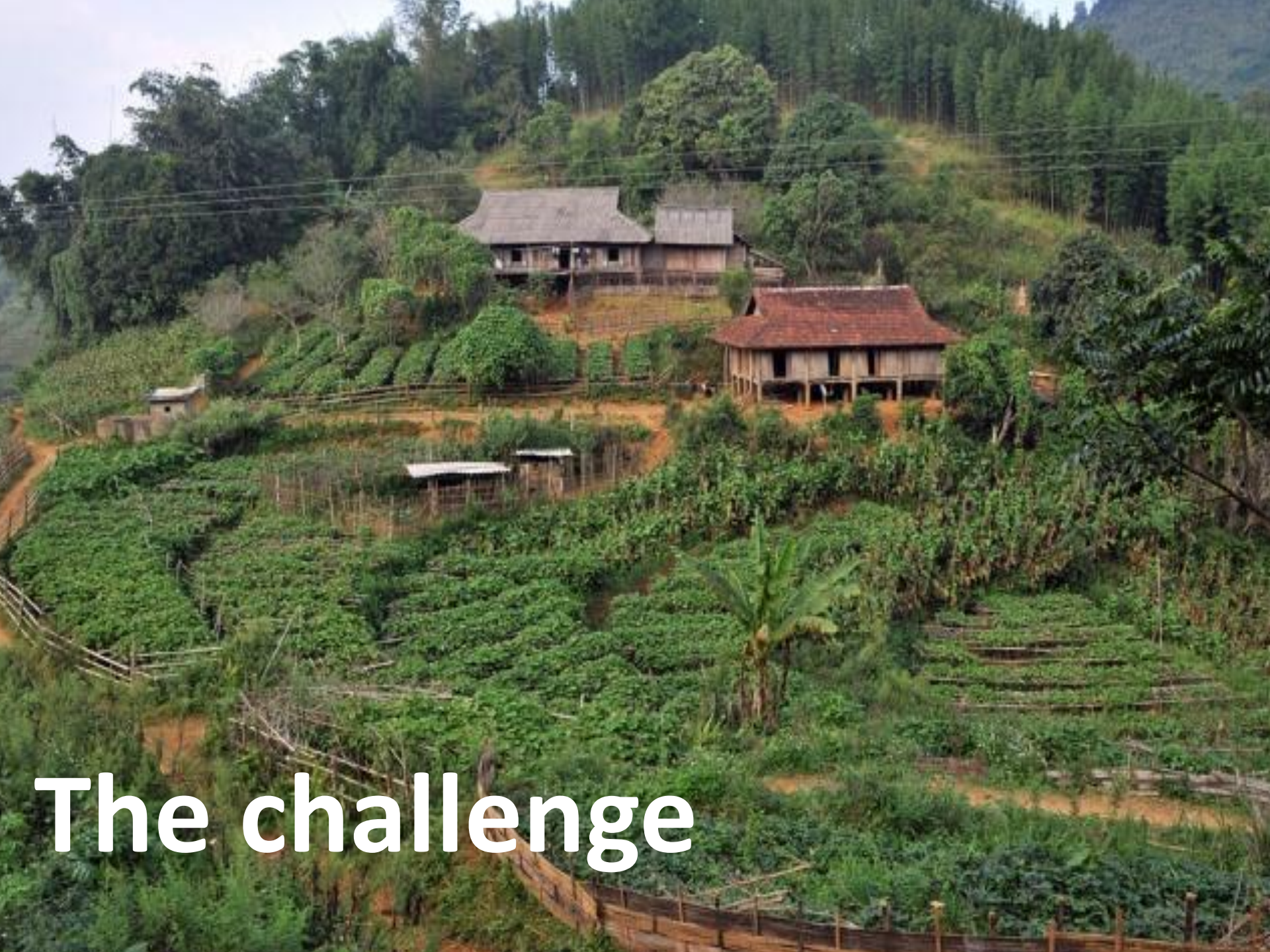
Workshop on

# Improving the Quantification of Agricultural Greenhouse Gases in Developing Countries

CCAFS - Duke University - FAO

18-19 April 2012

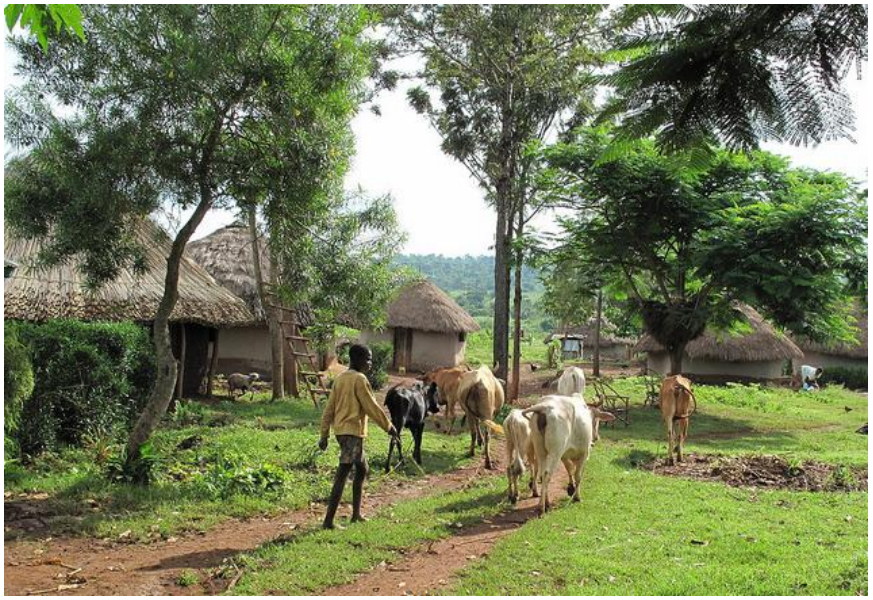
Rome



# The challenge

# The Concerns

- Poor data: outdated, not broadly generalizable, poor quality, lacking
- Diverse, complex crop-livestock systems
- Methods expensive
- Models not calibrated
- Transparency
- Need for metrics linked to yields, food security and livelihoods



# CCAFS-Duke-FAO GHG Quantification Initiative

Develop simple, low cost quantification of agricultural GHGs as a foundation for managing climate change mitigation

- Enable practical methods
- Advance state-of-the-art of underlying science
- Strengthen regional capacities

# Purpose of our workshop

- Synthesize state of quantification methods
- Set priorities for how to improve methods for use in low income countries

Objectives

- Further develop articles: distinctiveness, opportunities for collaboration, new topics
- Support the cross-fertilization of ideas to advance current methods and their application in low-income contexts
- Identify overarching themes, gaps, and areas for future work
- Inform SBTSA, IPCC, and research community

# The articles and discussion…

1. State-of-the-art and seek to advance practice:

– **Gaps**: where is further information a priority?

– **Novelty**: What are the latest innovations?

– **Actions:** What do we need to do specifically now to advance implementation?

2. Issue focused and analytical

3. Consider applications to resource limited, tropical agriculture and smallholders

# Background

- October 2011 workshop on whole farm and landscape quantification:  two review papers (Milne and Seebauer)
- User Survey
- ERL authors and outlines
- Overview paper (Paustian et al)
- Some training in regions

# User Survey

- 2 focus groups
- Informal email survey 7-replies

- Most users have multiple purposes for using the data

## A typology of users

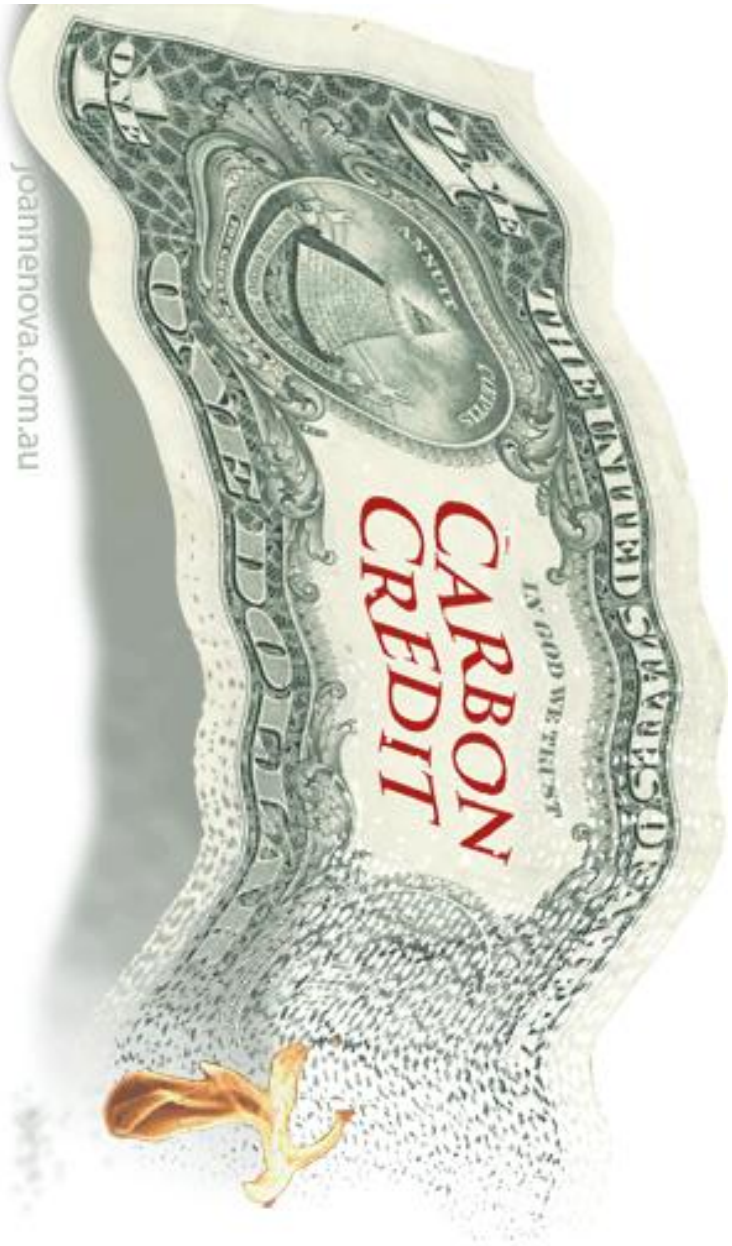
| Check all that apply | Purpose |
|---|---|
| | 1. **Reporting: National and project scale** |
| | Tracking countries emissions |
| | Reporting NAMA efficacy |
| | Validating credits for offsets |
| ✓ | Communicating agribusiness efforts to offset emissions or become more green/transparency |
| | Certification |
| | 2. **Managing reductions** |
| ✓ | Assessing role of agriculture in emissions |
| ✓ | Determining differences due to management practices |
| ✓ | Increasing the efficiency of agriculture |
| | 3. **Research** |
| | Emissions default factors |
| ✓ | GHG Emissions interactions |
| ✓ | Impacts of management |
| | Impacts of climate change on emissions |
| ✓ | Methods development |

# Key requirements

## Need practical methods

**“There is a lack of practical/ user-friendly methodologies to implement on smallholder land”**

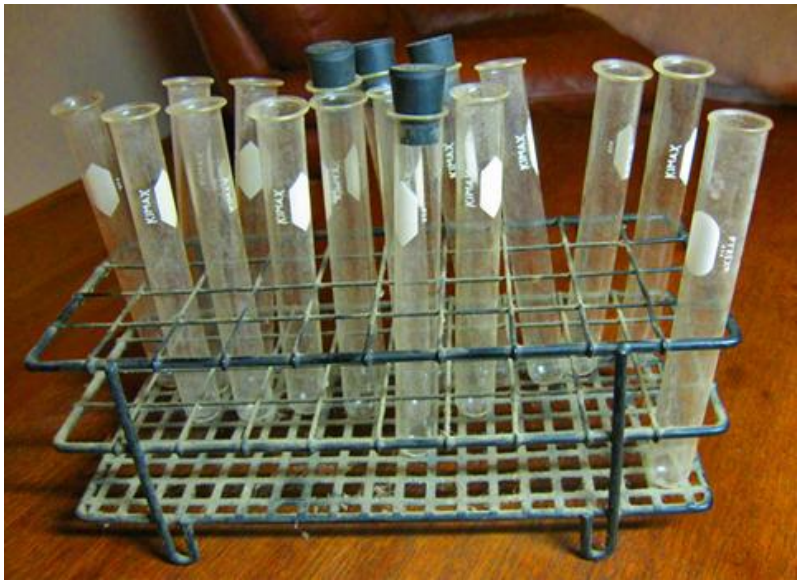
- Elaine Muir, Plan Vivo



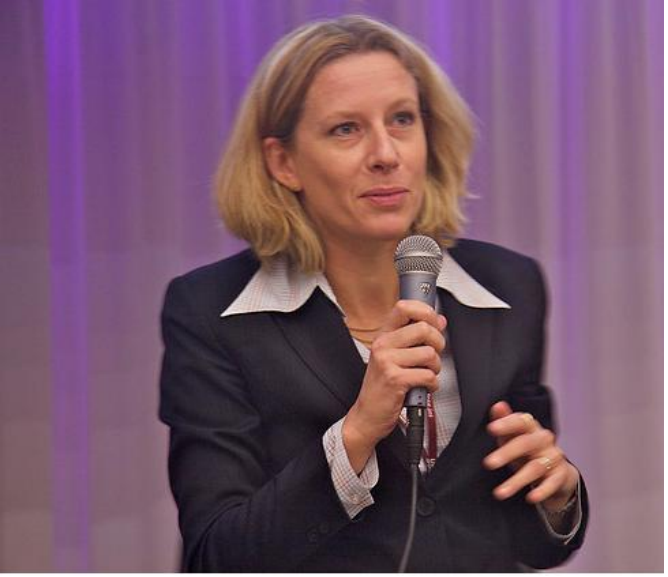
# Recognize current obstacles

"Irregular or absent national inventories of activity and biomass in landscapes make it difficult to use emission factors and other indices"

"Absence of technical capacity and infrastructure to generate information indices "



Moses Masiga, ENR Africa



# Build systematic datasets

"While it would be desirable to have… data at granularity that allows compliance-grade carbon accounting, this is not a priority at this point.

A priority would be to produce **comparable datasets** for agricultural GHG emissions of particular agricultural practices for a broad set of countries…with **a gradual increase in accuracy**."

Charlotte Streck,
Beyond Carbon

# Link to policy priorities

**“What is the crop, country, and region-specific mitigation potential for identified ‘quick wins’?”**

**Where is the greatest mitigation potential that also produces the most adaptation benefits?**

Jeff Hayward, Rainforest Alliance, SAN certification

# Where we are now

- **Top Down**: National level data and inventories- major driver and where capacity, resources and integration potential are strongest

  -IPCC guidelines, assessments, categories and efs

  -Complex, expensive CDM methodologies

  -Global Research Alliance, FAOStat, Gracenet, Fluxnet, Asiaflux

- **Bottom up**: Many independent, site-specific efforts; often proprietary; diverse, source of innovation
  - Companies: significant data, LCA focus; Unilever, SAN certification, SFL are leaders
  - Voluntary markets (e.g., VCS)
  - Research has focused in North

# Areas to Tackle

- Data: How to improve data gaps and variability over time? How to increase accuracy across regions? Down to specific strata/agroecosystems?
- Comparability: How to rapidly build comparable datasets relevant to regions and at multiple scales?
- Handling uncertainty: methods and tools for quantifying uncertainties
- Targeting (or prioritizing):Decision tools and metrics to identify priority investments (practices, systems, regions)
- Metrics: How to link production-based metrics with national inventories and address additional data needs
- Cost-effectiveness: Innovations for simple, low cost methods

# Workshop Products

1. Special issue of Environmental Research Letters (before AR5)
2. Policy Forum article + policy brief for SBSTA
3. Synthesis white paper for policy and science audiences (Davis Science meeting? October)
4. Regional working groups initiated: E and W Africa, S. Asia

# Thank you

Participants in CCAFS-FAO workshop on Whole Farm and Landscape GHG quantification, Oct 2011 and focus group and survey participants (below): John Fay (COMACO-Zambia), Herve Bisselua (MDG-Kenya), Jules Bayala (ICRAF-Mali). Nick Martin (ACR), Carolyn Ching (VCS), Jeff Hayward (Rainforest Alliance), Charlotte Streck (Beyond Carbon), Elaine Muir (Plan Vivo), Christoph Walter (Unilever), Seth Shames (EcoAgriculture Partners), Moses Masiga (ENR-Africa)