

# GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

GRA Council meeting, Tsukuba

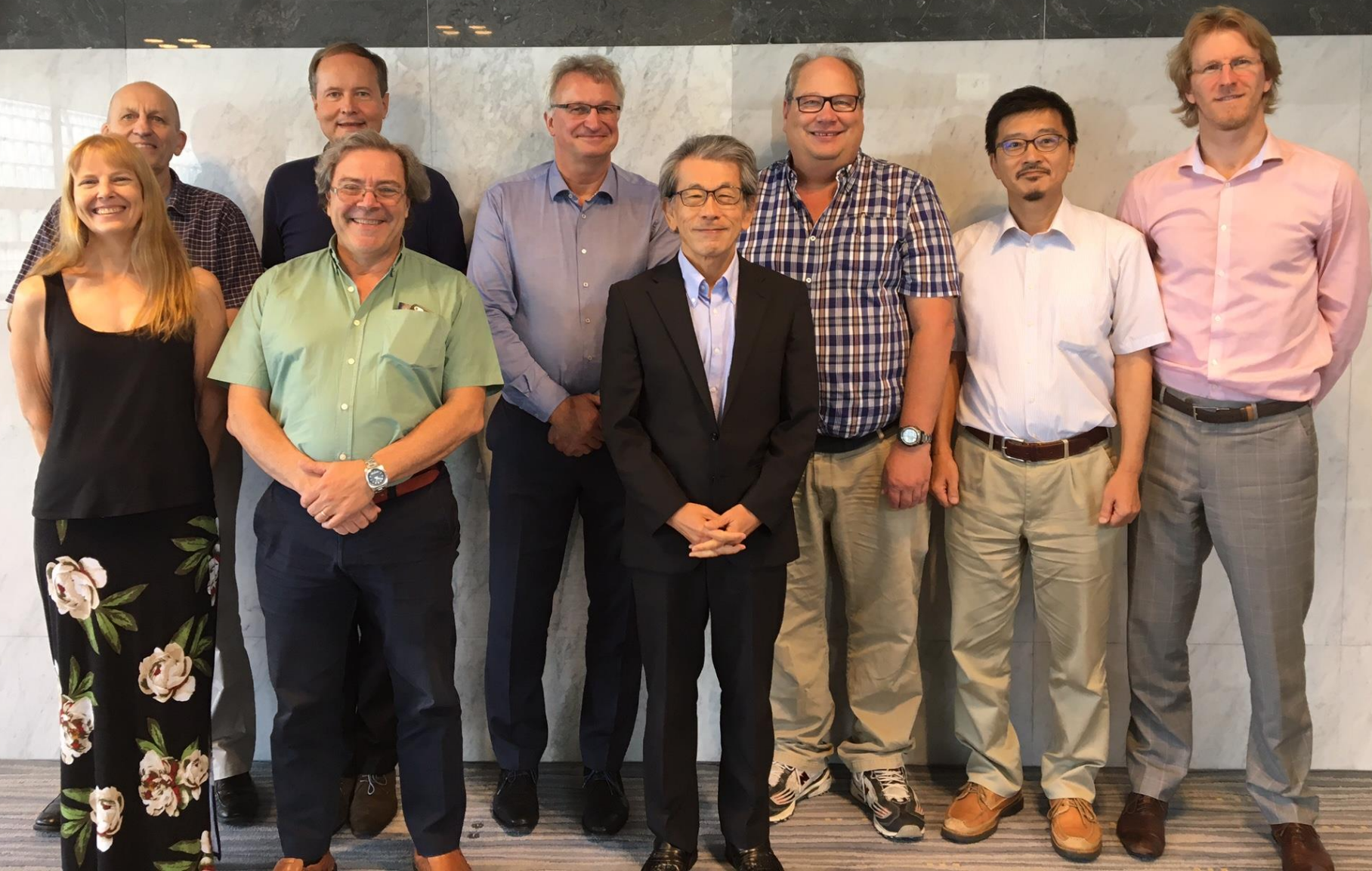
29 October 2017

## 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

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## RESEARCH GROUPS



Livestock



Croplands



Paddy Rice

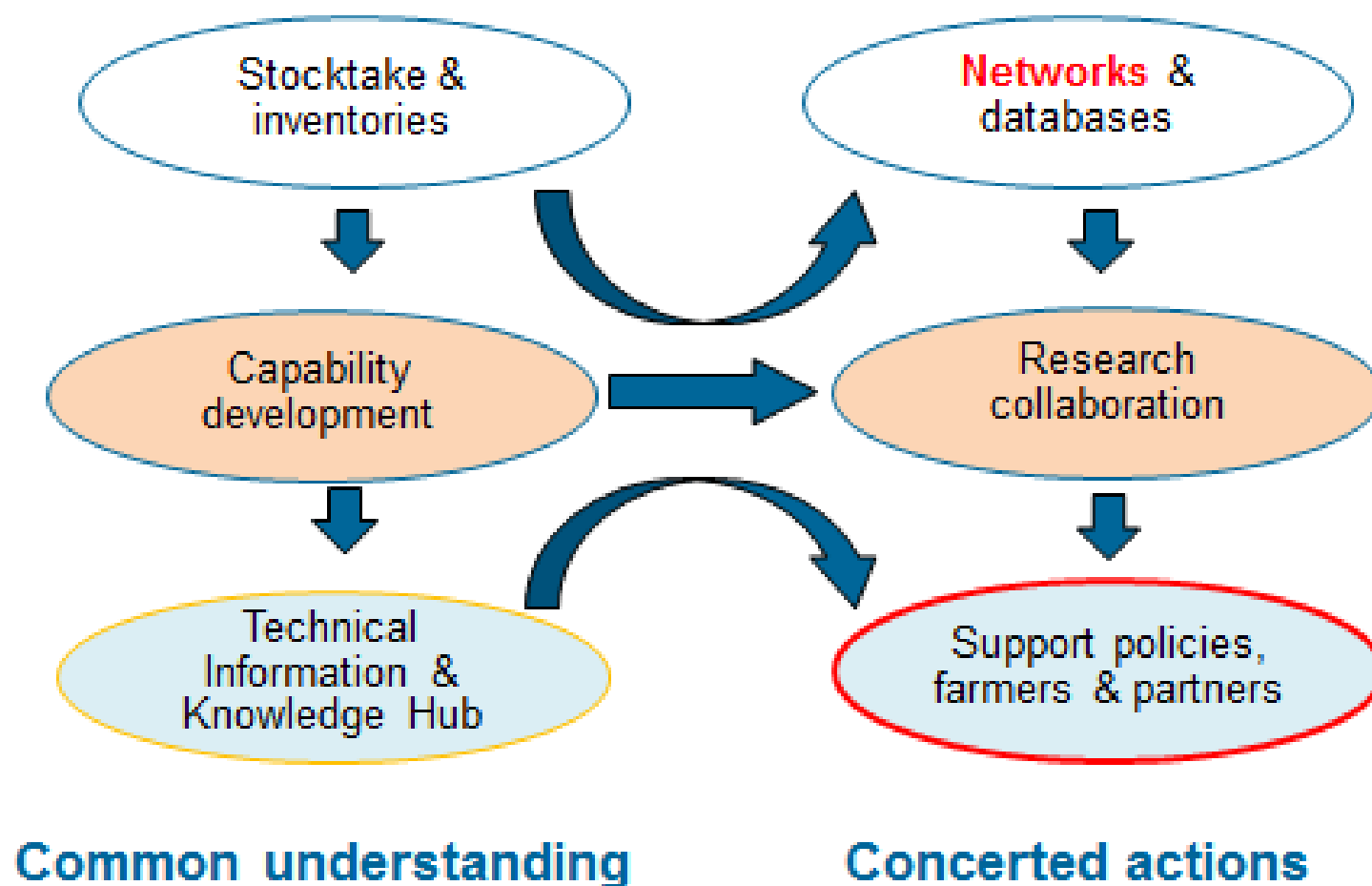


Integrative

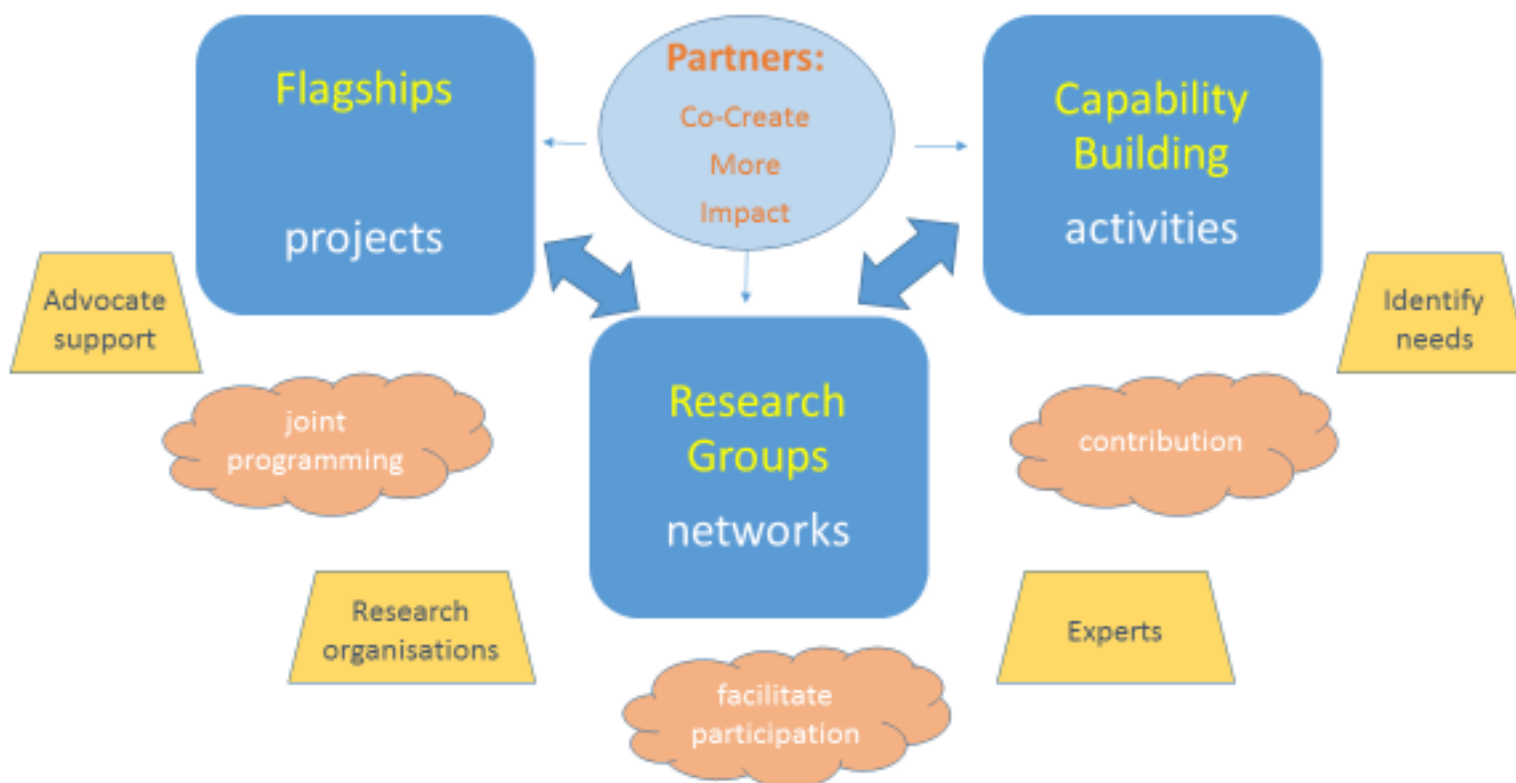
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# Outline of Work 2011-2016

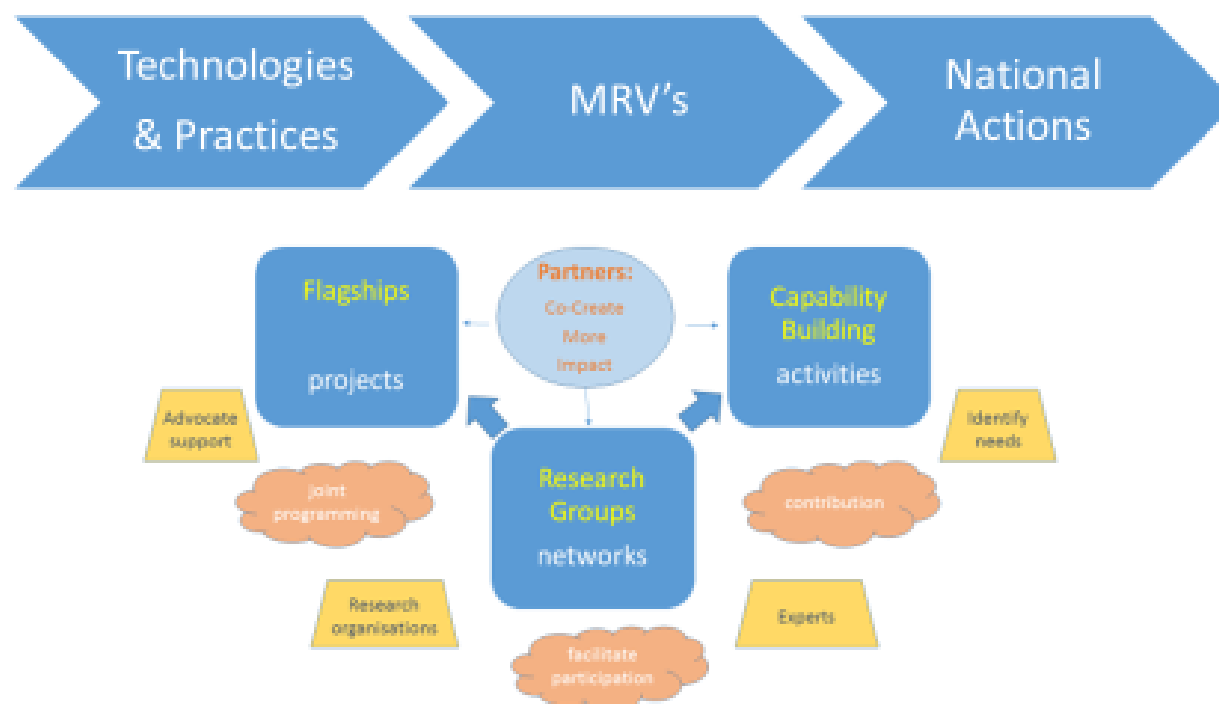


# Outline of Work updated 2017+



# Impact driven!

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



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## **Research Group Reports Achievements & Ambitions**



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ON AGRICULTURAL GREENHOUSE GASES

GRA Council meeting, Tsukuba, Japan

29 August 2017



## Paddy Rice Research Group Report

Kazuyuki Yagi and Gonzalo Zorrilla



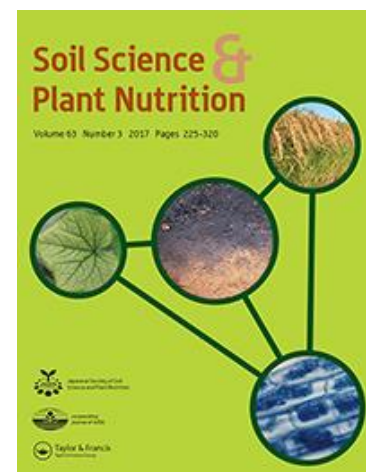
# [Paddy Rice Research Group]: Recent key achievements (1)

- 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

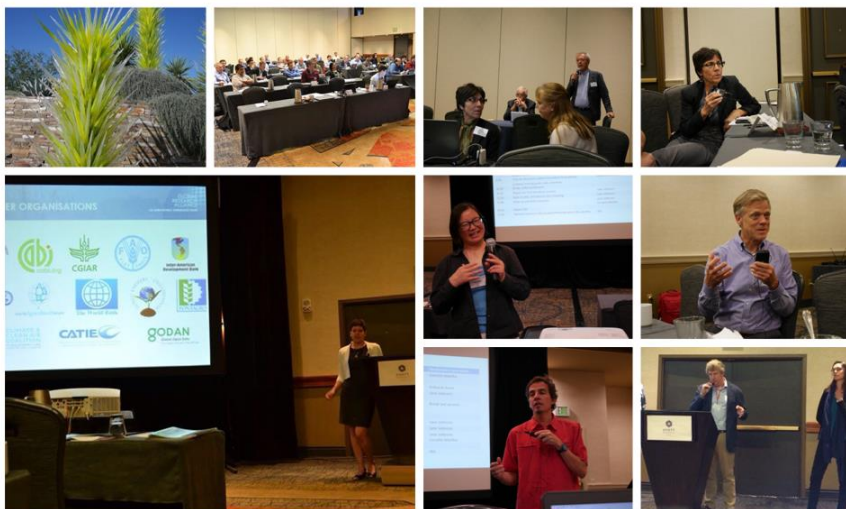


# Croplands Research Group: Recent key achievements

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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



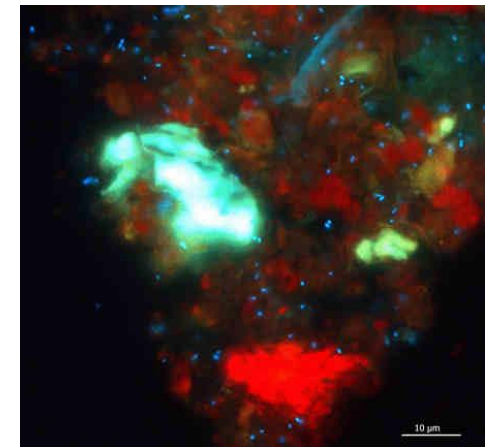
# Active research networks

## **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*

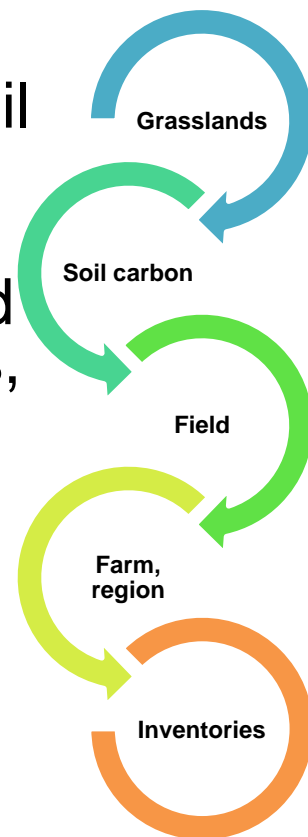
# Integrative Research Group

Brian Mc Conkey, Jean-François Soussana, Lee Nelson



# Integrative Research Group: Recent key achievements

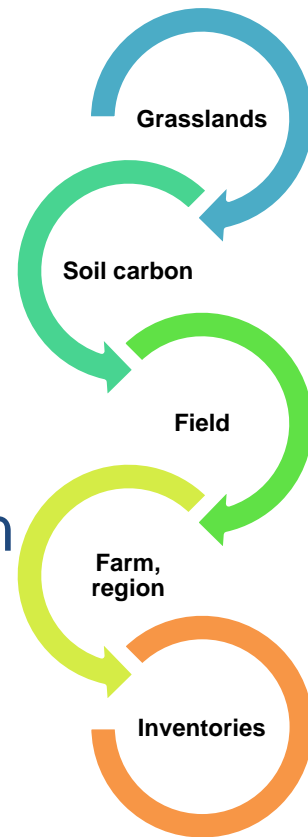
- *IRG, a group recently adopted by the Council in 2015*
- Five research networks established: field-scale modelling, farm to regional scale modelling (new), soil carbon (new), inventories, grassland
- First annual meeting (Rome, January 2017) attended by 34 participants from 16 Alliance member countries, 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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## **Joint Research Group Recommendations**

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

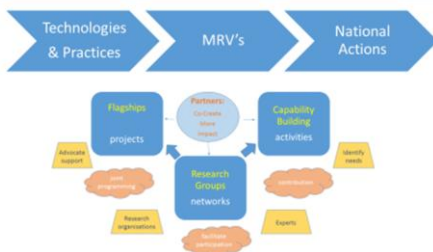
We bring countries together to find ways to grow more food without growing GHG emissions



- 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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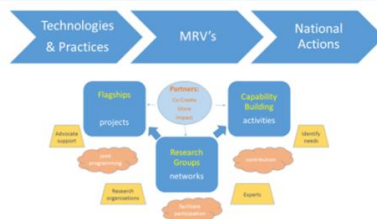


- Co-chairs enthusiastically endorse the concept of flagships
- The development of resourcing mechanisms is critical for success of the flagships; GHG Nexus & Circasa initiative need to be supported
- The co-chairs urge Members to
  - Further develop joint programming initiatives
  - Support Flagship 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

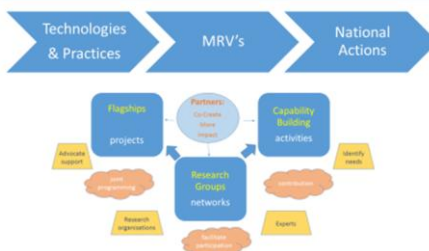
We bring countries together to find ways to grow more food without growing GHG emissions



- 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

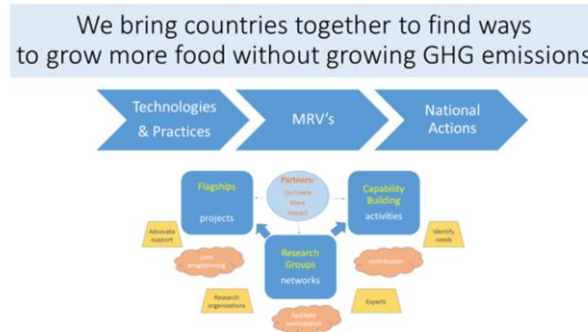
# Research Group requests to Partners Co-create more Impact

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



- 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



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



A close-up photograph of a brown cow's head, focusing on its nose and mouth as it grazes on tall green grass. The cow's body is blurred in the background, and the foreground is filled with sharp, vibrant green grass blades.

**Questions to your Co-Chairs?**

# DISCUSSION

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

