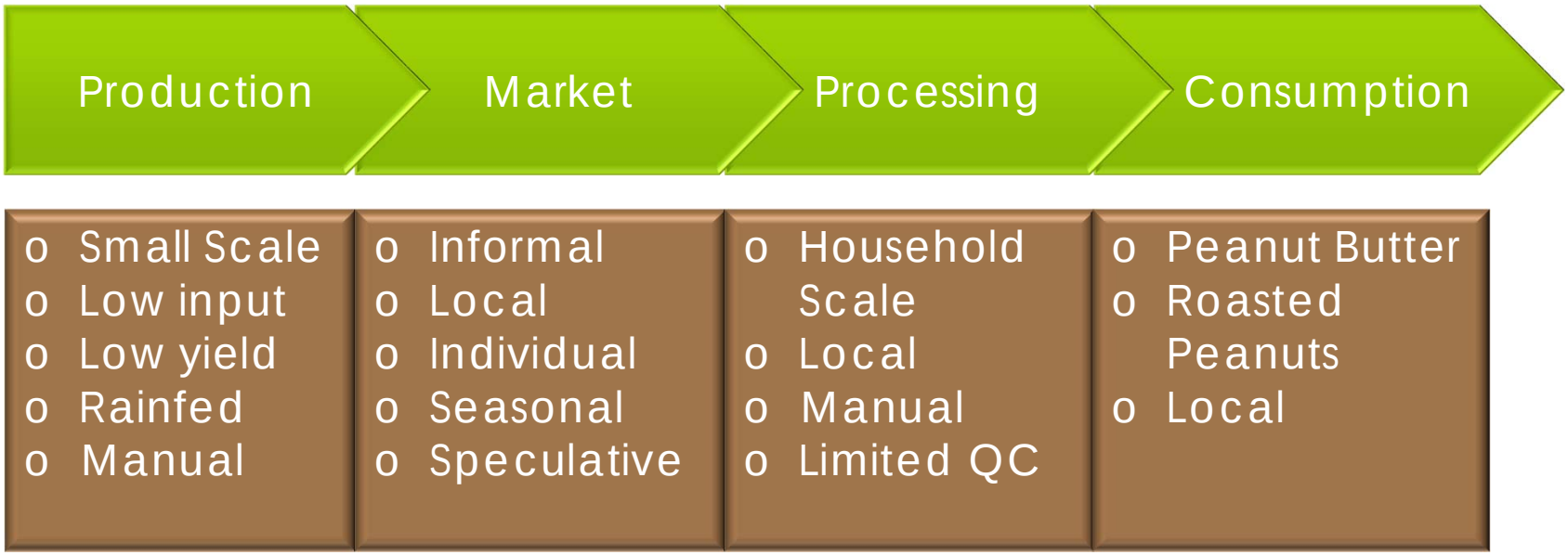
PMIL Efforts in Peanut Value Chain Research

Lessons and Opportunities from Experience in Haiti

Presentation Objectives

- Present the peanut value chain in Haiti and identify key constraints
- Explain applied research history and interventions carried out to address key constraints
- Introduce a scalable solution: Acceso Peanut Co
- Discuss ongoing PMIL research agenda

Peanut Value Chain Model



Production | Market | Processing | Consumption

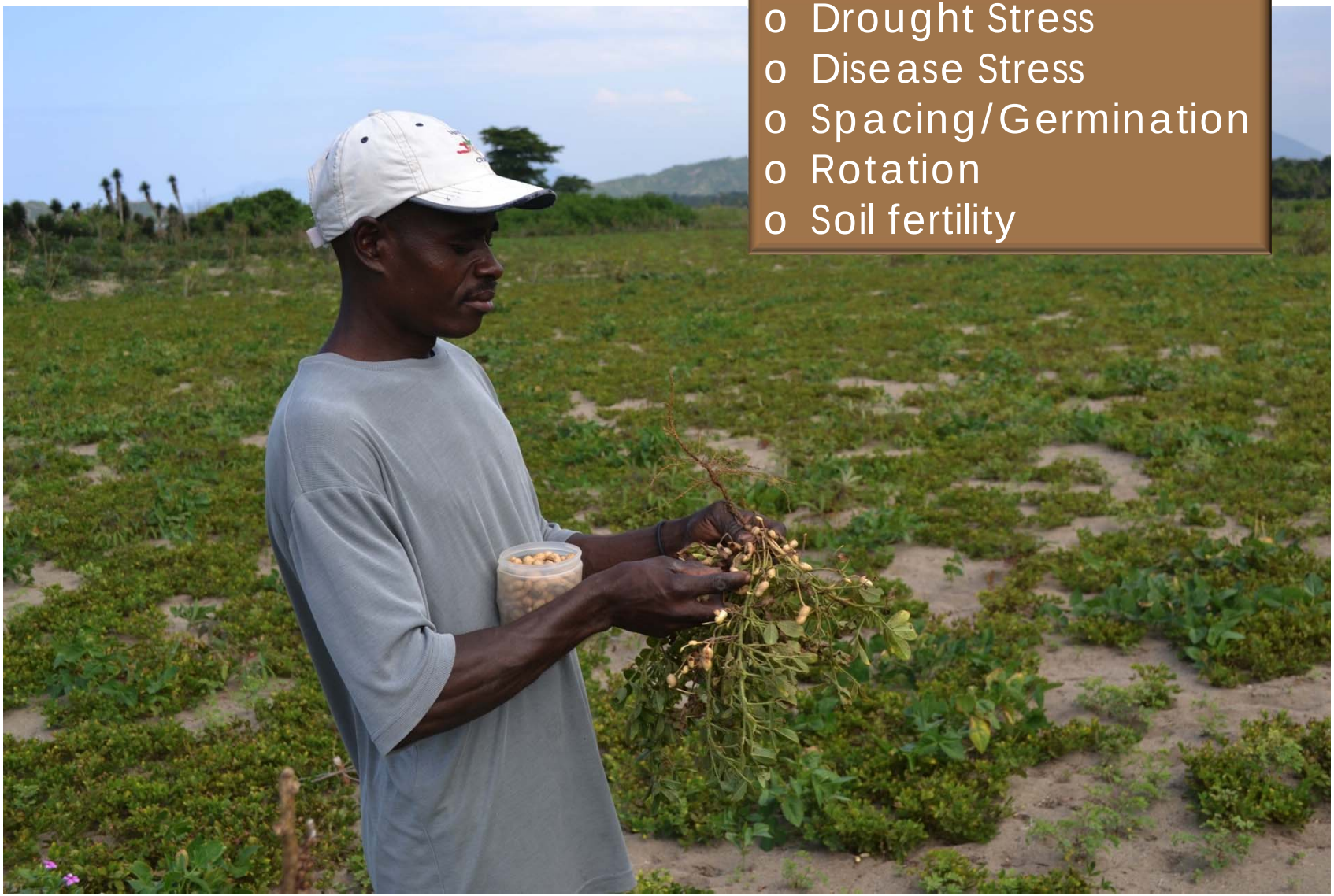
High Production Costs

- Land holding (0.5ha/1.2ac)
- Low tech, manual labor (cash & collective)
- High cost of inputs (seed & labor)
- No formal credit for agriculture

Low Yields (~400kg/ha)

- Rainfed
- Disease
- Low soil fertility
- Low quality seed (genetically & physically)
- Unskilled labor
- Limited/no inputs

- Mixed Cropping
- No Rotation
- Trees in landscape
- No Mechanization
- Poor Germination
- Suboptimal seed spacing



- Drought Stress
- Disease Stress
- Spacing/Germination
- Rotation
- Soil fertility

- Labor costs
- Security
- Drying tarp improvement

Production | Market | Processing | Consumption

Post-Harvest Handling

- Incomplete drying
- Insecure, unventilated storage

High Prices (~$1.50/kg farmer stock, $1500/ton)

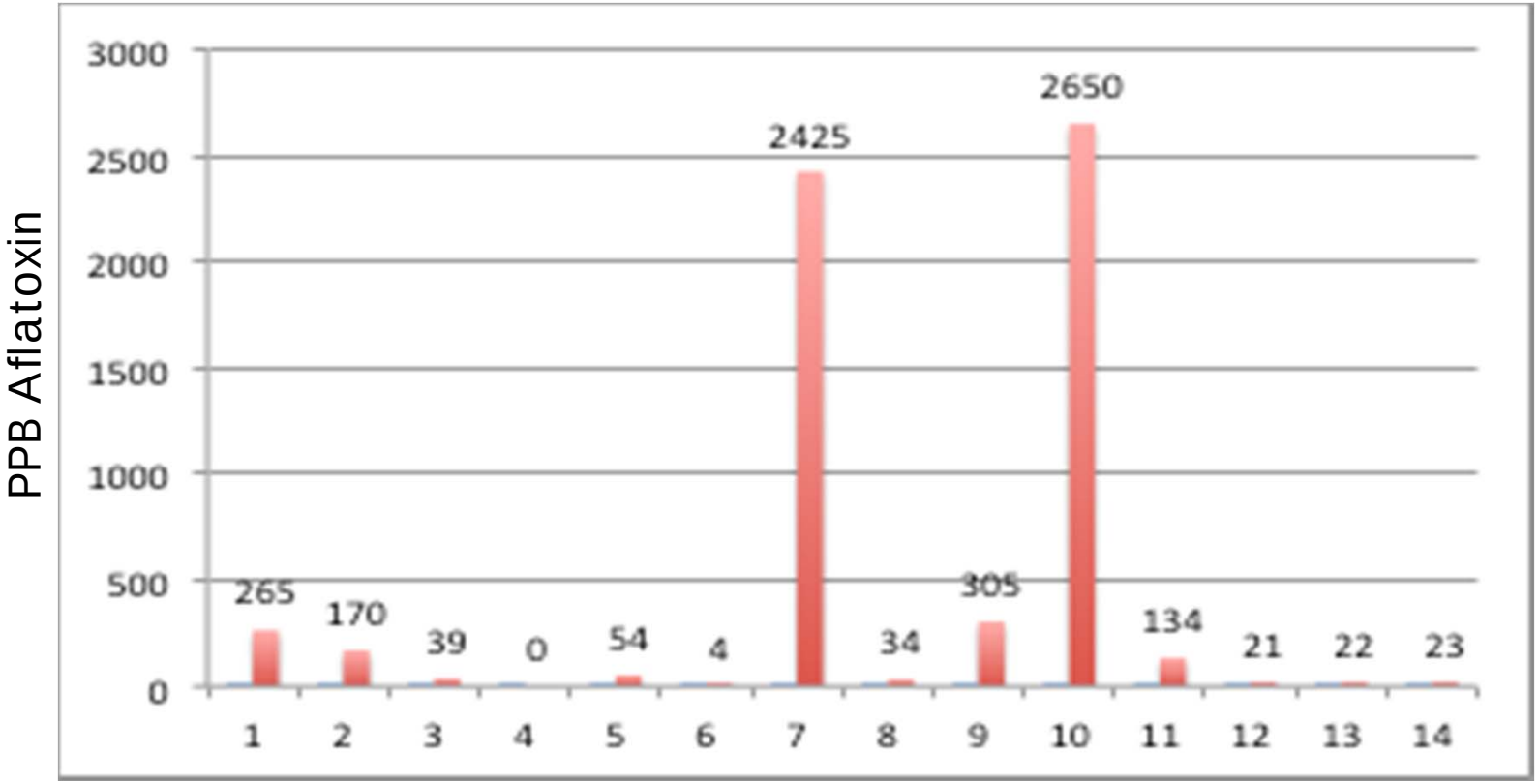
- Seasonal Volatility
- Fragmented market chain
- Exploitative speculation by middlemen

Low Quality

- Rampant aflatoxin
- Immature peanuts

- Small traders = high transaction costs
- Volumetric trading = no quality valuation
- Transportation
- Bag improvement

Example of Aflatoxin Contamination



Filbert, Meghan and Brown, Dan, September, 2012. *Aflatoxin Contamination in Haitian and Kenyan Peanut Butter and Two Solutions for Reducing Such Contamination*. Journal of Hunger & Environmental Nutrition 7:321-332.

No Economies of Scale

- 95% goes to informal sector
- Manual processing
- No quality control

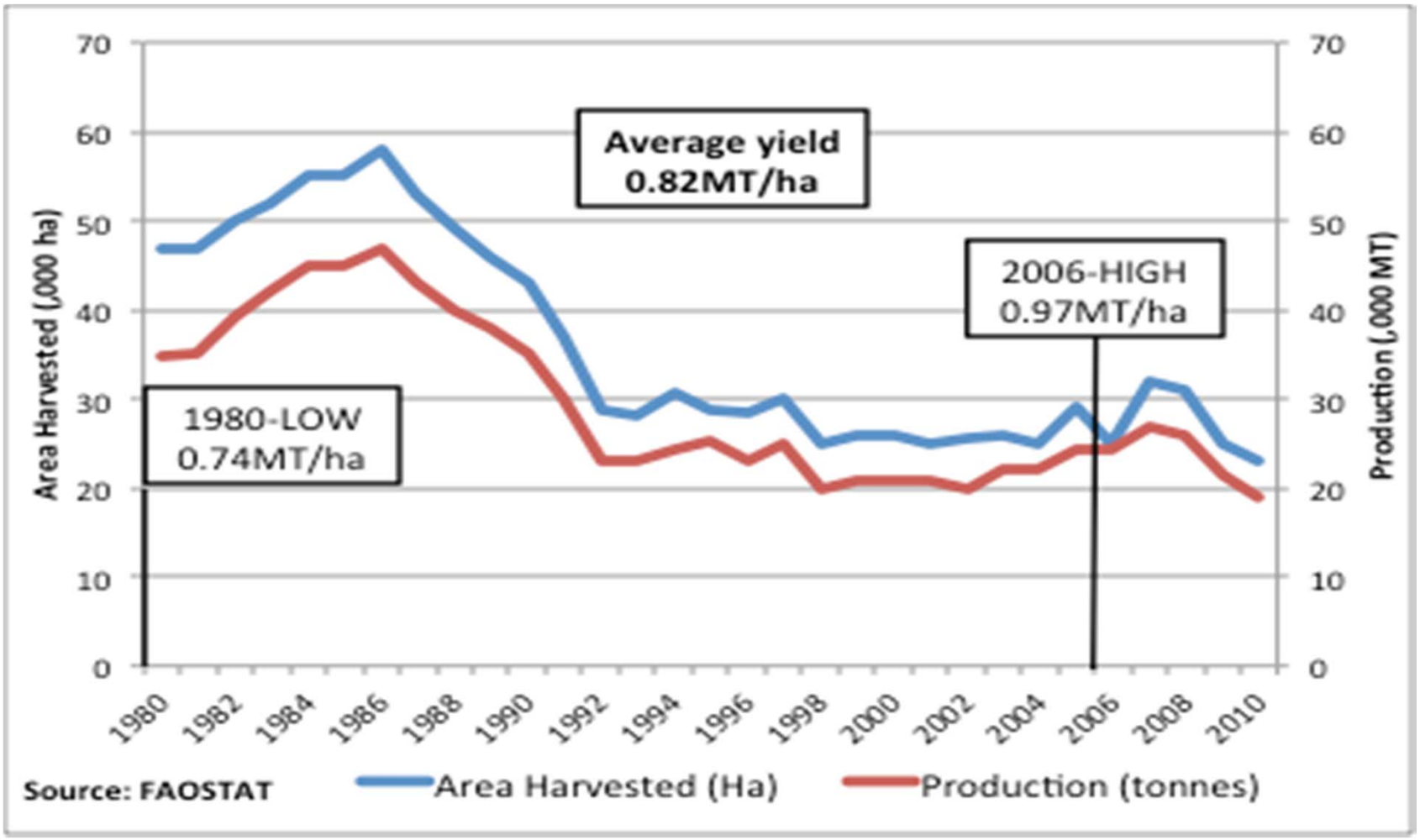
Peanut Butter at household/community scale

Roasted peanuts at local market

No alternative/waste stream uses (oil)

High Cost/Low Value Product for Consumer

Haiti Peanut Production



Meds & Food For Kids

Mission: "Meds & Food for Kids(MFK) is dedicated to saving the lives of Haiti's malnourished children and other nutritionally vulnerable people."

- Production & Capacity Building
- Nutrition R&D
- Agriculture Development

MFK Peanut Demand & Capacity

- UNICEF, WFP major clients (including export)
- Competition from international manufacturers (lower price)
- 1000MT/year finished product (22% is peanuts = 400MT farmer stock)
- 0.5MT/hr processing capacity
- 4ppb aflatoxin consistently
- Still only buy 30MT/year!

Peanut CRSP Research (2008-2012)

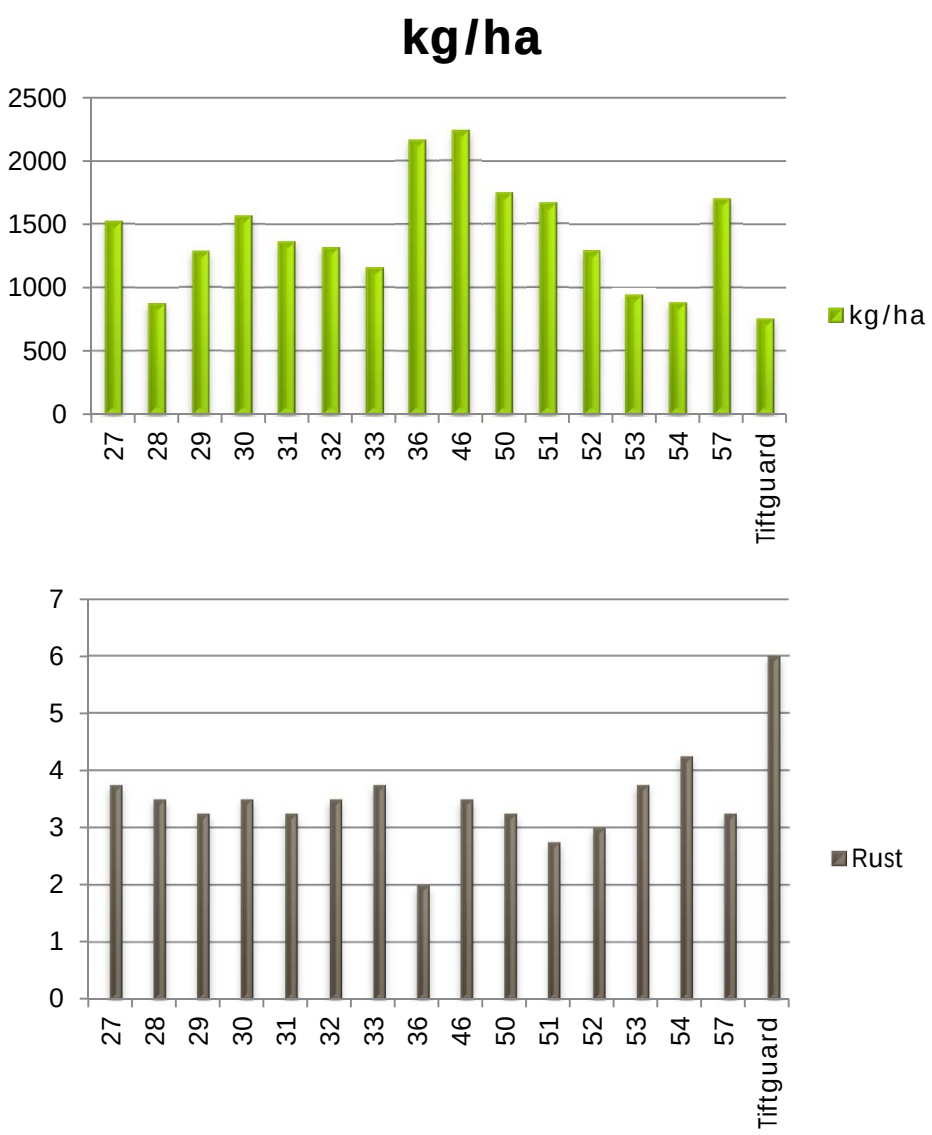
- High Cost of Production
  - Livelihood Survey*
  - Mechanization
  - Seed systems
- Low Yields
  - Training farmers, students & agronomists
  - Creole language production guide
  - Variety trials
  - Input trials (fungicide, fertility)

*recall data + empirical data

Mechanization

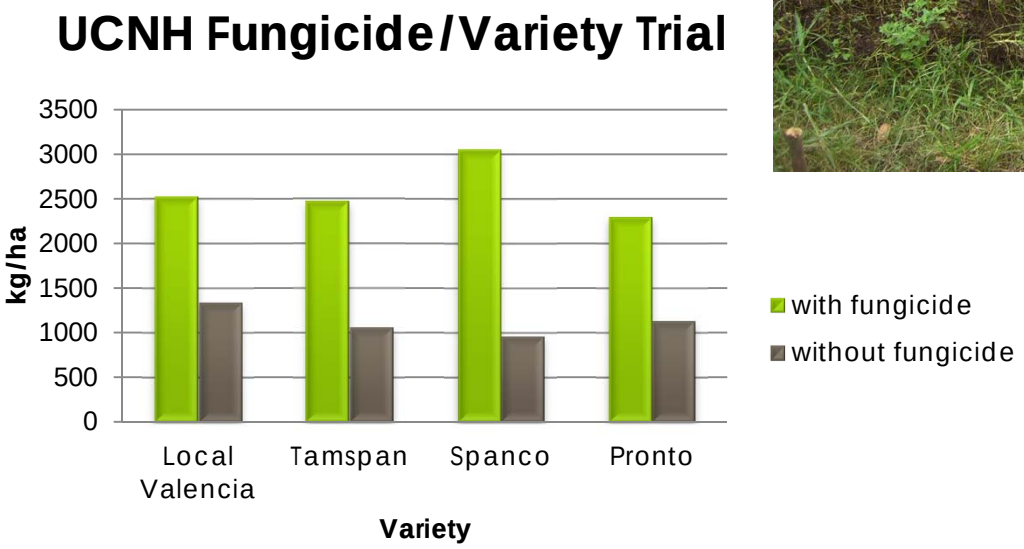
- Soil prep reduced >25%
- Scale increased to 0.5ha/day
- Reduce harvest costs

Variety Trials



Variety/Fungicide Trials

Randomized replicated plots with 3rd year agronomy students in Limbe, Northern Haiti



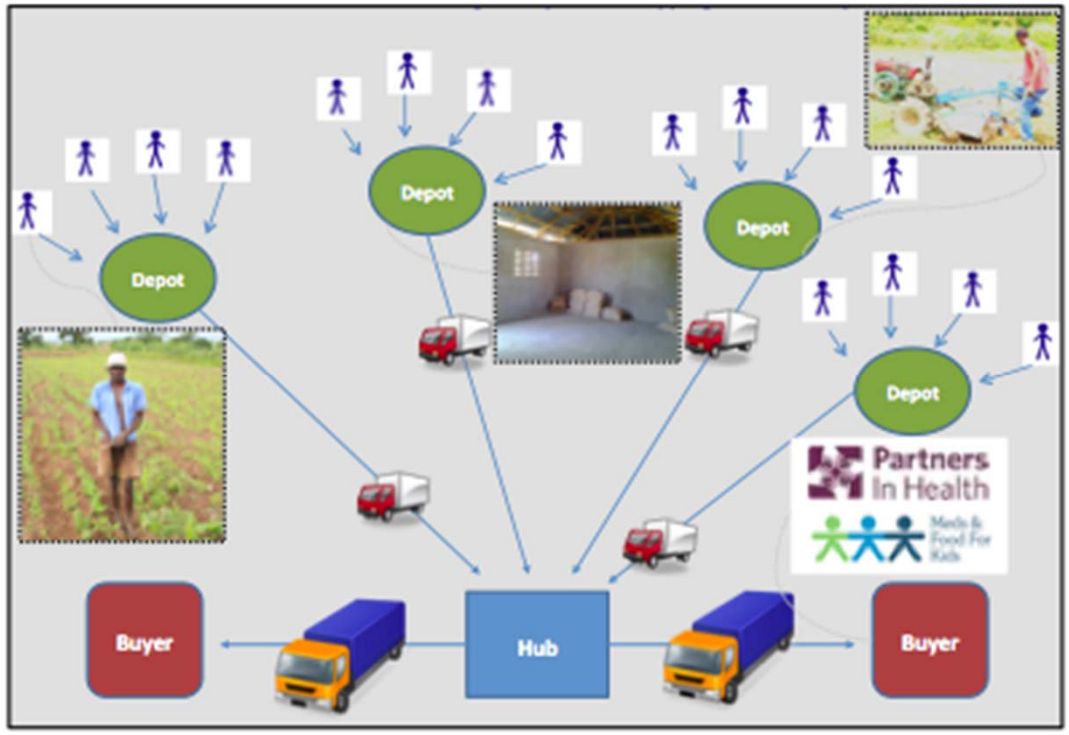
What's next?

- Yields can be improved by >2x
- Cost can be reduced or balance w/ added inputs
- Scalable
- Profitable

How can we make these technologies accessible?

ACCESO PEANUT
ENTERPRISE CORPORATION

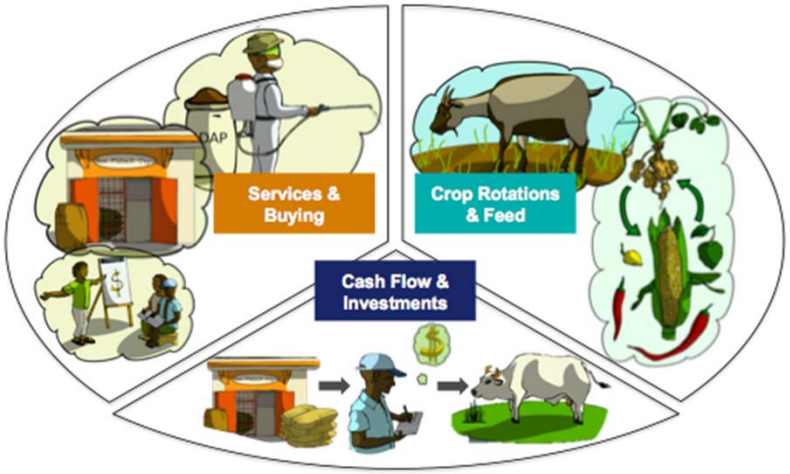
- Clinton Guistra Social Enterprise Fund
- Haitian-owned, for-profit corporation
- Depot-based, input credit network
- Repayment in product
- GIS calculated credit, inputs, market
- 2014 pilot program with 750 farmers
- 2016: 2000 farmers in 3 regions, 1000MT

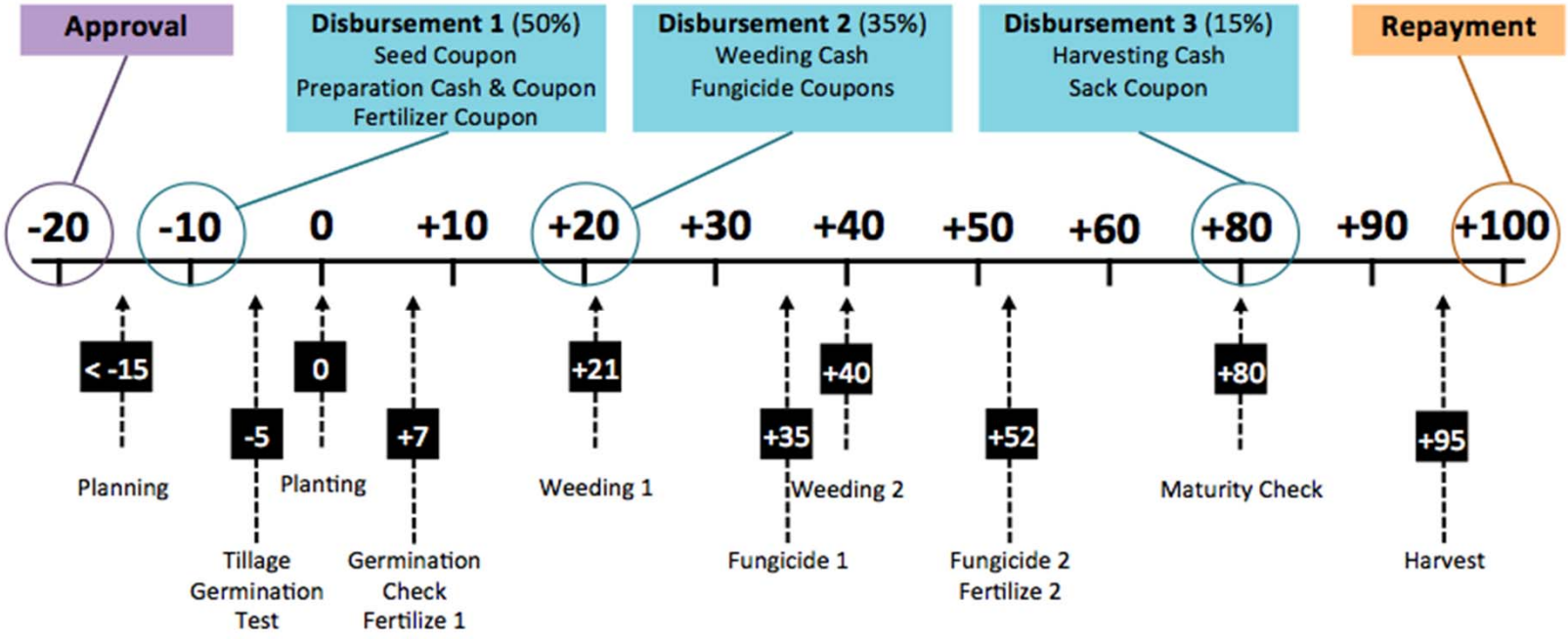


Input Credits

- Mechanization Voucher (trained operators)
- Seed Credit (improved variety, quality seed)
- Fertilizer (access to gov't subsidy)
- Fungicide Voucher (trained operators)

Pay for Performance Training & Management





PMIL in Haiti

Evaluatue Socioeconomic (G. Kostandini)

- Livelihood data
- Production data
- Tablet Survey- GIS data

Applied Research on Tech Pack (G. Macdonald)

- Input evaluation (Fung & Fert)
- Variety evaluation
- Mechanization Package
- Future endeavors: Rainfall insurance, Rotation

Aflatoxin Control (D. Brown)

- Best Management Practices
- Quality Assurance Protocols
- Waste Products

Thank You!
Questions?