# Raising crop response: bidirectional learning to catalyze sustainable intensification at multiple scales

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**SIIL Tanzania**

## PROJECT SUMMARY

Supported by USAID SIIL and Global Center for Food Systems Innovation, our goals are to improve family nutrition, incomes, and enhance use of environmentally-sound farming practices among smallholder farmers in East Africa. Project objectives:

1. **To generate improved agronomic knowledge** of practices that sustainably raise **maize and bean** yields and crop response to inorganic fertilizer
2. **To evaluate bidirectional learning and effective extension approaches** to promote SI technologies among researchers, extension, agrodealers, NGOs, and farmers. Bidirectional learning: an iterative, participatory process by which information providers (extension, agrodealers, and NGOs), researchers, and farmers fine-tune recommendations.
3. **To generate improved knowledge of the nutrition impacts** of adoption SI technologies through analysis of Tanzania household surveys
4. **To provide practical guidance to governments on staple food marketing, trade, and extension policies** that support adoption of OM/SI technologies to support broader diffusion and scaling, and to work synergistically with activities under Obj. 1-3

## Objective 1. Understanding and enhancing maize-legume response

1. **Agronomy Panel Survey of > 600 households/maize fields across Southern and Northern highlands, to quantify crop yield, legume presence, soil properties and document farmer practices.**
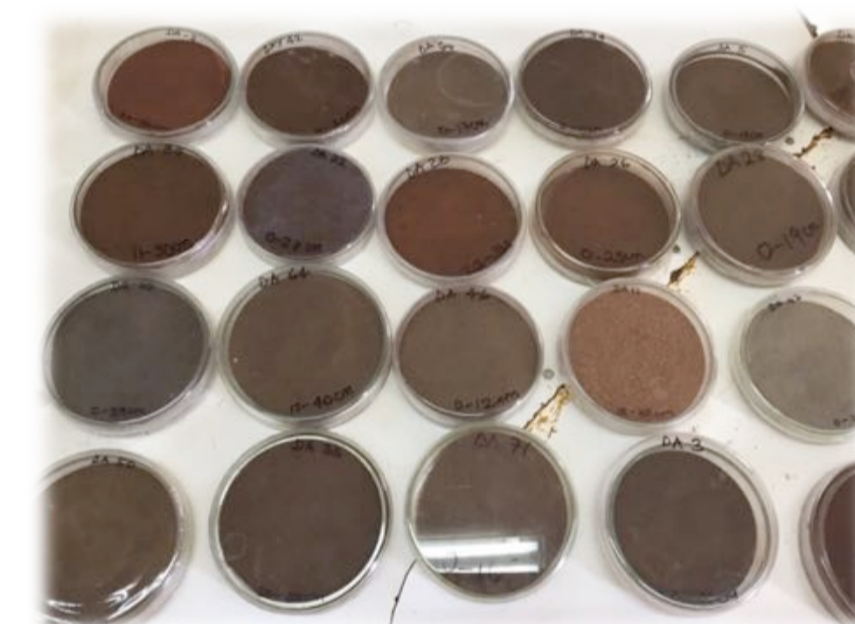2. **Partners: CIMMYT (TAMASA Project - BMGF), SARI, Uyole Research Staff, MSU Agronomists and Ag Economists.**
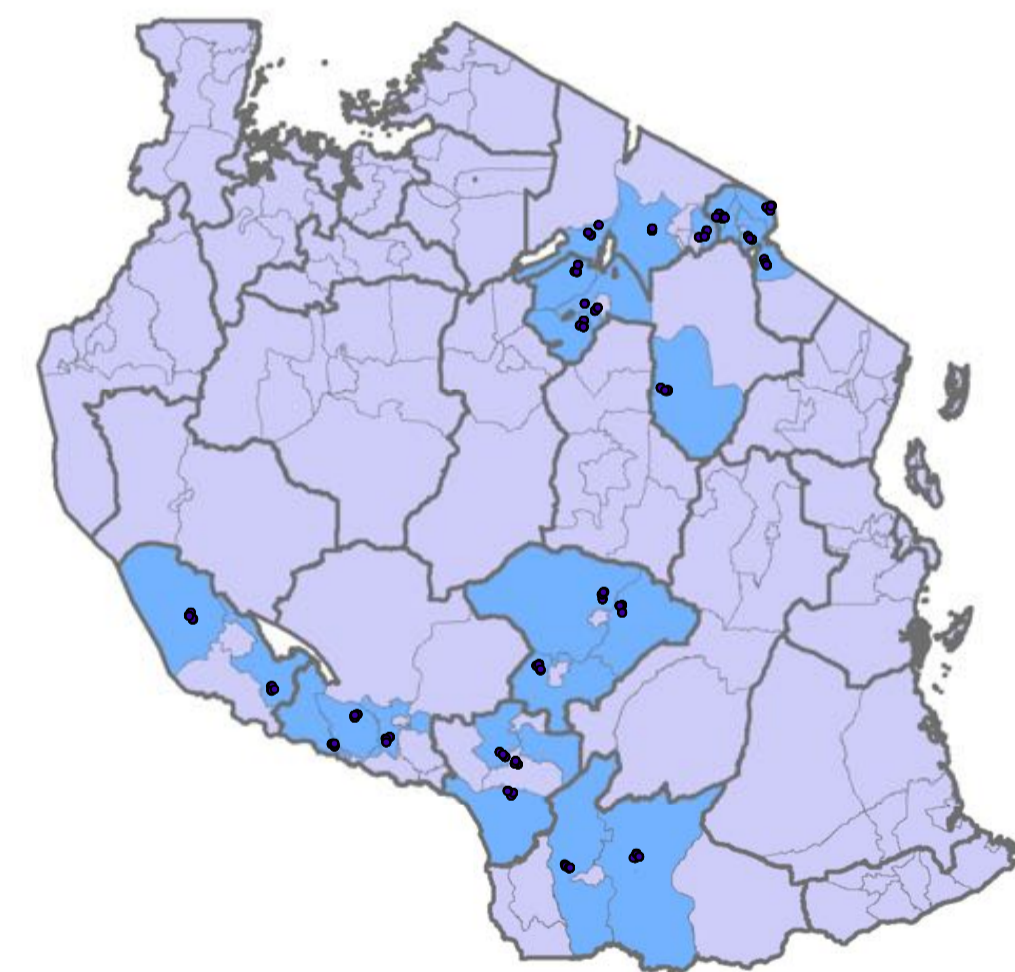
**624 households surveyed in 25 districts, 2016 and 2017**

### Obj. 1.1 Survey underway
**Soil analyses: Spectral and novel rapid indicators of active C/Soil organic C, Econometric maize response - MSU & partners multidisciplinary approach**

### Obj. 1.2. Long-term field trials **on maize-legume interaction identified in Tanzania and graduate students from MSU, SUA and WU have initiated dissertation research.**

## Objective 2. Research on effective extension approaches

1. **VBAAs are village based ag advisors, extension trained lead farmers, selected by communities**

2. **Mother and baby demos:**
   mother demo setup by VBAA to show improved varieties, inputs (bean varieties, with and without seed treatment), conventional extension appraoch
   baby demos VBAA advises ~150 farmers and provides small packs of inputs for farmers to try out, novel farmer involvement approach

3. **Through a randomized control design we are testing if 'baby demo' farmer involvement improves extension approach, adds value through moving beyond technology transfer mother demo approaches**
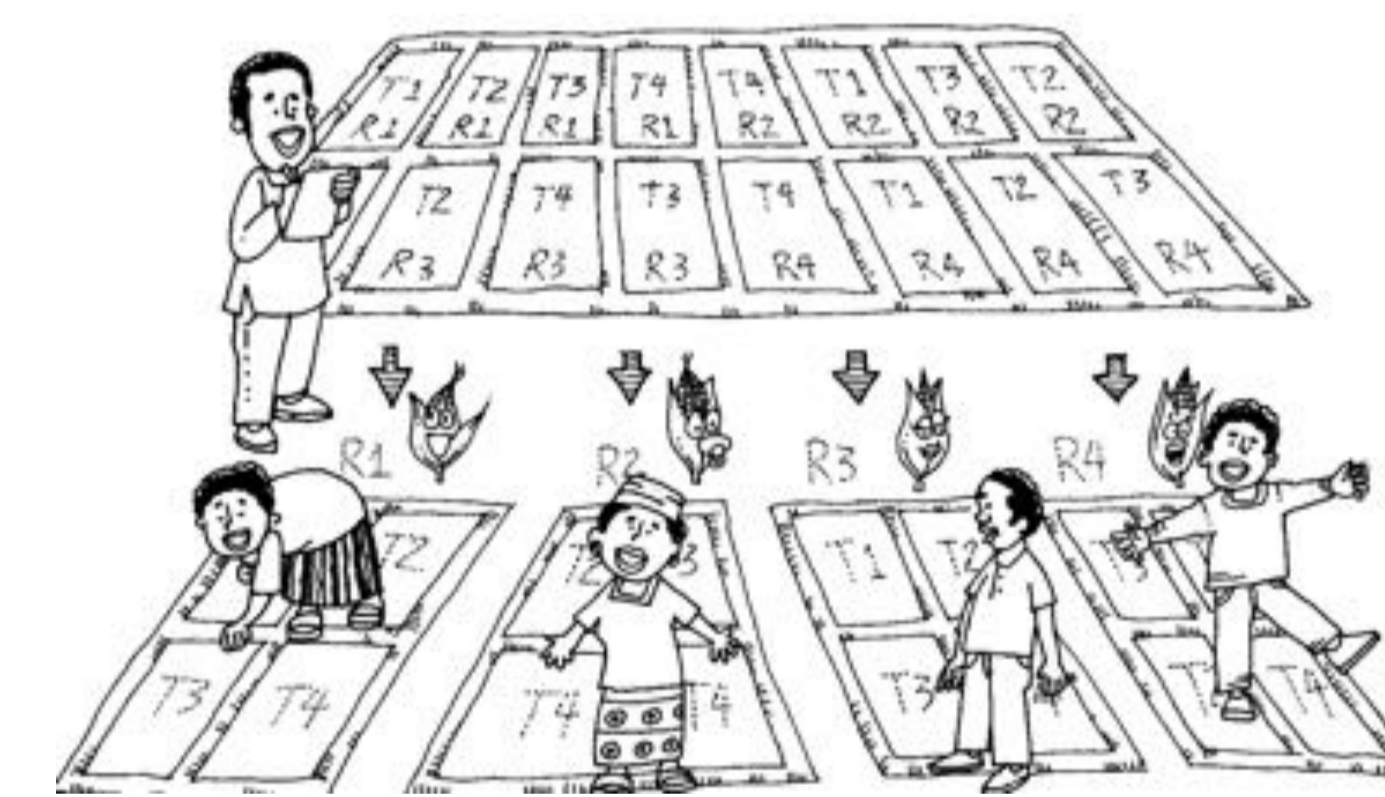
## Project Outcomes:
**Enhanced understanding and policy recommendations on SI technologies**
**Soil and maize legume fertility response quantified** from on-farm surveys
**Extension approaches** documented (do baby demos and VBAAs deliver?)
**Sustainable intensification technology impact on nutrition** evaluated
**Policy recommendations** that improve maize-bean response to inputs, Identified and disseminated.

This SIIL/GCFSI funded project is an example of how multidisciplinary, partnership approaches can be the foundation for sustainable development at multiple scales.

**PUTTING VISION INTO ACTION TOGETHER**

Alliance for African Partnership
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