

# Scalable Solutions for African Small Farmers

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## Some principles, followed by 4 examples

- What farmers want
- Crop insurance
- Market-led extension
- *Farmforce*, a novel mobile app
- The One Acre Fund

# What farmers want

## Technology:

- Seed
- Soil fertility
- Crop protection
- Mechaniz'n

## Inputs:

- Relevant products, accessible
- Infrastructure

## Services:

- Extension
- Credit
- Insurance
- Organizat'n

## Markets:

- Information
- Access
- Predictability
- Subsidies

*Impact (\$/ha/year)*

**Challenge and opportunity:  
To push this in the context of ,pull' from growing  
markets and the on-going economic transformation**

# Crop insurance

*Enables farmers  
to invest*



- **Kilimo Salama:** largest index insurance program in Africa (64K farmers and USD 2.6m ,value at risk' insured in 2012 so far)
- Partnership between SFSA, UAP Insurance, Safaricom, KMD
- Covers farm inputs, expected value of harvest, and other combinations
- Products evolving, responding to farmers' needs
- First crop insurance product worldwide to register *and* compensate farmers via mobile phone

# The model of Kilimo Salama has developed over time

	2009	2010	2011	2012
Crops insured and indexes developed	Maize drought	+ wheat + maize drought and excess rain	+sorghum +beans +potatoes +soya +horticulture	+Coffee, +Cotton, +Sunflower +Greengrams
Distribution channel	Agro dealers	+ MFI's	+ Agribusiness + Trainer agents + Call centre sales	2 MFI's 2 Agribusiness' 100 Agro dealers and agents 12 call centre agents + seed bundle
Insured value	Fixed package for 1 acre	Seeds, Fertilizers, CP for any land size Sponsored by partners	+ Harvest Value + Inputs of any brand at full cost	+ 3 input companies sponsor
Number of index contracts	2	45	90 (all excel based and manual)	120 (automated pricing system)
Target farmer	Small scale subsistence arid areas	+ small scale high potential area	+ large scale high potential area	Small + Large in high potential areas

# Market-led extension



Objective: Timely credit and inputs; organize and mentor farmers to respond to market opportunities

Project partners: KHE, SFSA, Family Bank, Min Agr (Kenya)

# Model of mentoring farmers

- Grower budget preparation
- Access to finance
- Managing incomes and re-investments

- Knowledge empowerment to the growers will lead to independence ensuring long term sustainability



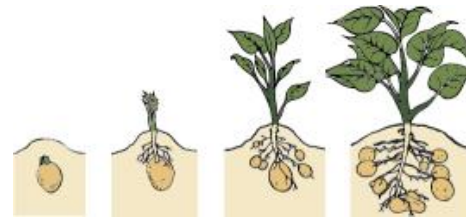
- Maximise marketable yield
- Develop markets for reject and 2nd grade produce
- Ensure compliance and quality and efficiency of internal processes

- Market links, export and domestic
- Managing rejected produce
- Understanding of quality requirements
- Product differentiation where appropriate

- Access to input suppliers and infrastructure development
- Optimum crop & product assortment
- Hands on training and guidance
- Risk management

- Development of an atmosphere of trust and loyalty between relevant stakeholders.
- Active and open communication
- Market intelligence

# The *farmforce* mobile app: scope



## Compliance & Traceability

### Document field activities

all field activities from planting, applying fertilizer, crop protection measures etc. can be registered for full traceability; PHI management

### Risk assessment

survey of farm / working conditions will follow the requirements of Global GAP; other standards will follow.

## Advisory

### Soil information

soil information on macro nutrients, micro nutrients, active carbon etc

### Plant clinic

field staff takes picture, records question (audio) and sends it to Farmforce. Agriculture expert receives question, sees context in expert console and answers directly to farmer / field staff.

### AWS driven disease alerts

disease indexes linked to weather stations monitor disease pressure for planted crops. Farmer / field staff get alert and advise for preventive measures

## Output management

### Crop growth monitoring

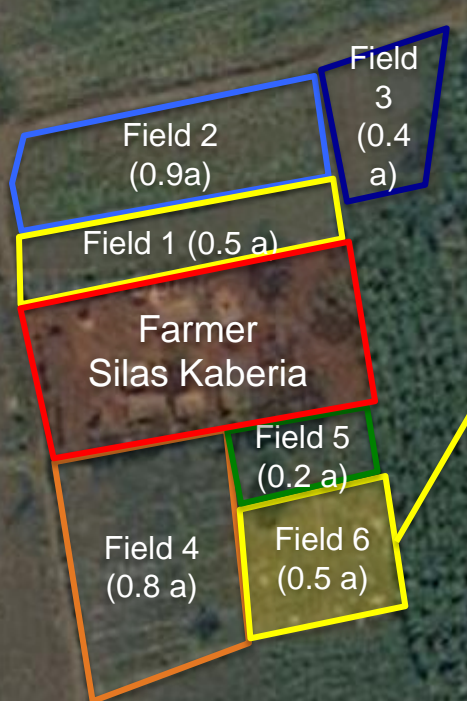
crop performance can be documented in critical stages (e.g. germination, flowering, fruiting etc.) and yield forecast can be updated accordingly. (interesting for contract farming, in particular horticulture)

### Yield tracking

Monitoring pre-harvest interval requirements  
yield tracking on field level → supports farmers to build a track record, simplifies traceability and payout to farmers



# Virtual Farm concept



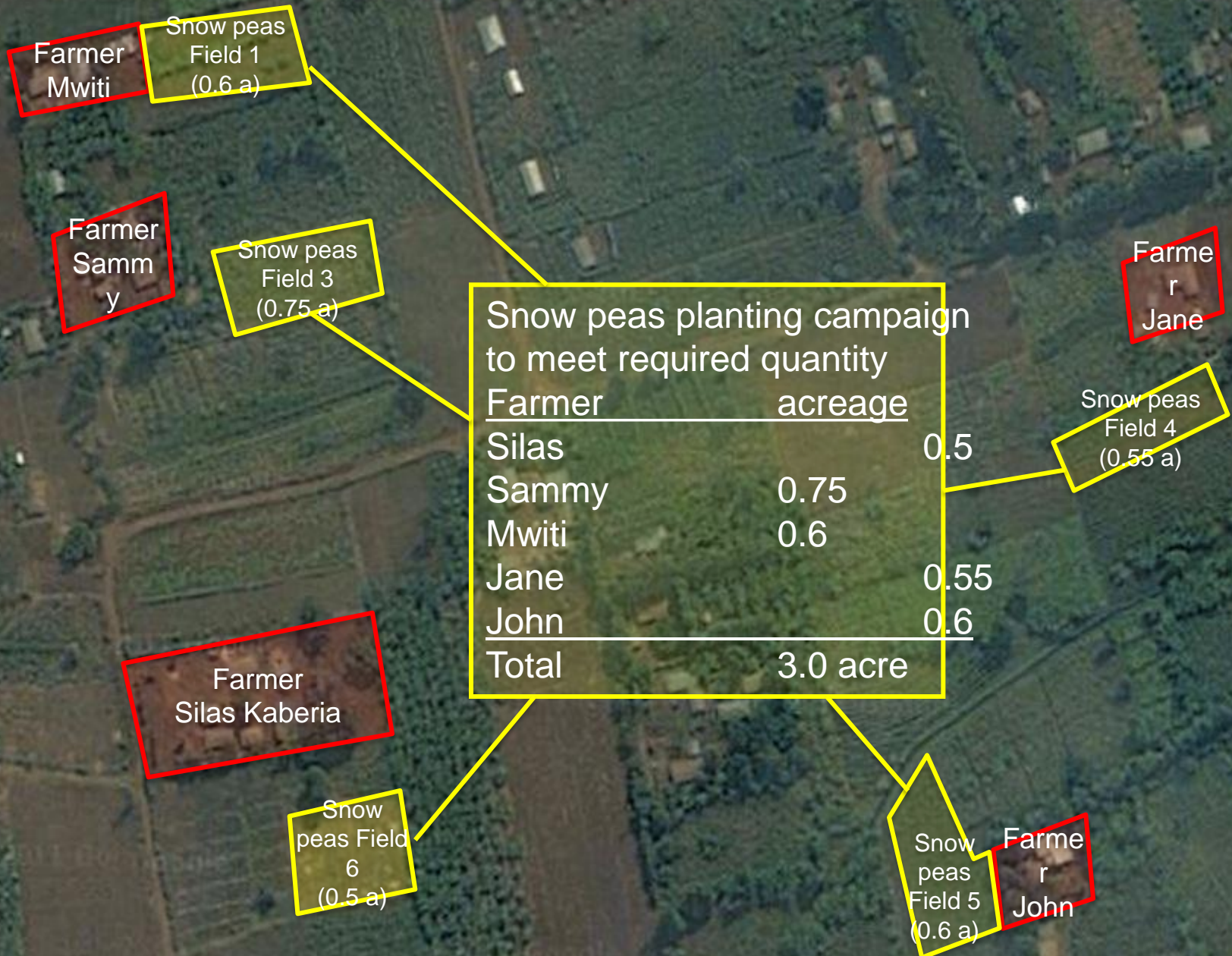
## Cropping cycle "Snow Peas" on field 6

- Planting 15. Oct 2011
- Fertilizer 30. Oct 2011 TSP, 40 kg/acre
- Spraying 15. Nov 2011 Ridomil  
against blight, 1.2 kg/a
- Spraying 05. Dec 2011 Ridomil  
against blight, 1.5 kg/a
- 1<sup>st</sup> harvest 20. Dec 2011 20 kg
- 2<sup>nd</sup> harvest 23. Dec 2011 30 kg

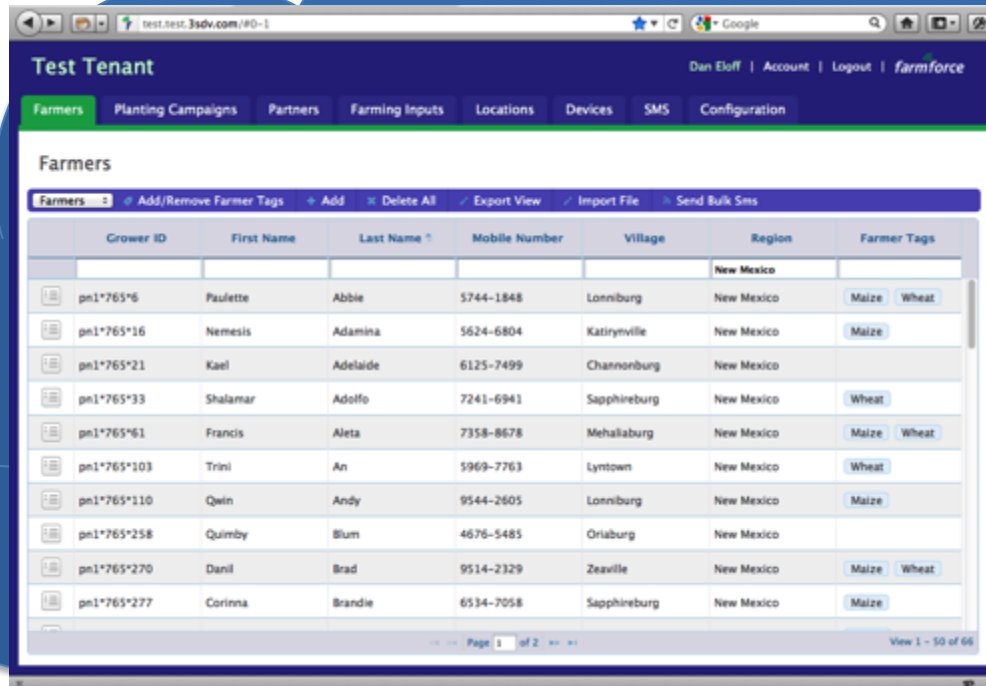
## Cropping cycle "French beans" on field 6

- Planting 15. Jan 2012
- Fertilizer 25. Jan 2012
- Spraying .....
- .....

# Planting campaign concept



# Server and mobile client



The screenshot shows a web browser window displaying the Farmforce application. The page title is "Test Tenant" and the user is logged in as "Dan Eloff". The navigation menu includes "Farmers", "Planting Campaigns", "Partners", "Farming Inputs", "Locations", "Devices", "SMS", and "Configuration". The "Farmers" section is active, showing a table of farmer records. The table has columns for Grower ID, First Name, Last Name, Mobile Number, Village, Region, and Farmer Tags. The data is as follows:

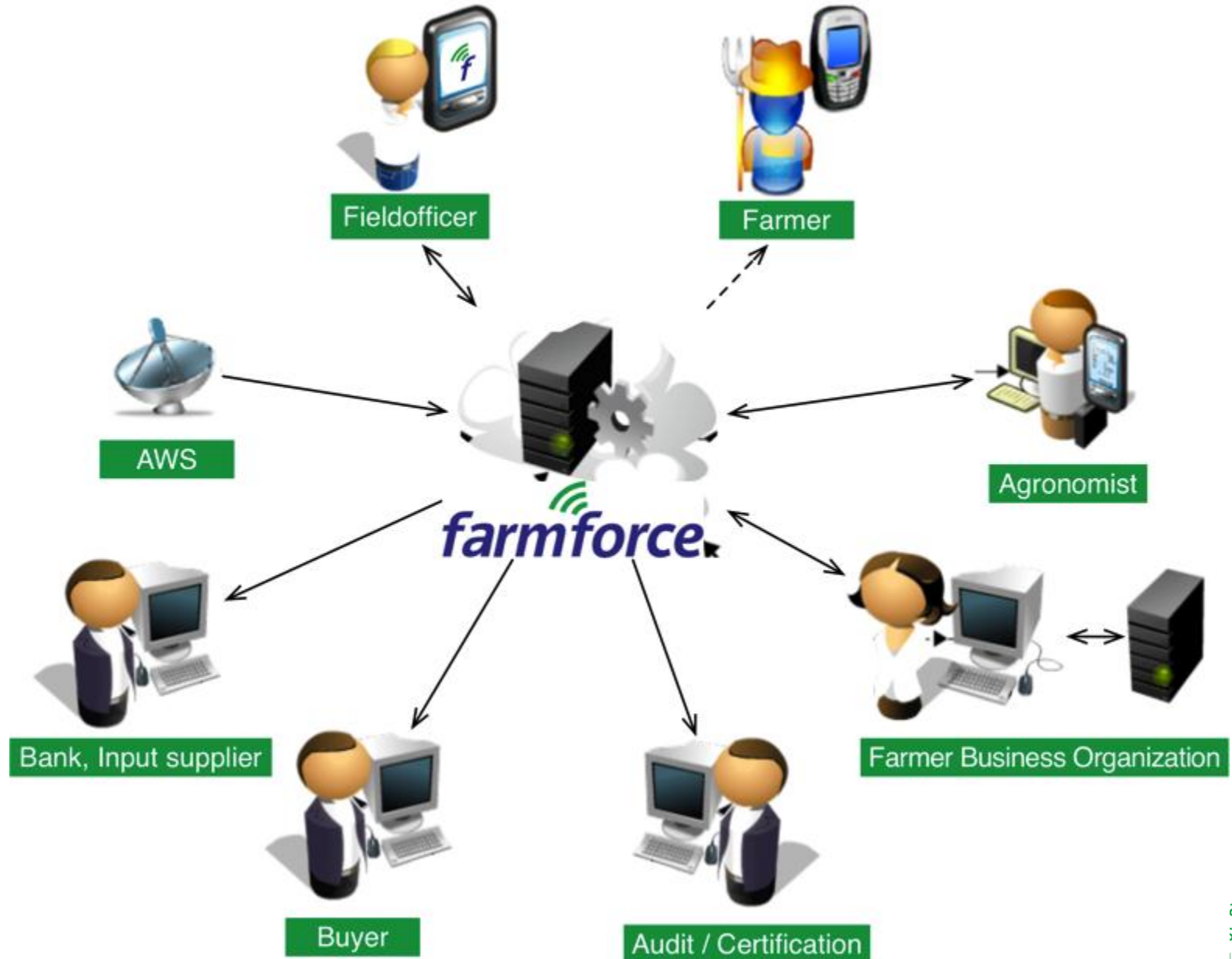
Grower ID	First Name	Last Name	Mobile Number	Village	Region	Farmer Tags
pn1*765*6	Paulette	Abbie	5744-1848	Lonniburg	New Mexico	Maize Wheat
pn1*765*16	Nemesis	Adamina	5624-6804	Katyrville	New Mexico	Maize
pn1*765*21	Kael	Adelaide	6125-7499	Channonburg	New Mexico	
pn1*765*33	Shalamar	Adolfo	7241-6941	Sapphireburg	New Mexico	Wheat
pn1*765*61	Francis	Aleta	7358-8678	Mehalaburg	New Mexico	Maize Wheat
pn1*765*103	Trini	An	5969-7763	Lyntown	New Mexico	Wheat
pn1*765*110	Qwin	Andy	9544-2605	Lonniburg	New Mexico	Maize
pn1*765*258	Quimby	Blum	4676-5485	Oriaburg	New Mexico	
pn1*765*270	Danil	Brad	9514-2329	Zeaville	New Mexico	Maize Wheat
pn1*765*277	Corinna	Brandie	6534-7058	Sapphireburg	New Mexico	Maize



The mobile client runs on Android phones and is used by field staff to enter data

The Farmforce Server is a cloud based web application. It is used by farmer business organizations, producer companies and NGO's to organize and monitor farming activities

# Tool to coordinate the value chain



# The One Acre Fund

- Serves one-acre farm families in East Africa
- Invests in hard-working families
  - Proven impact: double farm profit per acre
  - Non-profit revenue model: farmers pay for services
- 6 years old – starting initial scale up
  - Served 40 farm families in 2006
  - Currently serves 135,000 farm families with 800 staff
  - Will serve 200,000+ farm families in 12 more months, and 1.5 million within the decade

# Innovation 1: 'market in a box' for poor farmers



Producer Groups



Seed and Fertilizer on Loan

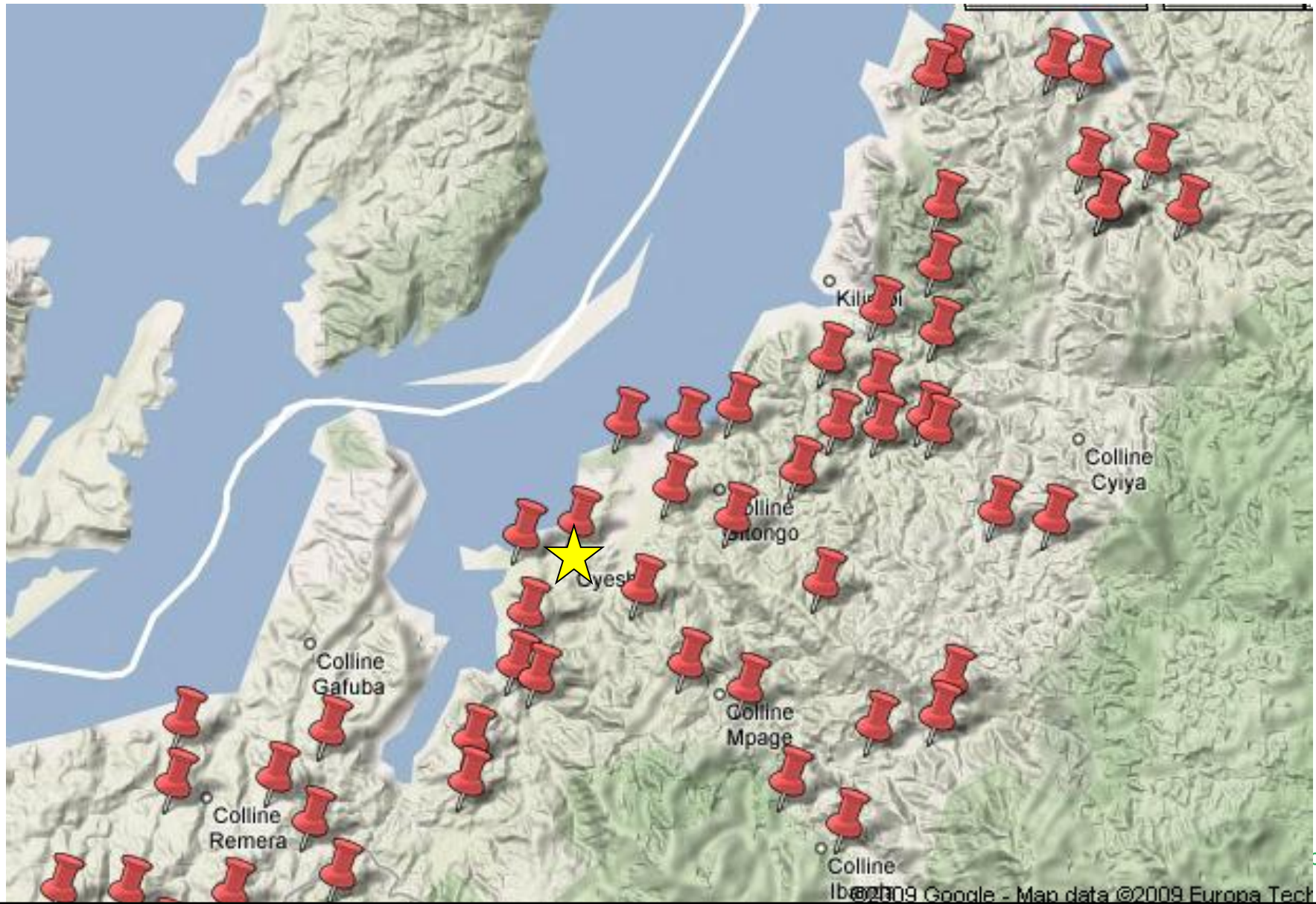


Training



Harvest Market Access

# Innovation 2: Distribution



# Scalable impact

## One Acre Fund Field Unit:

One field officer ... provides the service bundle ... to 250 farm families



Producer Groups



Seed and Fertilizer on Loan



Training



Harvest Market Access

With 1,000+ children in those families





Thank You!