



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



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July 24, 2013

Scaling Agricultural Technologies: Bringing Research to Farmers and the Market

Speakers

Sahara Moon Chapotin, *USAID/BFS*

Jerry Glover, *USAID/BFS*

Bob Nanes, *IDE*

Steve New, *Fintrac*

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Facilitator

Julie MacCartee, *USAID Bureau for Food Security*



Sahara Moon Chapotin

USAID Bureau for Food Security

Saharah Moon Chapotin is Division Chief for Agricultural Research at USAID. She joined the agency in 2006 as a Biotechnology Advisor. Prior to this, she worked at the Biosafety Institute for Genetically Modified Agricultural Products (BIGMAP), Iowa State University, where her work focused on resolving regulatory issues for genetically engineered crops, especially those intended for small and niche-markets. Chapotin holds a B.S. in Biology from Stanford University, a Ph.D. in Plant Physiology from Harvard University and has completed the AAAS Science and Technology Policy Fellowship Program.



Jerry Glover

USAID Bureau for Food Security

Jerry Glover is a National Geographic Society Explorer and Senior Sustainable Agricultural Systems Advisor for USAID. He earned bachelor degrees in soil science and philosophy and then a PhD in soil science at Washington State University in 2001. Prior to his work at USAID, Jerry studied native grasslands and farming systems, including no-till, perennial, organic and integrated systems. He has published the results of his work in *Science*, *Nature*, *Proceedings of the National Academy of Sciences* and *Scientific American* and has been highlighted in *National Geographic*, *Nature*, and three documentary films.



Bob Nanes

IDE

Bob Nanes has been working in agriculture and irrigation development for more than 30 years. During that time he has run two private businesses and managed more than 50 projects as a country director of non-profit, IDE. He contributed to the development of IDE's core agricultural methodology, PRISM (Poverty Reduction through Irrigation and Smallholder Markets), a value chain approach oriented specifically to the needs of smallholder farmers and high value crop production. Nanes is currently living and working in Denver, Colorado and continues to work for IDE as VP of Technology and Innovation.



Steve New

Fintrac

A founding Fintrac team member, Steve New has three decades of agriculture development experience across four continents. He has managed multi-year USAID programs, led FAO, EU and other donor evaluation teams, and advised government ministries and producer associations on issues ranging from codes of practice to market infrastructure. New is particularly adept at forging partner alliances with private companies, locally and internationally, to synergize value-chain development and create new opportunities for women, youth, and other disenfranchised groups. He has a Ph.D. in postharvest physiology.



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Scaling Sustainable Intensification

Jerry Glover

Bureau for Food Security

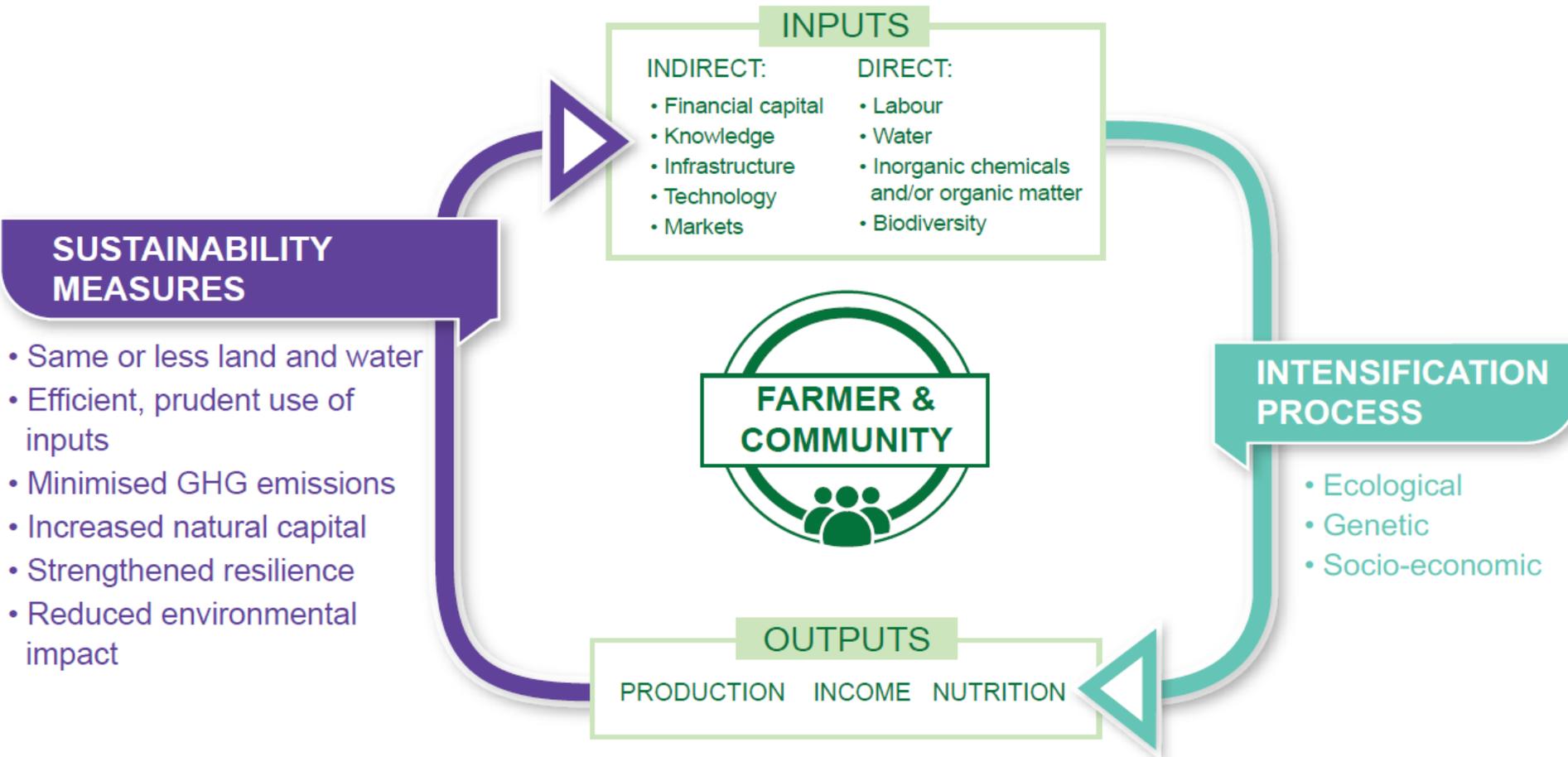
Office of Agriculture, Research & Policy



USAID
FROM THE AMERICAN PEOPLE



Montpellier Panel Report 2013





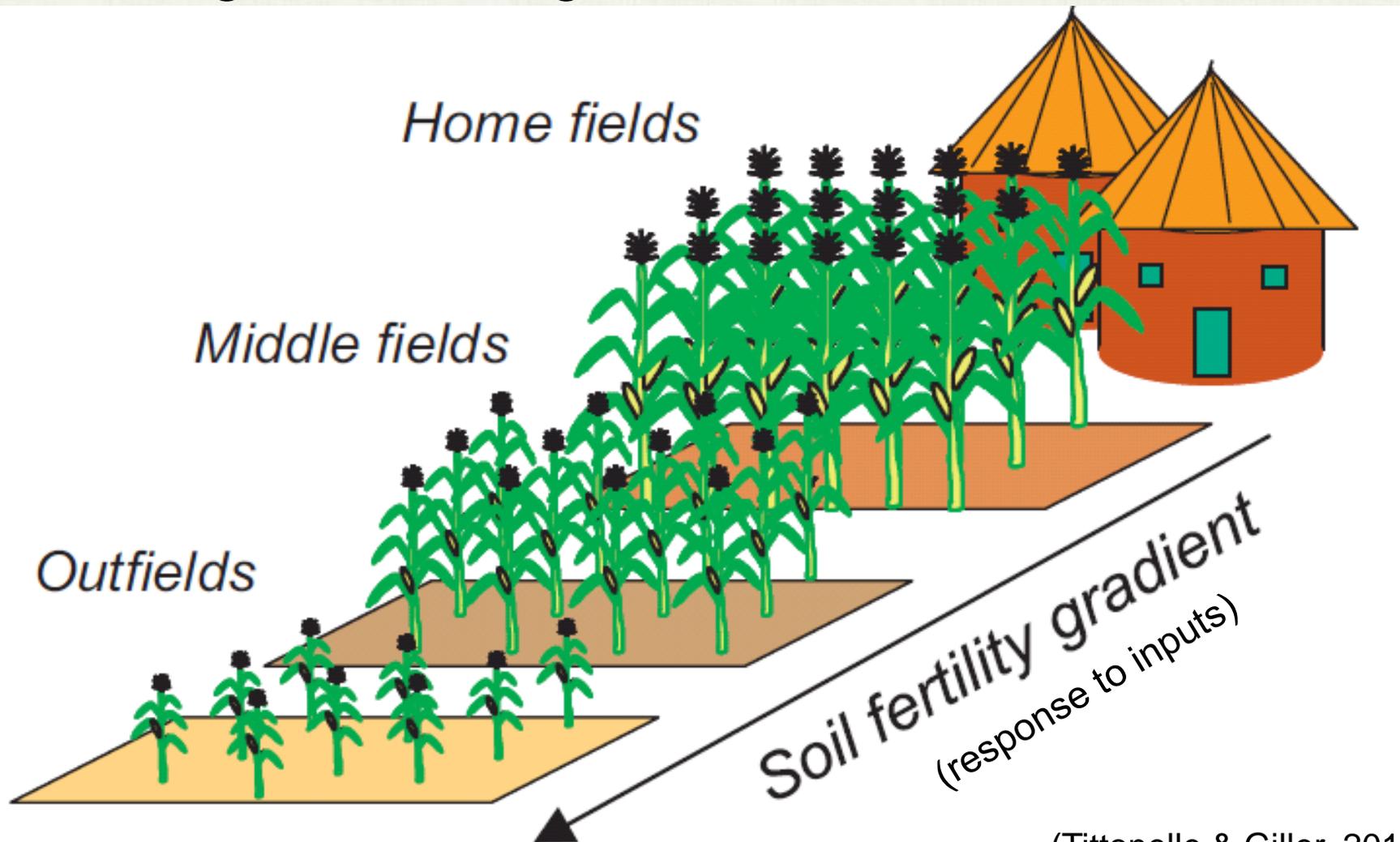
Transforming Key Production Systems

- Integrate available technologies with best practices
- Integrate “demand-driven” research with development interventions
- CSISA
 - Rice-Wheat system of **South Asia**
- Africa RISING
 - Wheat-based system of **East African** highlands
 - Maize- and rice-based systems of **East & Southern Africa**
 - **West African** Guinea Savanna systems





Challenges to scaling: 'Patchiness'





Challenges to scaling: 'Non-responsive' soils

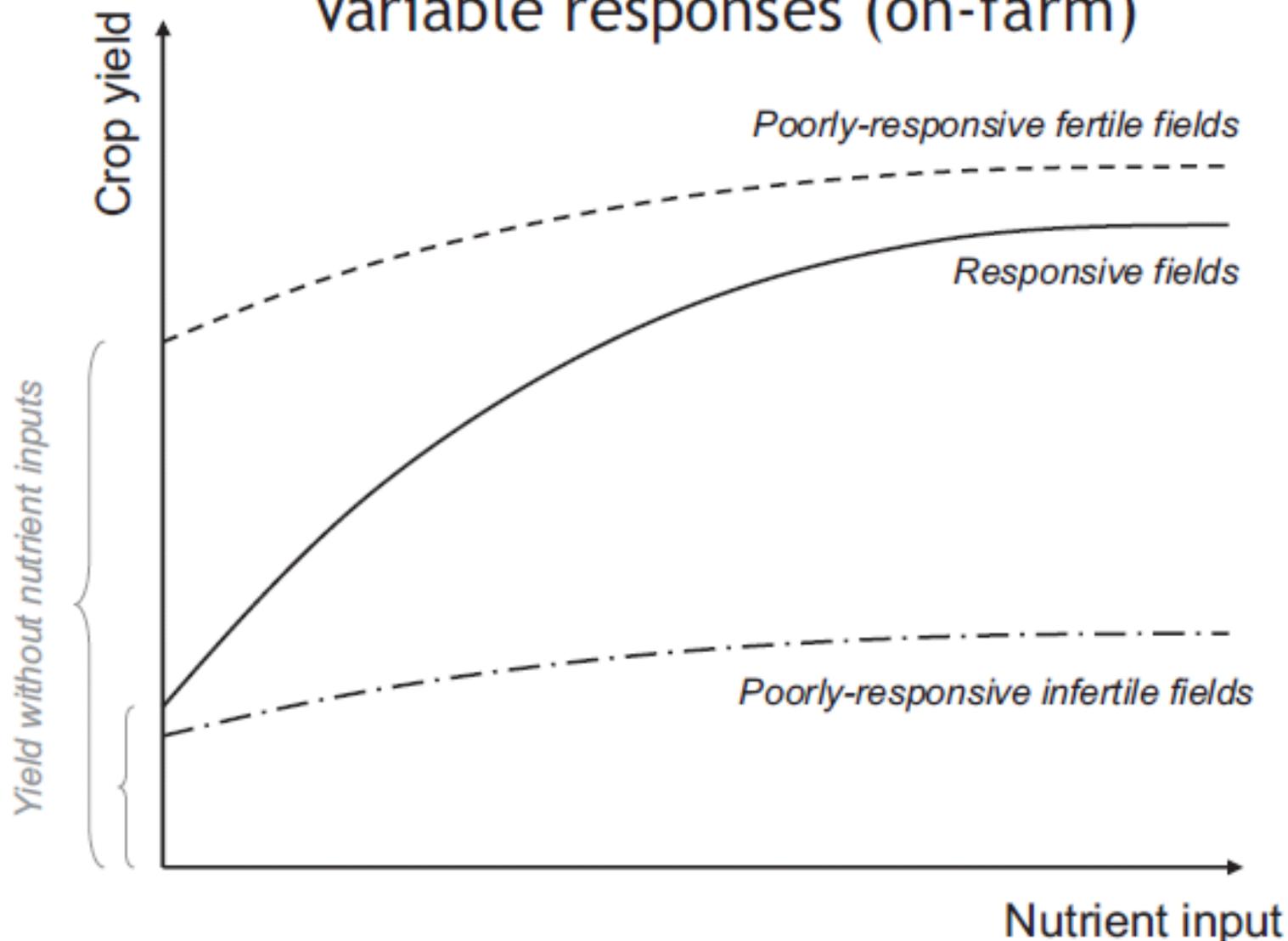
”...smallholder farmers are unable to benefit from the current yield gains offered by plant genetics.

The lack of immediate response to increased inputs of fertilizer and labor in such soils constitutes a chronic poverty trap for many smallholder farmers in Africa.”

(Tittonelle and Giller, 2012)

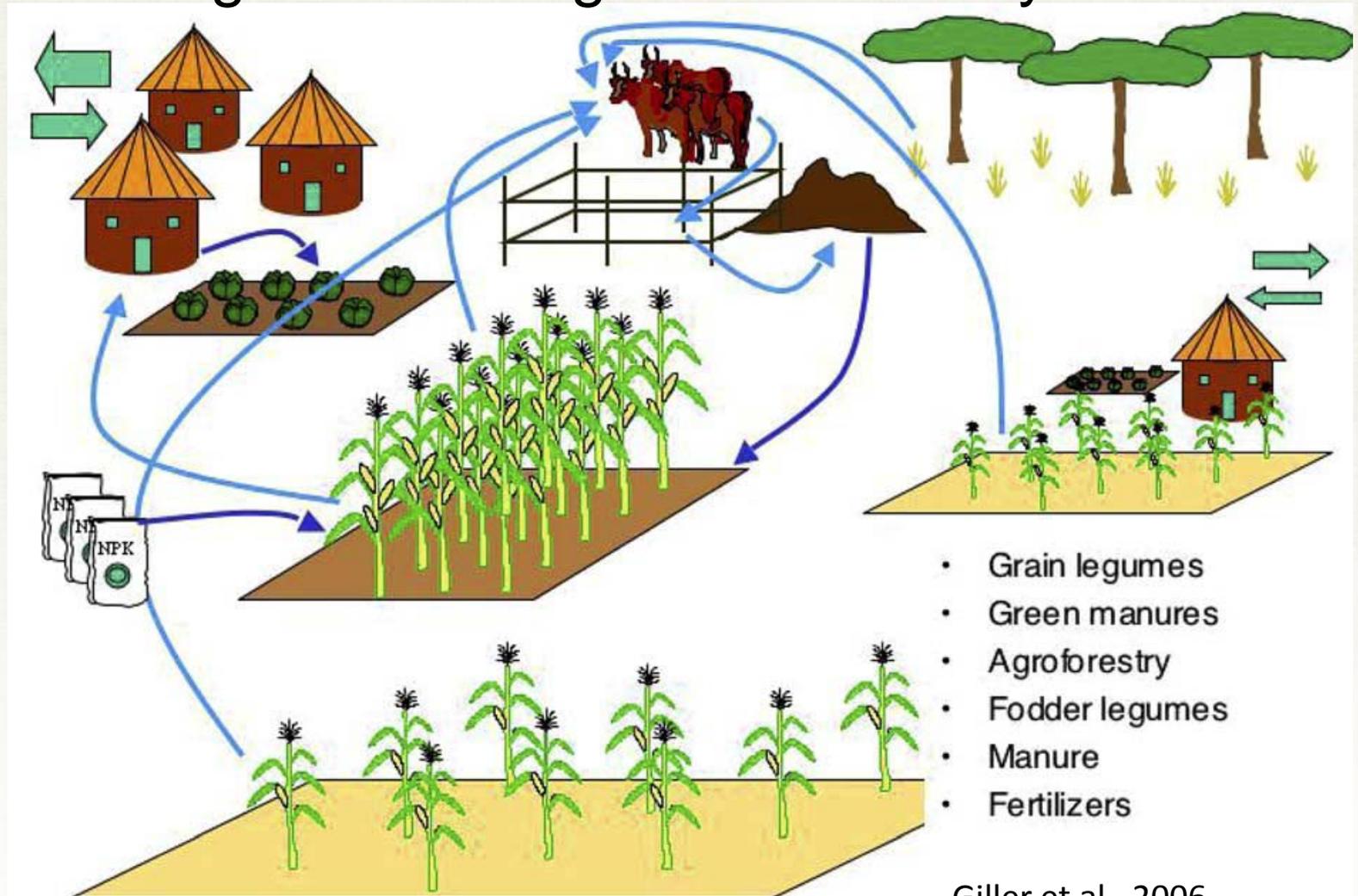


Variable responses (on-farm)



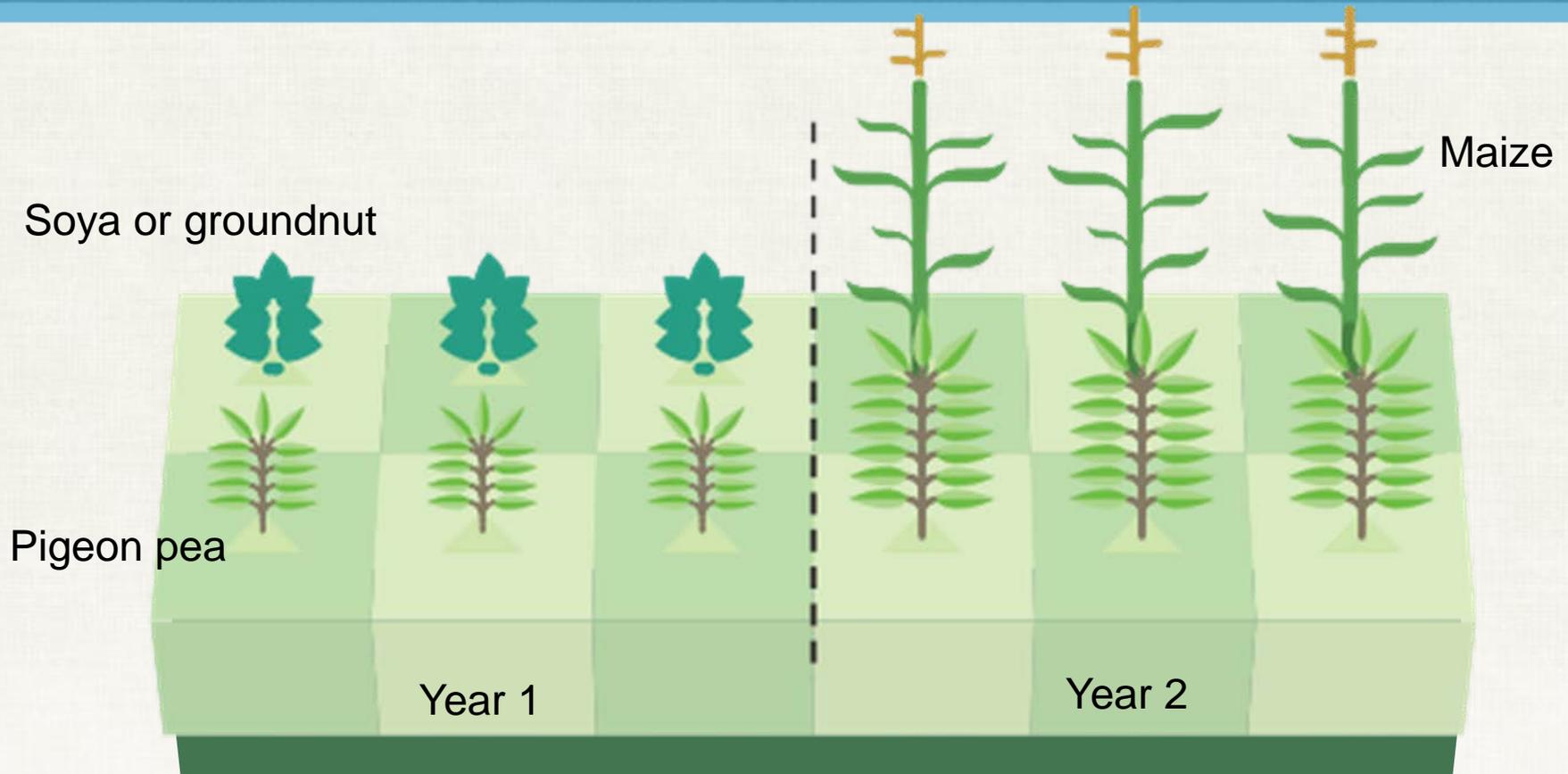


Challenges to scaling: Farm diversity





Doubled-up Legume Systems



DOUBLED-UP LEGUME SYSTEM

- Multi-functional
- Improves yield of protein-rich grains
- Provides fuel & feed
- Reduces soil erosion

(Glover et al. 2012)



Doubled-up Legume Systems



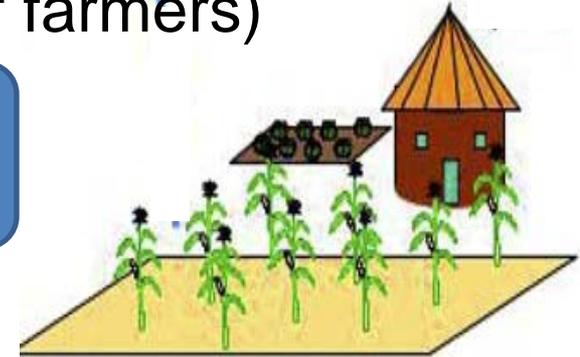


Doubled-up Legume Systems

On-farm, farmer-driven research (100s of farmers)

- CGIAR scientists
- University of Malawi
- Ministry of Agriculture
- U.S. universities

Africa RISING



Public sector:

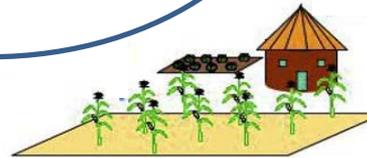
- Extension Program Areas
- Health Clinics
- School lunch programs

USAID/Malawi:
Integrating Nutrition
in the Value Chain

- Dairy
- Legumes

Private Sector

- Inputs
- Markets



(1000s – 10,000s of farmers)



Additional Scaling Opportunities:

Alignment of USAID funding streams

- Pilot project on integrated Food Security, Sustainable Landscapes (GCC), & Biodiversity programming
 - Malawi & Zambia
 - On-farm production of shrubby legumes and tree crops for feed and fuel wood
 - Increased crop yields
 - Reduced deforestation pressures
 - Reduced GHG emissions
 - Addresses major Gov't Malawi policies on fertilizer subsidies, green economy, & emissions reductions





SCALING AGRICULTURAL TECHNOLOGIES



Bringing Research to
Farmers and the Market

Today's Presentation

- Relationship Between Research & Dissemination
- Ag Water Management (AWM) Project
- Outputs of AWM Project
- What IDE Is Doing with the Outputs
- Some Principles Governing Dissemination
- What is Scale?

Research and Dissemination

- Quality interactions with the end-user/customer from the beginning
- Adapting existing technologies, not just creating new ones
- Research should include prototyping and test marketing.
- Dissemination based organizations as partners



AgWater Solutions Project

- Funded by B & M Gates Foundation
- Partners
 - International Water Management Institute (IWMI)
 - IFPRI
 - Stockholm Environment Institute (SEI)
 - FAO
 - IDE
 - CH2M Hill



AWM Focus Technologies

- Motorized Pumps
- Rainwater Harvesting
- Tapping Groundwater

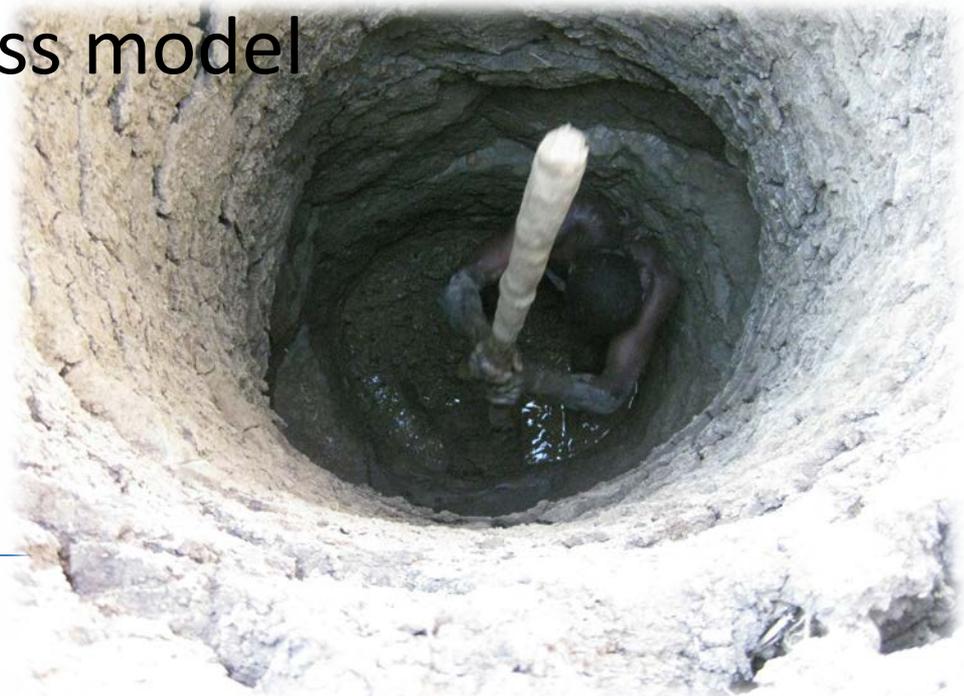
Example: Research Into Use Motorized Pumping

- Learn what makes a good pump
- Determine set of criteria for making recommendations
- Create partnerships with private sector supply chain actors: Importers, wholesalers, retailers
- Create/Improve private sector service providers
- Promotional campaigns



Example: Research Into Use Manual Well Drilling

- Finding Appropriate Areas
- Training local well-drillers
- Apprenticeship
- Create service business model
- Help with promotion



Some principles

- Investment cost is critical
- Higher investment costs needs finance
- Private sector supply chains....don't bypass
- Last mile distribution
is critical
- R&D/Promotion/M&E
need public funding



What is scale?

- Are we forced to sacrifice depth for breadth?
- Scale is only relevant if it produces impact
- Impact is only relevant if it reaches the right people and is sustainable

THANK YOU

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Agricultural solutions to end hunger and poverty

www.fintrac.com

Constraints to Scaling Technology and How to Address Them

Steve New

Fintrac Africa Regional Director, COP for USAID-KAVES

July 2013

Fintrac Methodology



What are the major constraints?



- **Limited access to markets**
- **Uncompetitive business models**
- **Knowledge and application of cost-effective technologies**
- **Finance and credit to purchase and scale up technology**

How are these constraints being addressed?

Smallholder Business Models

- Has cost benefits for growers and buyers
- Reduces cost of production, quality control, and product aggregation
- Less risk for buyers and growers
- Allows for sharing of technologies, expertise, training, and marketing
- Bulk buying of inputs and technologies
- Increases opportunities for finance and credit



Dryland Seed Ltd

- **High market demand for certified seed of grain legumes**
- **Strong smallholder network**
- **Producing high-quality seeds, certified by Kenya Plant Health Inspection Service (KEPHIS)**
- **Technology adopted on pilot scale by farmers**
- **Needs access to finance to scale up to meet demand**



Past Successes



- **Postharvest technology for the vanilla industry in Uganda**
- **Inputs for fresh vegetable exports in Kenya**
- **Plantation technology for smallholder banana production in Zimbabwe**

Opportunities for Scale-Up Support



Partnering for Innovation

A USAID and Fintrac program focused on
**finding and commercializing agricultural technology that can help
smallholder farmers**

Expressions of Interest due July 31.

See www.partneringforinnovation.org/eoi for details



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Upcoming Events

Thought Leaders
in Learning Seminar |
Conquering the Crisis
of Complexity |
July 31

USAID MPEP
Seminar | August 1