

GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

GRA Council meeting, Bali

7 October 2019

Research Group Co-chairs' Report

Mark Liebig, Beverley Henry, Pamela Joosse, Yasukazu Hosen,
Rosa Mosquera-Losada, Harry Clark, Jeroen Dijkman

Team of Co-Chairs

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Research Groups

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RESEARCH GROUPS

PADDY RICE



LIVESTOCK



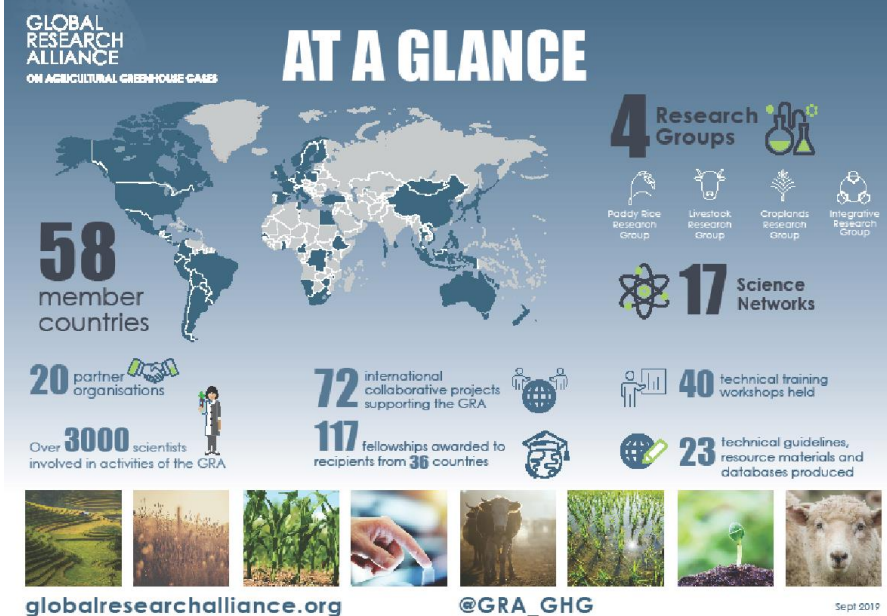
CROPLANDS



INTEGRATIVE RESEARCH GROUP



Where countries and other national and international stakeholders join forces to find ways to grow more food without growing GHG emissions.....



....framed within the broader context of the SDGs to contribute to the transition to more sustainable and inclusive trajectories of development



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Research Group Reports Achievements & Ambitions



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Paddy Rice Research Group Report

Yasukazu Hosen, Álvaro Roel and Laure Tall

Paddy Rice Research Group: Recent achievements (1)

- 3rd Co-Chair:
 Senegal!
- Asia Sub-Group Meeting
 - 12 October 2018, Bangkok, Thailand
 - 19 attendees from Chile, China, Indonesia, Japan, Philippines, Vietnam + EDF
 - 12 October 2019, Bali, Indonesia
 - ≈23 attendees from China, Indonesia, Japan, Malaysia, Philippines, Vietnam + IRRI
- An APEC Project “**Capacity Building** on management Technologies for Climate Smart Rice Cultivation in the South-East Asian and Latin America Rice Sector”
 - Overseen by Japan
 - Propose by Japan, Mexico, New Zealand
 - Co-sponsored by Chile, Malaysia, Philippines, Thailand, Vietnam
 - Workshop “Rice Landscapes and Climate Change – Options for mitigation in rice-based agroecosystems and scaling-up of climate-smart rice cultivation technologies in Asia”
 - By FAORAP, APEC, JGSEE/KMUTT, AEGIS, ASEAN Climate Resilience Network, NARO, GRA, GIZ, SRP, IRRI, MAFF of Japan, WBCSD
 - 10-12 October 2018, Bangkok, Thailand
 - ≈120 attendees including those from Chile, China, Indonesia, Malaysia, Japan, Philippines, Thailand, Vietnam (with the APEC & MAFF funds & support) and 47 attendees from



Paddy Rice Research Group: Recent achievements (2) Research

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• MIRSA-3 Project (27 Nov 2018 – 31 Mar 2023)

- Develop multi-beneficial integrated rice cropping techniques that improve rice cultivation of Southeast Asia for low emissions, paddy soil conservation, and stable productivity.
- Fund contributor: MAFF of Japan
- GRA Council Champions: **Indonesia, Japan, Philippines, Vietnam, CGIAR (IRRI)**
- Kick-off meeting on 16 January 2019 in Hue, **Vietnam** (>36 participants)
- 2nd general meeting on 12-13 October 2019 in Bali, **Indonesia** (~19 participants)
- A product of the former project: “Minamikawa et al. (2015) Guidelines for measuring CH₄ and N₂O emissions from rice paddies...” was introduced in the “2019 Revised” to the 2006 IPCC Guidelines for National Greenhouse



• FONTAGRO Project (2018 - 2021)

- Improve adoption of AWD by farmers, validating appropriate AWD in farmers' fields in South America.
- Fund contributor: FONTAGRO
- GRA Council Champions: **Colombia, Perú, Chile, CGIAR (CIAT, CCAFS), FONTAGRO + FLAR**



• CLIFF – GRADS Scholarship (2019)

- Identify high yielding rice cultivars that reduce methane emissions.
- GRA Council Champions: **CGIAR (IRRI, CIAT, CCAFS) + FLAR**

• UIUC Project (2019 - 2020)

- Benchmark the economic and environmental sustainability of rice production in Latin America

Paddy Rice Research Group: Main ambitions (1) Research

Research Collaboration

- Put the launched projects on their right tracks.
 - MIRSA-3 Project (27 Nov 2018 – 31 Mar 2023)
 - FONTAGRO Project (2018 – 2021)
 - CLIFF – GRADS Scholarship (2019)
 - UIUC Project (2019 – 2020)
- Set a new project in Latin America and the Caribbean.
 - ACTIONS-RICE Project (May 2020 –)
 - Accelerating the transition towards sustainable rice production in Latin America and the Caribbean
 - Fund contributor: SNAPP (Proposal submitted for four network meetings; seeking additional funding for network coordination, fellowships, and piloting of promising identified options)
 - GRA Council Champions: CGIAR (CIAT, Bioversity), **Uruguay, USA, Chile, Brazil, Peru, Colombia, Costa Rica, Nicaragua, Ecuador, Argentina** + FLAR, The Nature Conservancy, Fedearroz,

Paddy Rice Research Group: Main ambitions (2) Community

PRRG Community

- Expand the community circle.
 - New partner organisations
 - New Members
 - Necessary, in particular in **Africa & South Asia**
 - Senegal: a new community member ☐ the 3rd **Co-Chair (DONE)**
 - **Constitution of “Africa Sub-Group”**
 - Letter of interest/commitment sent to 47 countries by ISRA (DONE)
 - Up to now, formal confirmation received from 1) Rép of Centrafrique, 2) Togo, 3) Rep of Guinea, 4) Nigeria, 5) Gambia, and 6) Cameroon
 - The 3rd remind letter sent to the countries
 - The first meeting organised
 - **Cameroon**: a new community member
 - **Costa Rica**: a new community member





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Croplands Research Group Report

Mark Liebig, Rosa Mosquera and Ladislau Martin

Croplands Research Group: Recent achievements (1)

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Network Engagement

• Landscape Management Systems

- CNMM-DNDC model for landscape management
- Validated in for subtropical catchment (Zhang et al., 2018)

• Integrated Crop-Livestock Systems

- GHG mitigation fact sheet
- 10 participating countries

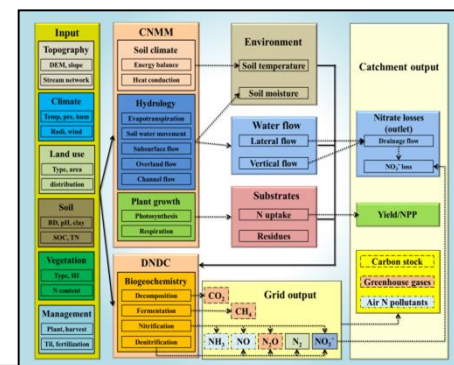
• Conservation Agriculture

- Special session at SSSA international meeting, San Diego, CA, USA, January 2019.

• Peatland Systems

- Special session at EGU Vienna Austria April

CNMM-DNDC 1.0



Croplands Research Group: Recent achievements (2)

Agroforestry Systems

- Agroforestry for sustainable agriculture
- AFINET EU project

AgroForestryNet.eu

HOME 1. DEFINING AGROFORESTRY 2. TECHNICAL 3. PRACTICES 4. BIOECONOMY 5. SOCIAL 6. ECONOMY 7. POLICY

Handbook

Index:

1. Defining agroforestry
2. Technical
 - 2.1. Silvopasture
 - 2.2. Silvoarable
 - 2.3. Forest farming
 - 2.4. Homegardens
 - 2.5. Riparian buffer strips
3. Practices
 - 3.1. Desing
 - 3.2. Fertilization and admenments
 - 3.3. Species/variety selection
 - 3.4. Prunning
 - 3.5. Water management
 - 3.6. Pest and disease control
 - 3.7. Agroforestry species
4. Bioeconomy
5. Social
6. Economy
7. Policy

(c) 2019 Agroforestrynet

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INNOVATION

SILVOPASTURE

A land use management systems for grasslands

AFINET
AGROFORESTRY INNOVATION NETWORK

THE WHAT AND WHY

Silvopasture a land use management systems for grasslands

Silvopasture represents the 85% of the agroforestry practices in Europe, being the most extended among other agroforestry practices (silvoarable, riparian buffer strips, forest farming and homegardens). Silvopasture is a practice that can be associated to sustainable grassland management mainly located in the South and North of Europe, that provides enormous

advantages to reduce livestock production costs. However, it is not extensively used in Europe as only the 10% of the grassland area is occupied by silvopasture. One of the main drawbacks to foster agroforestry in Europe for farmers is to really identify the potential that silvopasture has to increase productivity in livestock systems.



Silvopasture extent (a) and share (b) in different Regions of Europe - Santiago-Freijoles JJ



HOW IS THE CHALLENGE ADDRESSED

Improving AF knowledge

Fostering the benefits of silvopasture in Europe should be based on the understanding of the main types of pastures it covers. Livestock feed restrictions are associated to summer and winter in South of Europe while only in winter in the North, being the period of pasture shortage usually longer in the South than in the North of Europe. South of Europe grasslands associated to Mediterranean areas are naturally composed by woody perennials, the unique type of vegetation able to persist during the long summer periods, while maximum pasture production

occurs in summer in Northern herbaceous grasslands with a scarce proportion of woody perennials. Woody perennials can help to overcome these shortage periods in both North and Southern countries, while promoting the delivery of ecosystem services linked to environment. Silvopasture in the North of Europe has trees as woody perennials while in the South shrubs are the woody perennial component. Fruit trees silvopasture agroforestry is less used in Europe in spite of being full paid by the CAP direct payments.



Extent of silvopasture in woodlands and shrublands - Santiago-Freijoles JJ



Croplands Research Group: Recent achievements (3)

Collaborative / Capacity Building Activities

- **Croplands Research Group Newsletter**

- Initiated by Spain in 2019.
- Quarterly installments (Mar, Jun, Sep).



- **VIII REMEDIA Workshop**

- Catalyzing GHG mitigation in Spain through circular economy.

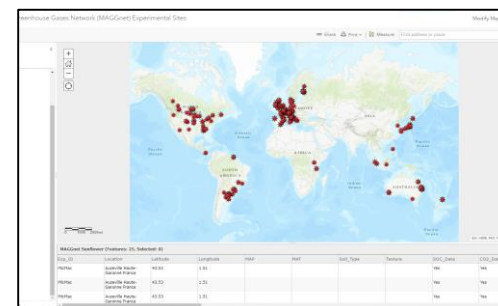
- **Literature Database**

- Seeking resources for JournalMap feature.



- **MAGGnet**

- Compiled experimental site metadata.
- New sites in 2019 added from Italy, Republic of Korea, and USA



Croplands Research Group: Main ambitions

- **CRG Annual Meeting** (14 Nov 2019; San Antonio, TX, USA)
 - **Reframe Organizational Structure**
Some networks are active, others not so much. Need to reframe to leverage current strengths and respond to new opportunities.
 - **Focus**
Activity Generate commitment to rally around the development of a tangible product.
 - **Broaden Impact**
Formalize CRG newsletter through ISBN designation and explore opportunities to improve reach through social media.
- **Engage new GRA members and partners** (e.g., Global N₂O Database)
- **Develop the AFINET ‘alive’ handbook** (www.agroforestry.net.eu)
- **Submit proposal(s) for conference to complement focused activities** (e.g., OECD, AERI)



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Livestock Research Group report

Harry Clark, Sinead Waters and Jeroen Dijkman

Livestock Research Group: Recent achievements (1)

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Networked the relevant global research capacity on:

- Animal Selection, Genetics & Genomics
- Feed and Nutrition
- Rumen Microbial Genomics

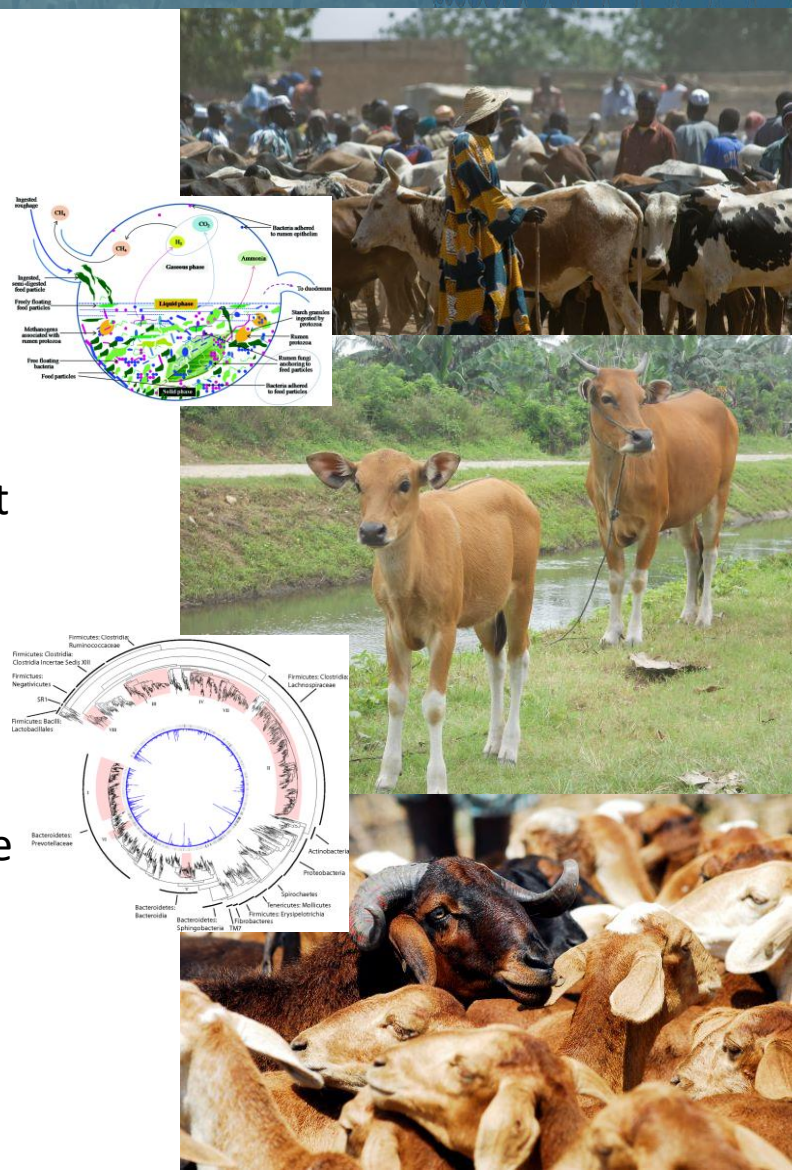
Development and publication of consensus methods for:

- Breeding low methane emitting animals
- Studying environmental emission in ruminant systems
- Understanding the rumen microbiome
- Animal recording

Development of global databases, e.g. for enteric methane emission prediction and mitigation strategies

Continuous knowledge sharing through social media and virtual and in-person network meetings

Commitment by UK to become third co-chair



Livestock Research Group: Recent achievements (2)

National and regional capacity building

- West/Central and Southern Africa workshops on low emission livestock sector development
- Tier progression: GHG inventories, MRV, measurements e.g. Kenya dairy sector; Indonesia; Hebei county, China
- Publication of Activity guidance on GHG inventories, NDCs and MRV

11th annual LRG meeting, Brazil, 9-10 August 2019 (following the 7th International Greenhouse Gas and Animal Agriculture Conference)

- Lessons learned from ten years of working together, to inform and shape the LRG's strategy for the coming decade
- Representatives from 31 countries, three research networks and six partner organisations



Livestock Research Group: Recent achievements (3)

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Delivering and leveraging through global partnership

- CCAFS: Projects to strengthen countries' MRV capabilities
- ERA-GAS: Funding for LRG network projects and other relevant work
- CCAC, FAO, USDA, World Bank Group: Funding '*Increasing the Ambition for Agricultural Climate Action to Reduce SLCPs*' project
- CCAC: Technical coordination of Agriculture Initiative



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



WORLD BANK GROUP



CLIMATE &
CLEAN AIR
COALITION
TO REDUCE SHORT-LIVED
CLIMATE POLLUTANTS



Livestock Research Group: Main ambitions 2020

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Increase global nature of dialogue, networks, partnerships and knowledge sharing

Establish 'roster' of countries and organizations offering to share relevant GHG inventory, MRV and NDC expertise

Explore the set-up of LRG Regional / thematic chapters

Further development of tools for assessment of livestock emissions and mitigation options

Prepare science-based document on the role of livestock in sustainable agri-food systems

Explore establishment of Facility to ensure climate action in livestock sector investment projects





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Integrative Research Group report

Jean-François Soussana, Pamela Joosse and
Beverley Henry

Integrative Research Group: Recent achievements (1)

CO-CHAIRS

- Jean-Francois Soussana, INRA, France;
- Pamela Joosse, AAFC, Canada;
- Beverley Henry, ACIAR, Australia

Consolidated structure with three Networks

SOIL CARBON SEQUESTRATION NETWORK

- Denis Angers (AAFC, Canada)
- Claire Chenu (INRA, France)

FARM to REGIONAL SCALE INTEGRATION NETWORK

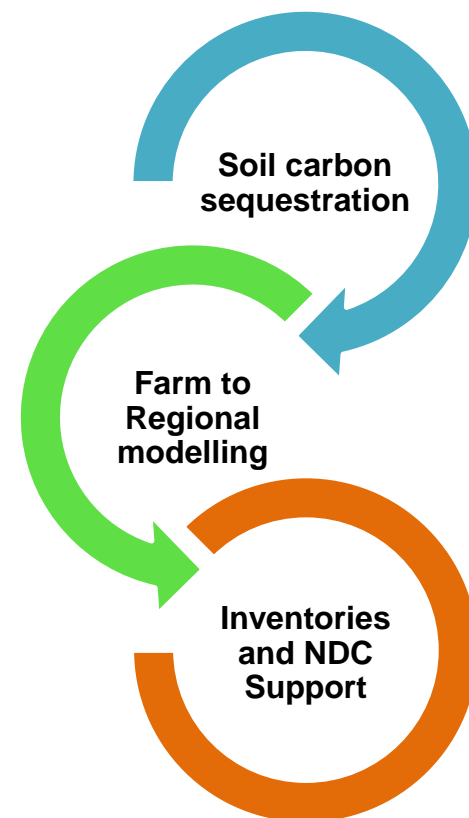
- Petr Havlik (IISA, Austria)
- TB

INVENTORIES & NDC SUPPORT NETWORK

- Andrea Pickering (MPI, New Zealand)
- Richard Eckard (University of Melbourne, Australia)
- Alberto Sanz-Cobena (Spain)
- Marci Baranski (USDA, United States of America)
- Ngoni Chirinda (CIAT, Colombia)

No true GRA Flagships but key project

- CIRCASA – supporting the Soil Carbon Sequestration Network



Integrative Research Group: Recent achievements (2)

- **Third Annual IRG Meeting**
 - With CIRCASA meeting (CIAT, Cali, February 2019)
- **Regular Phone Meetings**
- **Webinar series (with CIRCASA)**
 - Three successful webinars; ~100 registered for each
 - *Link with the 4p1000 initiative and the CIRCASA project*
 - *Australian Soil Carbon offset methods: the science, the policy and the practice*
 - *Soil carbon monitoring, reporting and verification methods*
 - More in planning
- **Papers published**
 - Smith et al. (2019, GCB) *How to measure, report and verify soil carbon change to realise the potential of soil carbon sequestration for atmospheric GHG removal*

SOIL CARBON SEQUESTRATION NETWORK

- GRA activities related to soil carbon sequestration presented at KJWA workshop (Bonn, June 2019)

FARM to REGIONAL MODELLING NETWORK

- Mitigation modelling workshop, GGAA Conference, Brazil (4 August 2019).

INVENTORIES and NDC SUPPORT NETWORK

- Briefing held at Bonn (June 2019) with KJWA Workshop – strong interest in the network
- Newsletter (#1 published April 2019); #2 in preparation

Integrative Research Group

Main ambitions 2020

SOIL CARBON SEQUESTRATION NETWORK

- CIRCASA objective to establish an international research consortium and strategic global research directions
 - Have asked for feedback from IRG members; Will be seeking seeking Council feedback

FARM to REGIONAL MODELLING NETWORK

- Proposal submitted - Horizon 2020 SIM4CLIM (Sustainable Land-based Mitigation for CLimate stabilization and its Monitoring)
- Modelling network interests- to build collaboration with AgMIP

INVENTORIES and NDC SUPPORT NETWORK

- Proposal to be developed for a global stocktake of data and research, to identify research gaps and to better coordinate use in inventories and NDCs
- Contributing to capacity-building for inventory development and expand capability to recognize mitigation achieved by local farmer actions

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Joint Research Group Recommendations

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

- Acknowledge support provided by countries undertaking co-chairing roles
- Need to provide staff time & budget to co-chairs; concept of co-chair 'teams' not just co-chairs
- Facilitate experts and research organizations to join networks
- Livestock and Paddy RGs now also under a tri-chairing arrangement



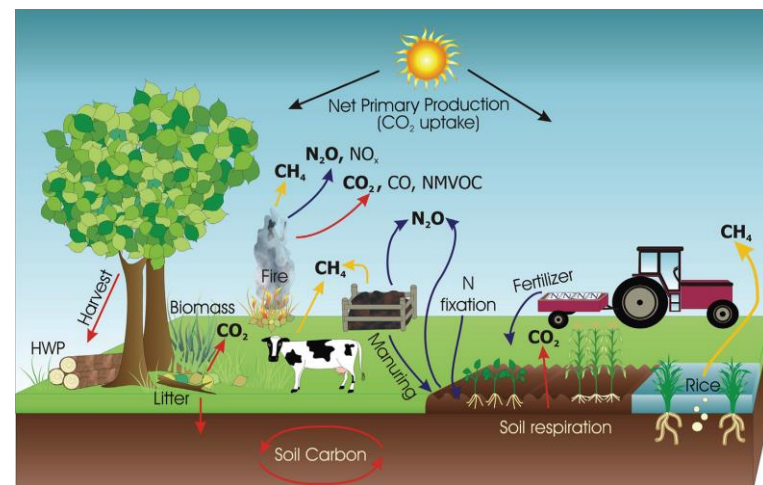
Research Group requests to Council Supporting Flagship's

- Co-chairs support the revision of flagship concept, with following provisos:
- Council endorsement = taking ownership and active promotion to mobilise support. Not a tick-box exercise!
- Assessment criteria: specify Global importance and Impact and critical role of the GRA; Develop objective indicators
- Submissions accompanied by review panel recommendation



Research Group requests to Council Supporting Capability Building

- Co-chairs recognise the importance of new RUFORUM initiative – but need to ensure integration with relevant ongoing or planned in-country activity and capability
- Increase investment in capability building for development of GHG inventories and MRV to support NDC enhancement and implementation



Research Group requests to Partners

Co-create more Impact

- Co-chairs acknowledge the fundamental role of partners in GRA delivery
- Further encourage partners to work with the GRA to co-create new activities and programmes



Research Group requests to Council

Additional Questions

- Large opportunity and need to better publicize GRA outputs – but resource and time constraints: Role of council members in championing the GRA
- Develop additional mechanisms to increase linkages and communication between Council and RGs



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?