go.jp/e/>.

Thailand and Viet Nam of the following organisations / networks: FAORAP<sup>2</sup>, APEC<sup>3</sup>, JGSEE/KMUTT<sup>4</sup>, AEGIS<sup>5</sup>, ASEAN-CRN<sup>6</sup>, NARO<sup>7</sup>, GRA, GIZ<sup>8</sup>, SRP<sup>9</sup>, IRRI<sup>10</sup>, MAFF of Japan, and WBCSD<sup>11</sup>.

25. A Capacity Building workshop was held in Parral in Chile with 30 attendees from Brazil, Chile, Costa Rica and Japan.

### **MIRSA-3 (2018 –2023)**

26. The Mitigation in Rice Systems in Asia (MIRSA) Project’s purpose was to develop multi-beneficial integrated rice cropping techniques that improve rice cultivation of Southeast Asia for low emissions, paddy soil conservation, and stable productivity.

27. The MIRSA-3 Project is the second phase targeted at “greenhouse gas emission reduction, soil carbon and nitrogen yield maintenance and long-term estimation.

28. The fund contributor is the Ministry of Agriculture, Forestry and Fisheries of Japan. The project champions are Indonesia, Japan, Philippines, Viet Nam and CGIAR’s IRRI.

29. A product of the former project: “Minamikawa et al. (2015) Guidelines for measuring CH<sub>4</sub> and N<sub>2</sub>O emissions from rice paddies y a manually operated closed chamber method” was introduced in the “2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories”.

### **FONTAGRO Increasing Adoption of AWD Practices (2018 – 2021)**

30. The purpose of the FONTAGRO Project is to improve adoption of alternate wetting and drying (AWD) by farmers, through validation of AWD practices in farmers’ fields in South America.

31. The Project is funded by FONTAGRO with participation from Colombia, Perú, Chile, CIAT, and the industry collective FLAR.

### **Enhancing sustainable rice production in Latin America (2019 – 2020)**

32. The purpose of the Enhancing sustainable rice production in Latin America Project, funded by the University of Illinois (UIUC) International Joint Research Program, is to benchmark the economic and environmental sustainability of rice production in Latin America using the recently established Sustainable Rice Platform (SRP). Participants include the United States, CIAT, IRRI, CCAFS, Peru, Brazil, AfricaRice and FLAR.

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<sup>2</sup> FAORAP: Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, <http://www.fao.org/asiapacific/en/>.

<sup>3</sup> APEC: Asia-Pacific Economic Cooperation, <https://www.apec.org/>.

<sup>4</sup> JGSEE/KMUTT: [http://www.jgsee.kmutt.ac.th/v2/detail.php?content\\_id=372](http://www.jgsee.kmutt.ac.th/v2/detail.php?content_id=372).

<sup>5</sup> AEGIS: <http://www.aegisnet.co.nz/>.

<sup>6</sup> ASEAN-CRN: ASEAN Climate Resilience Network, <https://asean-crn.org/>.

<sup>7</sup> NARO: Japan’s National Agriculture and Food Research Organization, <http://www.naro.affrc.go.jp/english/about-naro/index.html>.

<sup>8</sup> GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, <https://www.giz.de/de/html/index.html>.

<sup>9</sup> SRP: Sustainable Rice Platform, <http://www.sustainableice.org/>.

<sup>10</sup> IRRI: International Rice Research Institute, <https://www.irri.org/>.

<sup>11</sup> WBCSD: World Business Council for Sustainable Development, <https://www.wbcsd.org/>.

## ACTIONS-RICE

33. The proposal ACTIONS-RICE sought funding from Science for Nature and People Partnership (SNAPP), to accelerating the transition towards sustainable rice production in Latin America and the Caribbean. The project would have country participation from Uruguay, The United States, Chile, Brazil, Perú, Colombia, Costa Rica, Nicaragua, Ecuador and Argentina and partner participation from FLAR, The Nature Conservancy, FedeArroz of Venezuela, and the Danac Foundation of Venezuela.

34. The project was not approved, however is still seeking funding and any potential sources may be communicated to Ngonidzashe Chirinda by emailing [n.chirinda@cgiar.org](mailto:n.chirinda@cgiar.org).

## COUNTRY REPORTS AND RESEARCH ACTIVITY

35. 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 as follows.

### 36. General Activity Updates

- PRRG Co-Chairs Update<sup>12</sup>
- GRA Secretariat Update<sup>13</sup>

### 37. Country Updates

- China<sup>14</sup>, Indonesia<sup>15</sup>, Japan<sup>16</sup>, Malaysia<sup>17</sup> and Philippines<sup>18</sup>
- Viet Nam also provided a Country Update which is not uploaded to the GRA website. The Country Representative listed in Appendix 1 may be contacted directly for this content.

### 38. Project Updates

- MIRSA-3<sup>19</sup>
- Hue University of Agriculture and Forestry (HUAF)<sup>20</sup>
- Additional project updates were given by National Agriculture and Food Research Organization (NARO), Indonesian Agricultural Environment Research Institute (IAERI), and Philippine Rice Research Institute (PhilRice). Representatives listed in Appendix 1 may be contacted directly for content.

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<sup>12</sup> Co-Chairs Report: <https://globalresearchalliance.org/wp-content/uploads/2019/12/Co-Chairs-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>

<sup>13</sup> Secretariat Update: <https://globalresearchalliance.org/wp-content/uploads/2019/12/PRRG-GRA-Secretariat-Update-October-2019-Indonesia.pdf>

<sup>14</sup> China: <https://globalresearchalliance.org/wp-content/uploads/2019/12/China-Country-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>

<sup>15</sup> Indonesia: <https://globalresearchalliance.org/wp-content/uploads/2019/12/Indonesia-Country-Report-2019-PRRG-Asia-sub-group.pdf>

<sup>16</sup> Japan: <https://globalresearchalliance.org/wp-content/uploads/2019/12/2019-Japan-Country-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>

<sup>17</sup> Malaysia: <https://globalresearchalliance.org/wp-content/uploads/2019/12/Malaysia-Country-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>

<sup>18</sup> Philippines: <https://globalresearchalliance.org/wp-content/uploads/2019/12/Philippines-Country-Report-PRRG-Asia-sub-group.pdf>

<sup>19</sup> MIRSA Project: <https://globalresearchalliance.org/wp-content/uploads/2019/12/MIRSA-Project-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>

<sup>20</sup> HUAF Project: <https://globalresearchalliance.org/wp-content/uploads/2019/12/HUAF-Project-Report-PRRG-Asia-sub-Group-Meeting-Indonesia.pdf>



## APPENDIX 1: Participants List

Country	Attendees
<b>Alliance Member Countries</b>	
China	Xiaobo Qin: IESDA <sup>21</sup> , CAAS <sup>22</sup> ( <a href="mailto:qinxiaobo@caas.cn">qinxiaobo@caas.cn</a> )
Indonesia	Ali Pramono: IAERI <sup>23</sup> ( <a href="mailto:ali_pramono@yahoo.com">ali_pramono@yahoo.com</a> ) Titi Sopiawati: IAERI ( <a href="mailto:tsophiawati@yahoo.co.id">tsophiawati@yahoo.co.id</a> ) Helena Lina Susilawati: IAERI ( <a href="mailto:helenalina_s@yahoo.com">helenalina_s@yahoo.com</a> ) Mas Teddy Sutriadi: IAERI ( <a href="mailto:teddysoma@yahoo.com">teddysoma@yahoo.com</a> ) Eni Yulianingsih: IAERI ( <a href="mailto:eniyulianingsih@gmail.com">eniyulianingsih@gmail.com</a> )
Japan	Miwa Arai: NIAES <sup>24</sup> , NARO <sup>25</sup> ( <a href="mailto:araimiwa@affrc.go.jp">araimiwa@affrc.go.jp</a> ) Yasukazu Hosen: NIAES, NARO ( <a href="mailto:yhosen@affrc.go.jp">yhosen@affrc.go.jp</a> ) Kazuyuki Inubushi: Chiba University ( <a href="mailto:inubushi@faculty.chiba-u.jp">inubushi@faculty.chiba-u.jp</a> ) Nobuko Katayanagi: NIAES, NARO ( <a href="mailto:katayan@affrc.go.jp">katayan@affrc.go.jp</a> ) Shoji Matsuura: NIAES, NARO ( <a href="mailto:shojim@affrc.go.jp">shojim@affrc.go.jp</a> ) Kazunori Minamikawa: JIRCAS <sup>26</sup> ( <a href="mailto:minakazu@affrc.go.jp">minakazu@affrc.go.jp</a> ) Yasuhito Shirato: NIAES, NARO ( <a href="mailto:yshirato@affrc.go.jp">yshirato@affrc.go.jp</a> ) Rota Wagai: NIAES, NARO ( <a href="mailto:rota@affrc.go.jp">rota@affrc.go.jp</a> ) Naoya Yamamoto: AFFRCS <sup>27</sup> , MAFF <sup>28</sup> ( <a href="mailto:naoya_yamamoto940@maff.go.jp">naoya_yamamoto940@maff.go.jp</a> )
Malaysia	Mohammed Hariz Bin Abdul Rahman: AERC <sup>29</sup> , MARDI <sup>30</sup> ( <a href="mailto:hariz@mardi.gov.my">hariz@mardi.gov.my</a> )
Philippines	Wilfredo Collado: PhilRice <sup>31</sup> ( <a href="mailto:wb.collado@philrice.gov.ph">wb.collado@philrice.gov.ph</a> )
Senegal	Mbaye Diop: ISRA <sup>32</sup> ( <a href="mailto:mbaye.diop@isra.sn">mbaye.diop@isra.sn</a> )
Viet Nam	Nghia Hoang: HUAF <sup>33</sup> ( <a href="mailto:hoangtrongnghia@huaf.edu.vn">hoangtrongnghia@huaf.edu.vn</a> ) Hoa Tran: HUAF ( <a href="mailto:trandanghoa@huaf.edu.vn">trandanghoa@huaf.edu.vn</a> )
<b>Alliance Secretariat:</b>	
Hazelle Tomlin, New Zealand Ministry for Primary Industries ( <a href="mailto:hazelle.tomlin@mpi.govt.nz">hazelle.tomlin@mpi.govt.nz</a> )	
<b>Invited Participants</b>	
IRRI: Olivyn Angeles ( <a href="mailto:o.angeles@irri.org">o.angeles@irri.org</a> ), Ryan Romasanta ( <a href="mailto:r.romasanta@irri.org">r.romasanta@irri.org</a> )	

<sup>21</sup> IESDA: Institute of Environment and Sustainable Development in Agriculture

<sup>22</sup> CAAS: Chinese Academy of Agricultural Sciences

<sup>23</sup> IAERI: Indonesian Agricultural Environment Research Institute

<sup>24</sup> NIAES: Institute for Agro-environmental Sciences

<sup>25</sup> NARO: National Agriculture and Food Research Organization

<sup>26</sup> JIRCAS: Japan International Research Center for Agricultural Sciences

<sup>27</sup> AFFRCS: Agriculture, Forestry and Fisheries Research Council Secretariat

<sup>28</sup> MAFF: Ministry of Agriculture, Forestry and Fisheries of Japan

<sup>29</sup> AERC: Agrobiodiversity and Environment Research Center

<sup>30</sup> MARDI: Malaysian Agricultural Research and Development Institute

<sup>31</sup> PhilRice: Philippine Rice Research Institute

<sup>32</sup> ISRA: Institut Sénégalais de Recherches Agricoles

<sup>33</sup> HUAF: University of Agriculture and Forestry, Hue University

## Appendix 2: Flagship Project Template

### GRA Flagship Project Template

**Title:**

**Leader:**

**GRA Council Champions:** *list the names of at least 5 GRA Members and Partners (including at least 3 Member countries)*

- 1.
- 2.
- 3.
- 4.
- 5.

**Countries involved:**

**Start date and project length:**

**Brief description of project:**

**Key partners and existing resources:**

**Benefits and outcome from Flagship project:**

**Further Resourcing needs:**

**Resourcing mechanisms:**

**Linkages:**

## **Flagship Criteria**

### *Project Scope*

1. Project timeline (defined end date) specified.
2. Project outcome defined.
3. Globally applicable.

### *Project Participation*

4. Benefits from GRA wide collaboration.
5. Provides a range of collaboration opportunities – including low cost e.g. data, sample or knowledge sharing.

### *Research*

6. Will the project generate new knowledge, high scientific impact.
7. Identified community of experts within the GRA Membership (i.e. proposed by a Research Group or Network – or key coordinators identified if cross-cutting).

### *Resourcing*

8. Flagship project lead identified.
9. Funding confirmed for Flagship project lead and core project activities (Minimum 30%, cash or in kind contributions of total project costs).
10. Proposed funding mechanisms for additional activities and contributions identified (i.e. fellowship fund, workshop funding, or research call).

## **Proposed Process**

1. GRA Flagship Project template to be completed by the lead.
2. The GRA Flagship Project must identify at least five Council Champions, Members and Partners, consisting of at least three GRA Member countries.
3. Council representatives to assess proposed Flagship projects using the criteria (below), and agree on the GRA Flagship projects to endorse.
4. GRA Flagship Projects will be profiled on the GRA website, and once complete final outcomes will be presented to the Council.

## **Example GRA Activity relevant as Flagship Project**

Some examples of projects that would meet the GRA Flagship criteria follow.

### **Global Rumen Census**

The GRC is the most extensive exploration of rumen microbial communities to date, representing 742 samples from 32 animal species from 35 countries, and supported by 140 scientists from 73 research institutions worldwide. A key finding of the GRC was that similar bacteria and archaea dominated in nearly all samples, and that diet is a key driver of microbial-community structure. The GRC was a collaboration among members of the Rumen Microbial Genomics Network ([www.rmgnetwork.org](http://www.rmgnetwork.org)).

### **Hungate1000**

Building on the results of the GRC, the Hungate1000 project used the culture resources of multiple rumen microbiology laboratories around the world (57 researchers, from 14 research organisations in nine countries) to develop a reference set of 501 rumen-microbial genome sequences and cultures. The Hungate1000 has captured almost all cultured rumen bacterial and archaeal species that have been taxonomically characterized and several as yet uncharacterized strains belonging to novel species and genera. It represents the single largest effort to provide a catalogued and curated culture and genome resource for rumen microbes. The Hungate1000 was a collaboration among members of the Rumen Microbial Genomics Network ([www.rmgnetwork.org](http://www.rmgnetwork.org)).

## **MAGGnet**

In 2012, a GHG research network referred to as MAGGnet (Managing Agricultural Greenhouse Gases Network) was established within the Croplands Research Group of the Global Research Alliance on Agricultural Greenhouse Gases (GRA). With involvement from 46 alliance member countries, MAGGnet seeks to provide a platform for the inventory and analysis of agricultural GHG mitigation research throughout the world. To date, metadata from 315 experimental studies in 20 countries have been compiled using a standardized spreadsheet.

MAGGnet has served to leverage limited resource investments within individual countries to produce an inclusive, shared meta-database for use by all GRA-member countries. MAGGnet occupies a unique niche among GHG networks given its geographical domain (global) and intended focus. With time and continued effort, MAGGnet can serve to further GHG mitigation science through new collaborations among contributing members.

<https://www.tandfonline.com/doi/full/10.1080/17583004.2016.1180586>

## **CEDERS**

Known as 'CEDERS', this new project aims to: develop databases to evaluate dietary mitigation strategies (including digestion and excretion) and GHG emissions and undertake experiments to fill high-priority knowledge gaps on dietary effects on ruminant manure emissions. It will evaluate consequences of dietary mitigation measures on emissions on selected farm cases with a modelling platform, improve farm accounting and national inventory methodologies to capture effects of dietary mitigation measures and disseminate the implications of findings to end-users of GHG accounting and inventory.

CEDERS initially involved scientists from 10 countries and is being expanded to include Post-Docs in Latin America and South East Asia to increase its global relevance. This additional work will help identify region-specific feeds that could feasibly offer the most significant emissions reductions and develop Ym values for specific feeds suitable for inclusion in advanced national GHG inventories to help better quantify enteric methane emissions and, specifically, capture the impact of local diets and changes in diets on emissions.