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

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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 VBA to show improved varieties, inputs (bean varieties, with and without seed treatment), conventional extension approach
   - baby demos VBA 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.