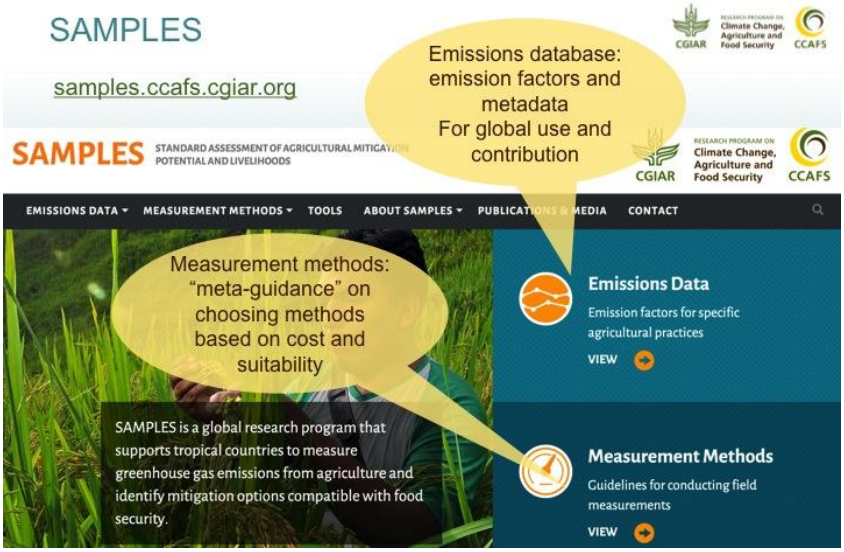
CCAFS news and areas for collaboration with the GRA Croplands Research Group

Collaboration is welcome. Please contact Meryl Richards at meryl.richards@uvm.edu.

Completion of SAMPLES measurement guidelines, new data platform
SAMPLES (Standard Assessment of Agricultural Mitigation Potential and Livelihoods) addresses the dearth of reliable information about greenhouse gas emissions from agriculture in tropical countries. SAMPLES scientists work with developing countries to improve data and



measurement methods for agricultural greenhouse gas emissions and mitigation potentials. New website and data platform: samples.ccafs.cgiar.org. Hosts the SAMPLES guidelines, intended to inform anyone conducting field measurements of agricultural greenhouse gas sources and sinks, especially to assess mitigation options in smallholder systems in tropical developing countries. Data platform is an open access database of emission factors and metadata from global agricultural greenhouse gas research. Contributions from all researchers are welcome. All CGIAR contributions to the data platform will also be contributed to MAGGnet.

Ongoing projects and field measurements

- Nitrous oxide emissions and mitigation potential of efficient N management are being quantified in a series of field trials established for wheat- and maize-based systems in Mexico and India.
    - In Mexico, sensor-based N management, nitrification inhibitors and slow release sources of N in irrigated wheat-based and rainfed maize systems.
    - In India, precision nutrient management on GHG emissions in irrigated rice-wheat, rice-maize and maize-wheat based systems.
    - People involved: Clare Stirling, Jon Hillier, Tek Sapkota

- Quantification of emissions and mitigation potential in semi-arid areas of South Asia
    - GHG measurement using the automated system to compare GHG dynamics of an

intensified rice-legume/rice-cereal/rice-fallow system.
- Effects of minimum tillage and residue management practices on GHG emissions from maize-pigeonpea cropping system
- People involved: Anthony Whitbread

New project

Researchers from CIMMYT and the University of Aberdeen are collaborating on a project to establish an open resource of N_2O emissions measurements from agricultural soils as a function of agricultural management and soil and climate conditions. The database will be made available to the wider community to allow practitioners to input and make use of new experimental data as it emerges. The database will form the basis for a revision of the Stehfest and Bouwman 2006 models. They will also explore options to add further granularity and responsiveness to the model, among which are an exploration of the capacity to include an N-balance (in preference to Nrate) as an explanatory variable, and the possibility of developing distinct regional models.

A parallel work stream to will be to calibrate, evaluate and improve a suite of process-based (e.g. DNDC, DSSAT/DAYCENT, CENTURY and/or ECOSSE) models for GHG emissions from maize/wheat-based systems and then cross-compare with the new empirical model and site data generated from ongoing field measurements.

These projects are beginning in 2015 and will run to 2018. Project leader: Clare Stirling
Collaborator: Jon Hillier