

## Nitrogen Balance and Nitrogen Use Efficiency (NUE) Atlas from Rice, Wheat, Maize and Soybean at Global Scale

**Project Title:** P1603 - Delivering cropland mitigation in regional emission hotspots through scaling cost-effective mitigation options and developing novel MRV mechanisms

**Description of the innovation:** For the first time, we are developing an NUE atlas from four major crops on a global scale accounting for all the sources of N input and N output. The main objective of this work is to determine the geographic hotspots with the scope of improving NUE specific to each crop. From this database combined with the global yield gap atlas, we will identify the priority areas for closing yield gaps and improving NUE.

**New Innovation:** Yes

**Stage of innovation:** Stage 1: discovery/proof of concept (PC - end of research phase)

**Innovation type:** Other

**Geographic Scope:** <Not Defined>

**Description of Stage reached:** We have 0.5 degree database on N input accounting all sources (synthetic fertilizers, animal manure, crop residues, soil mineralization, atmospheric deposition and N fixation). We are now working on N output using gridded data on crop harvest area and production with university of Minnesota, which will follow NUE atlas development.

**Name of lead organization/entity to take innovation to this stage:** CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo

**Names of top five contributing organizations/entities to this stage:**

- WUR - Wageningen University and Research Centre
- University of Minnesota

**Milestones:** No milestones associated

**Sub-IDs:**

- 30 - Reduced net greenhouse gas emissions from agriculture, forests and other forms of land-use (More sustainably managed agro-ecosystems)
- 31 - Reduced net greenhouse gas emissions from agriculture, forests and other forms of land-use (Mitigation and adaptation achieved)

**Contributing Centers/PPA partners:**

- CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo

**Evidence link:** <https://samples.ccafs.cgiar.org/n2o-dashboard/>

**Deliverables associated:** <Not Defined>

**Contributing CRPs/Platforms:** <Not Defined>