

# N/N<sub>2</sub>O Flagship

## GLOBAL RESEARCH ALLIANCE

### ON AGRICULTURAL GREENHOUSE GASES



# Task Force and project authors

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# Context and Problem

- N<sub>2</sub>O GWP~300, atm lifetime >100yrs
- Projected increase of 83% between 2005-2050
- Contributes to Ozone depletion
- N fertilization (synthetic, organic, legumes) needed to optimize crop and livestock productivity
- Balance N input for maximum return and minimum losses

# Synergies with research groups and flagships

- Reducing N<sub>2</sub>O emissions must be addressed in the context of:
  - C sequestration (N-cycle closely coupled to C-cycle)
  - manure management
  - cropping systems including legumes
  - balanced with methane emissions
- Relevant to other Research Groups and Flagships



## Development of solutions

- N management: rate, source, timing & placement
- Develop and implement N inhibitors
- Crop rotation, cover crops, perennials, biomass management and conservation tillage
- Water management (irrigated or paddy systems)
- The interdependence between N and C
- Role of soil microbiome

## Improved quantification of N<sub>2</sub>O emissions and mitigation

- Emissions factors – direct, indirect and yield scaled
- Cropland/pastureland Tier 2 and Tier 3
- Improved activity data

## Implementation of mitigation solutions

- Identification of locally appropriate mitigation actions
- Capacity building
  - Farmers / producers
  - MRV practitioners
  - For Tier 3 modelling
  - Students/interns
- Scientific exchange
  - Conferences
  - Innovation networks

# Next steps

If approved by Council...

Task force to finalise flagship

Task force to prioritize projects and  
coordination of activities

Task force to seek resources