

# GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

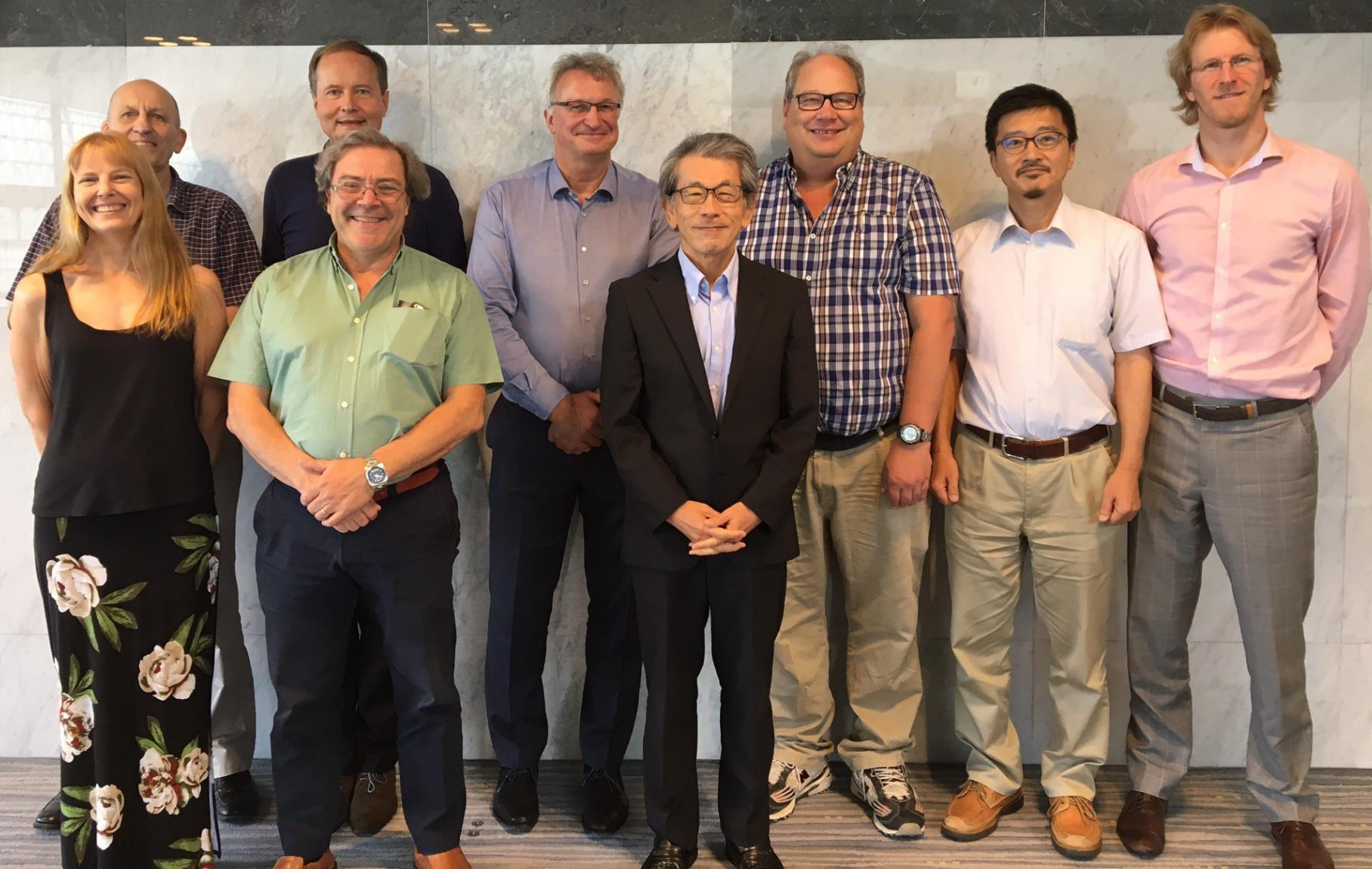
GRA Council meeting, Tsukuba

29 October 2017

## Research Group Co-chairs' Report

Martin Scholten, Harry Clark, Kazuyuki Yagi, Gonzalo Zorrilla,  
Jane Johnson, Ladislau Martin-Neto, Rosa Mosquera-Losada,  
Jean-Francois Soussana, Brian McConkey, Lee Nelson

# Team of Co-Chairs with Chair 2017



# Research Groups

## RESEARCH GROUPS



Livestock



Croplands



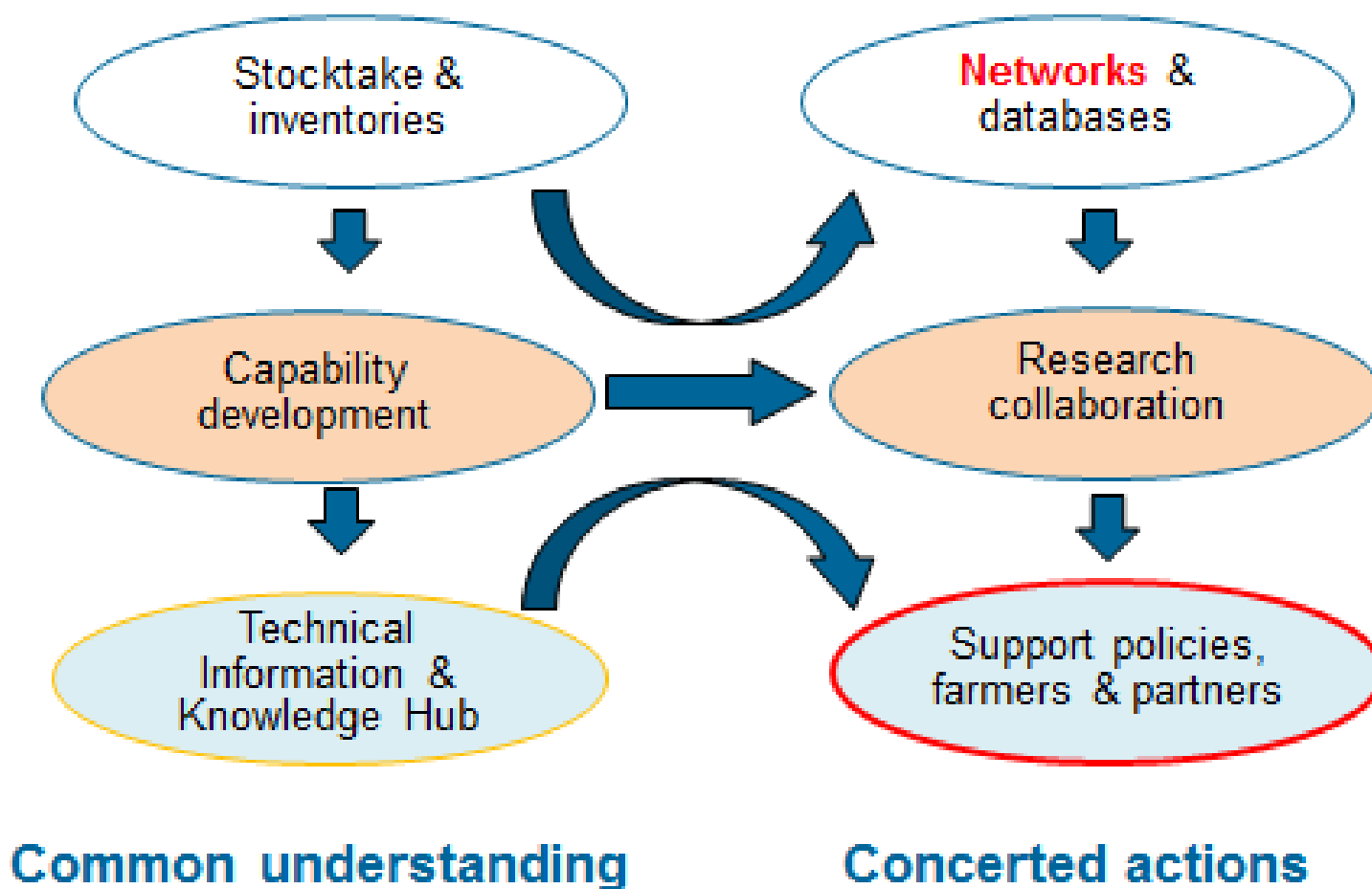
Paddy Rice



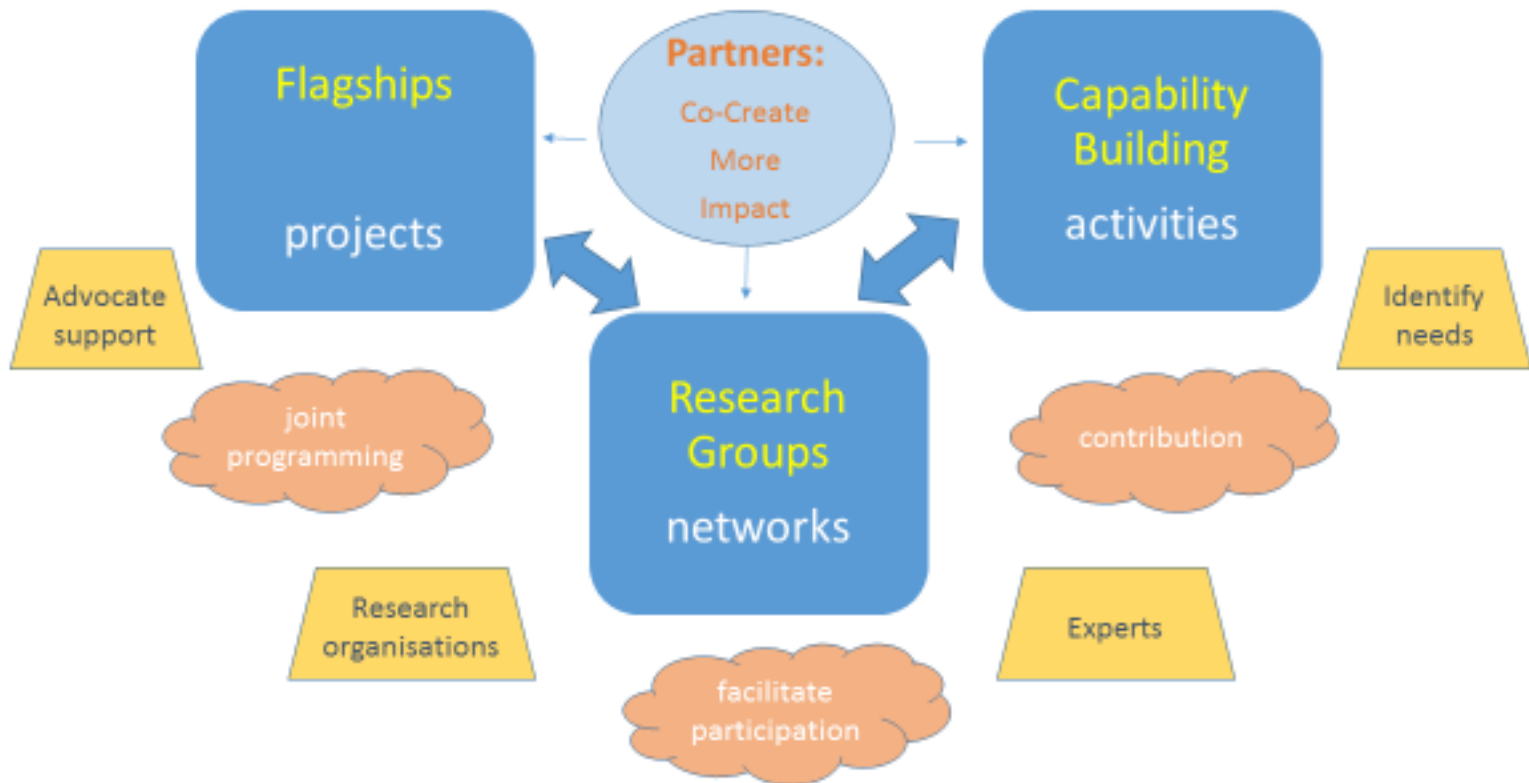
Integrative

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# Outline of Work 2011-2016

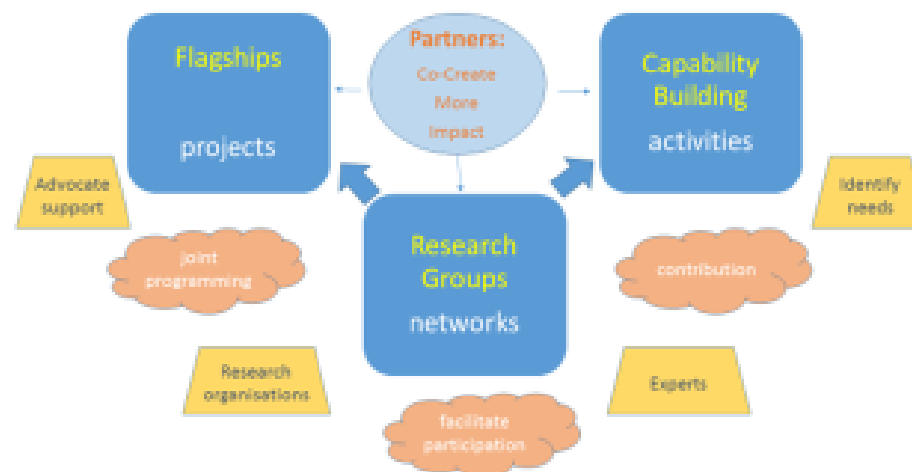


# Outline of Work updated 2017+



# Impact driven!

We bring countries together to find ways to grow more food without growing GHG emissions





# GLOBAL RESEARCH ALLIANCE

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GRA Council meeting, Tsukuba

29 August 2017



## Research Group Reports Achievements & Ambitions



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GRA Council meeting, Tsukuba, Japan

29 August 2017

**Paddy Rice Research Group  
Report**

Kazuyuki Yagi and Gonzalo Zorrilla



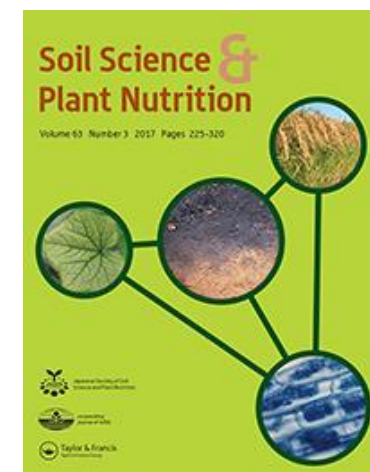
# [Paddy Rice Research Group]: Recent key achievements (1)

- Americas Sub-Group Meeting
  - 13-15 July 2016, Stuttgart, Arkansas, USA
  - Participation of 6 Americas & 2 Asia members + CIAT, FLAR
- Asia Sub-Group Meeting
  - 2 September 2017, Tsukuba, Japan
  - Participation of 1 Americas & 7 Asia members + IRRI, CIAT
- Participation/communication of new partner organisations
  - Latin American Fund for Irrigated Rice (FLAR)
  - Sustainable Rice Platform (SRP)



# [Paddy Rice Research Group]: Recent key achievements (2)

- Progress of the MIRSA project in southeast Asia
  - Assessing the feasibility of GHG mitigation through water saving techniques (AWD) in irrigated rice fields
  - More detail at the Symposium on Thursday
- Rice Flagship project reviewed and improved
  - More detail at the Flagship presentation
- Preparation of the special issue of a scientific journal
  - To be published in the early 2018 by *Soil Science and Plant Nutrition (SSPN)*
  - 14 original papers now under review



# [Paddy Rice Research Group]: Main ambitions (1)

## Research Collaboration

- Launch of a collaborative research project in Americas
  - FONTAGRO Project
    - “More rice with less emissions and less water consumption”
    - Participating Countries: Colombia, Perú, Chile
    - Co-participants: CIAT, FLAR
- Second phase of the collaborative research project in Asia
  - Japan is explores the possibility of post-MIRSA project

## Capability Development

- Application of APEC capacity building project
  - Aiming at dissemination of AWD technology in Asia-Pacific countries
  - Proposed by Japan, New Zealand and Mexico, with co-sponsoring by Chile, Malaysia, The Philippines, Thailand and Viet Nam

# [Paddy Rice Research Group]: Main ambitions (2)

## Technical Information & Knowledge Hub

- Publication of paddy rice MRV Guidelines
  - Extension of the Measurement Guidelines in 2015
  - Will be published in early 2018
- Publication of the rice GHG special issue in SSPN
- Publication of a review of rice mitigation options in Latin America and the Caribbean

## PRRG Communities

- Participation/communication of new partner organisations
- Involvement of more members
  - South Asia, Africa, & Europe

# Croplands Research Group: Recent key achievements

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- CRG meeting, Phoenix, AZ – USA November, 2016
  - networks capacity building

Phoenix | InstaMag



- Successfully recruited a third Co-Chair- thank you to Spain for allowing Dr. Rosa Mosquera-Losada to serve.

# Croplands Research Group: Recent key achievements - Networks

- Landscape management Network*: Obtained funds - China and UNEP, granted by National Natural Science Foundation of China. (China and Kenya)/global organizations [International Ecosystem Management Partnership, Institute of Atmospheric Physics (CAS), Institute of Geographic Sciences and Resources Research (CAS), International Center of Tropical Agriculture (CIAT, CGIAR), International Livestock Research Institute (ILRI, CGIAR)]
- Conservation Agriculture Network*-published factsheet, obtained funds for meta data compilation
- Australia led proposal N<sub>2</sub>O representing Australian and international collaborators “Asia Pacific Regional Network for Greenhouse Gases” (pending)

# Croplands Research Group: Recent key achievements - Activities

- <https://www.facebook.com/gracroplands>
  - ✓ Group activities, GRA news and outcome, Member countries activities (Multi-languages), IPCC, UNFCCC, FAO news and outcome
- MAGGnet – continuous to expand metadata content
- Working with CRG Conservation Agriculture Network to identify sites for meta-analysis of conservation ag practices.
- Creation of a searchable, online meta-database of experimental sites is ongoing (resource limitations an issue).

# Croplands Research Group: Main ambitions

- Enable and support networks
- Via the networks continue to develop capacity building through multi-country activities
  - Conservation Ag – 1) Identify and highlight Conservation AG case studies – peer-reviewed pub. 2) Understand management practises for cover crops which impact soil organic carbon and GHG emissions
- Identify how networks can contribute to relevant GRA Flagships (e.g., Soil Carbon Sequestration, GHG Inventory, Possible future Flagships on Nitrous Oxide and Circular food system)



# Croplands Research Group: Main ambitions

- Support CRG activities –
  - MAGGnet metadata collections of relevant publication
  - GRAMPS – Modelling platform
  - Social media activities via Facebook and Website
  - Literature Database
- Enhance communication and coordination among CRG co-chairs, Network leaders and membership
- Next meetings: 8 September 2017 in United Kingdom, Tentative August 2018 in Brazil



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**Livestock Research  
Group report**

Martin Scholten & Harry Clark



**Conclusion of stage 1 of project with FAO (funded by CCAC and NZ Govt) -  
*‘Reducing enteric methane for improving food security and livelihoods’:***

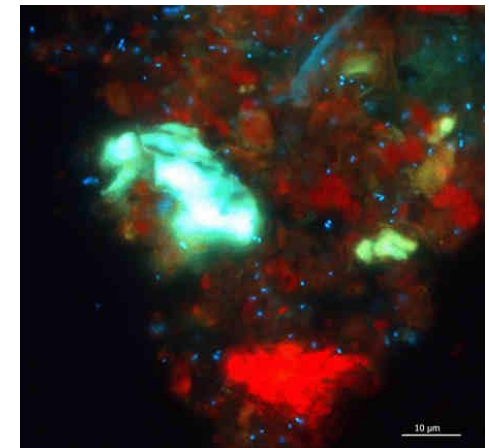
- Demonstrated options to reduce emissions intensity at the same time as increasing productivity in 13 countries
- Funding secured for a second phase: implementation

## **Animal Selection, Genetics & Genomics Network**

- Practice brief for policy makers on improved ruminant genetics for productivity and climate change outcomes
- Advanced state of knowledge on breeding low-emitting animals

## **Rumen Microbial Genomics Network**

- Ground-breaking research in understanding rumen composition across animal species
- Development of global reference sets of data on the rumen microbiome



## **Feed & Nutrition Network**

- Major global databases on predicting and mitigating livestock GHGs through feed & nutrition – being used in IPCC guidance
- Improvements to global good practice for research techniques

Networks actively engaged in developing flagship projects

# Capability building achievements

LRG-agreed focus on supporting countries to progress towards Tier 2 inventories for livestock

- ✓ Countries now implementing Tier 2 inventories, e.g. Indonesia
- ✓ Regional training for South/South-East Asian countries
- ✓ White Paper on MRV of livestock GHGs produced with CCAFS, FAO & World Bank and input from many GRA country experts + summary for policy makers shared at UNFCCC meeting in May
- ✓ Co-published an informative guide on the benefits of Tier 2 inventories to increase policy options (climate & agriculture)

Plus ongoing support provided through fellowships and awards such as NZ's LEARN scheme

# Future plans (2018 and beyond)

- Support the networks to lead successful projects in the Enteric Fermentation Flagship
- Grow the number of countries contributing resourcing to LRG activities, especially for capability building and participation (e.g. funding for experts' travel and time) in different regions
- Further develop relationships with partners, particularly around implementation of capability building programme
- Engage with the IPCC to influence consideration of productivity improvement as entry point for mitigation

# Upcoming activities

New capability building activities planned for 2017/18 (and delivered in partnership with CCAFS and FAO) include:

- Compendium of country experiences in implementing MRV systems for livestock
- Develop a project on livestock and manure management with CCAC
- Guidance on addressing gaps in activity data for livestock inventories
- Exploring the science needed to underpin livestock NAMAs and NDCs
- In-country projects to help design national research strategies and raise stakeholder awareness, improve measurement capability and MRV systems

✓ *Close links with the Inventory Flagship*

# Integrative Research Group

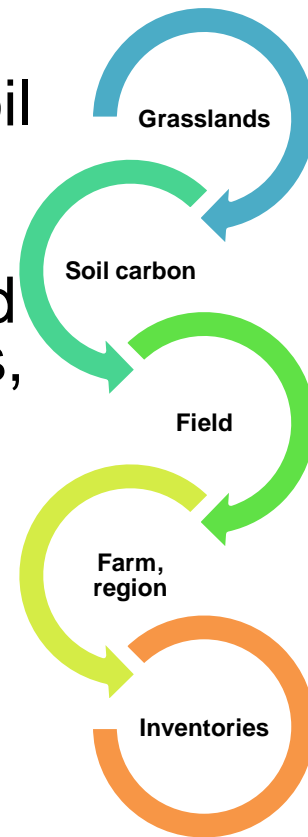
Brian Mc Conkey, Jean-François Soussana, Lee Nelson





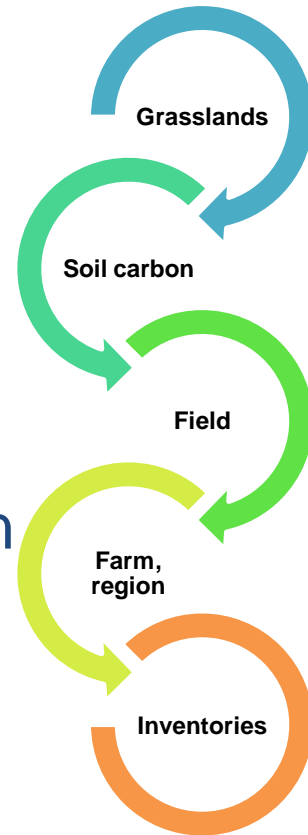
# Integrative Research Group: Recent key achievements

- *IRG, a group recently adopted by the Council in 2015*
- Five research networks established: field-scale modelling, farm to regional scale modelling (new), soil carbon (new), inventories, grassland
- First annual meeting (Rome, January 2017) attended by 34 participants from 16 Alliance member countries, partners and invited experts
- IRG experts provided leadership to two flagship proposals:
  - Soil Carbon Sequestration
  - GHG Inventories



# Integrative Research Group: Recent key achievements

- *Soil carbon network: C-MIP*, testing soil carbon models on a global network of long-term bare fallow sites (launched)
- *Field scale network: GHG-MIP* (in revision, Global Change Biology), showing that the median of 3-4 simulation models predicts within experimental error  $N_2O$  emissions and yields of crop rotations and grasslands at 10 sites across 4 continents.
- *Farm-Region*: first global map showing organic carbon inputs to soils required to reach the 4 per 1000 target (presented at COP23, Marrakech)
- *Coordination of international cooperation* for soil carbon sequestration research (CIRCASA project, 17 countries) funded by European Commission



# Integrative Research Group

## Main ambitions 2017-18

- *Grasslands network*
  - With Uruguay, GEF and World Bank, pilot project on SCS in degraded grasslands,
  - With FAO, LEAP and GEOGLAM, estimating baseline soil organic carbon (SOC) stock change in global grasslands,
- *Soil carbon network*
  - With CGIAR, synthesis of long-term soil carbon sequestration (SCS) data by practice and study of SCS impacts on yields,
- *Field scale network*
  - GHG mitigation options in arable crop rotations and grasslands tested by model intercomparison
- *Farm and Region network*
  - Farm data base showing GHG and soil carbon balance (meeting supported by Canada)
  - With IIASA lead, global impacts of land degradation and climate change on soil carbon and yields by 2050

# Integrative Research Group

## Main ambitions 2017-18

- IRG supports upscaling through data synthesis and modeling activities and through inventories improvements
- **Upscaling of soil carbon and GHG emissions and improved inventories** are needed to support **national action plans** (e.g. *Nationally Determined Contributions NDC's* )
- **Main ambition:**
  - Facilitating the use of research to improve estimation and reporting of options for soil carbon sequestration and reduced GHG emissions/intensity in national actions*
- **IRG & network meetings** during 17-19 January 2018 in Paris (host: France) to plan work to address the NDC goal and flagship projects with resources
  - Include a 1-day symposium to **share country experiences of designing and using research for planning NDCs and other national plans** (summary scientific publication planned)

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GRA Council meeting, Tsukuba

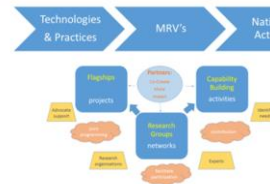
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## Joint Research Group Recommendations



# Research Group requests to Council Supporting the Co-Chairs & Networks

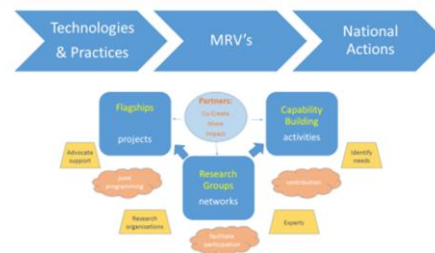
We bring countries together to find ways to grow more food without growing GHG emissions



- Acknowledge the support already provided by those countries undertaking co-chairing roles
- Increased membership & responsibilities (e.g. flagships) is placing increasing demands on the co-chairs' time. For some co-chairs the workload is becoming unsustainable
- Provide time & staff & budget to co-chairs; concept of co-chair 'teams' not just co-chairs
- The Livestock & Paddy Rice Group want to move to a tri-chairing arrangement; please consider volunteering to take up this role & providing the necessary resources
- Help make the RGs' stronger
  - Facilitate research organization to join networks
  - Facilitate experts to join networks
  - Arrange and host facilities for regional hubs

# Research Group requests to Council Supporting Flagship's

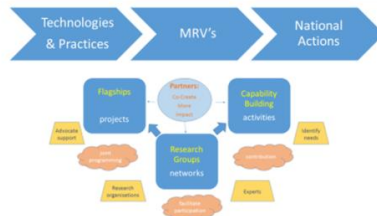
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- Co-chairs enthusiastically endorse the concept of flagships
- The development of resourcing mechanisms is critical for success of the flagships; GHG Nexus & Circasa initiative need to be supported
- The co-chairs urge Members to
  - Further develop joint programming initiatives
  - Support Flagship proposals in competitive calls
  - Provide direct support for involvement in flagships
  - Suggest new flagship projects, especially those that can build on existing multi-partner initiatives

# Research Group requests to Council Supporting Capability Building

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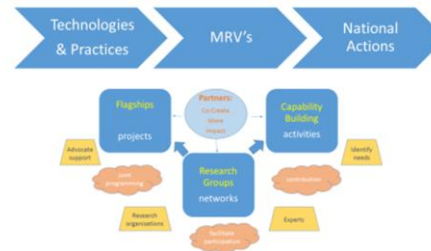


- Understanding 'need' is critical and is especially important now due to the influx of new Members.
- Co-chairs will work with the Secretariat to develop an inventory of needs; your involvement is critical if we are to better deliver to your needs
- Resourcing is critical for the RGs to undertake capability development – too few Member countries are providing the resources necessary for all RGs to undertake capability building activities (LRG is an exception & acknowledges strong NZ support)
- Research groups working to develop a more integrated cross-group approach to capability building e.g. regional workshops covering all aspects of MRV
- You can help - facilitate the recruitment of experts & provide support; host meetings for GRA integrated workshops; provide fellowships to link capability development with flagship projects



# Research Group requests to Partners Co-create more Impact

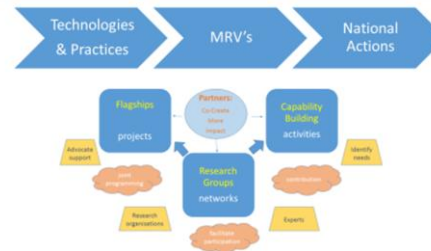
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- Greater Partner involvement is critical especially for the success of flagship projects and capability building
- GRA need to seek opportunities to co-create better global activities and programmes - partner & build on existing initiatives, co-develop new initiatives

# Research Group requests to Council Additional Questions

We bring countries together to find ways  
to grow more food without growing GHG emissions



- What is the status of a GRA Scientific Conference?
- What is the status of support for the 4/1000 initiative?



**Questions to your Co-Chairs?**

# DISCUSSION

We bring countries together to find ways to grow more food without growing GHG emissions

