

# Methodology to rapidly create demand for improved crop varieties



University of Nairobi Paul Seward

**FIPS-Africa**  
FARM INPUT PROMOTIONS AFRICA LTD.

**AGRA**  
Growing Africa's Agriculture

[www.fipsafrica.org](http://www.fipsafrica.org)

# Outline

✓ FIPS-Africa: Background Information

✓ The Challenge

✓ FIPS-Africa's Methodology

- Partnerships with Companies
- Village-based Advisors
- Village approach
- Small pack approach
- Multi-technology dissemination approach

✓ Impact

✓ Highlights from work with PASS

✓ Acknowledgements

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# Background to FIPS - Africa

**FIPS-Africa:** *not-for-profit* company

**Our Vision is:** for every farming household in Sub-Saharan Africa to be food secure.

**Our Mission is:** to quickly and cost-effectively improve on-farm agricultural productivity through provision and promotion of appropriate farm inputs, services and advice.

**Our guiding principles include our:**

- Passion to offer solutions to a clear unmet need in the farmers' fields.
- Open-minded approach on how to address needs, incorporating public and private sector.
- Continuous and active innovation, to find better, faster and more cost-effective solutions.
- Commitment to work at the village level, from within the community.
- Belief in 'learning by doing'.
- Understanding that success is all about the people.

**Partners:**

- >20 private sector seed and 3 fertilizer companies
- NAROs & CGIAR
- Ministries of Agriculture Extension Services
- Donors: AGRA, Rockefeller, USAID, DfID, Irish Aid, EU, Norad, BMGF

# Areas of Operation

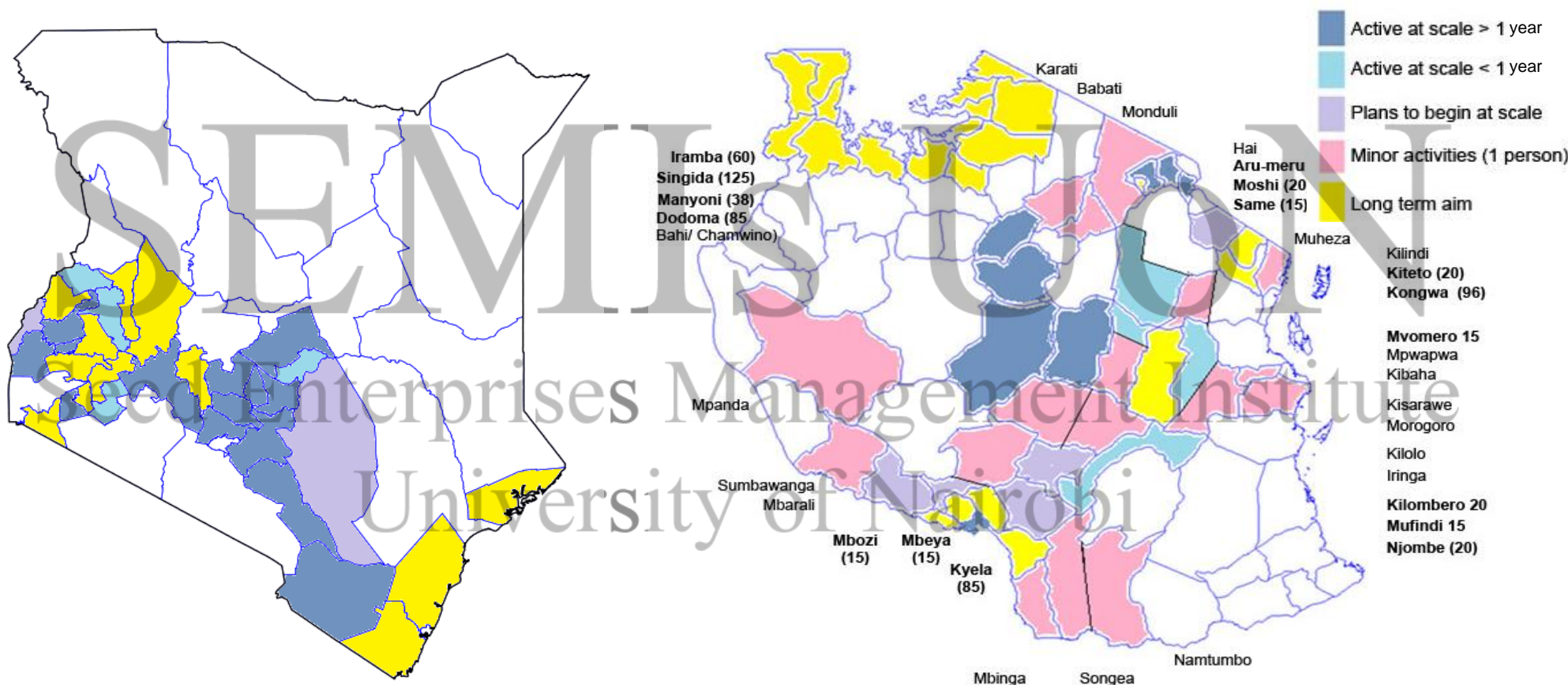
## Scale of operations in Kenya

- 32 districts
- 200 Village Based Advisors (VBAs)
- Combined target to reach 200,000 households

and

## Tanzania

- 25 districts
- 600 agents
- 200,000 households





# The Challenge

Large numbers of small farmers on very small plots of land...



- 4 million farmers –very difficult to reach;

- 0.25 – 2 acres;

- diverse agro-ecosystems

- majority living below the poverty line

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## The Challenge (2)

Producing very little on impoverished soils, using local varieties susceptible to disease



- Farmers complain of lack of extension services

- lack of awareness of new varieties

- inputs rarely available at the Village level

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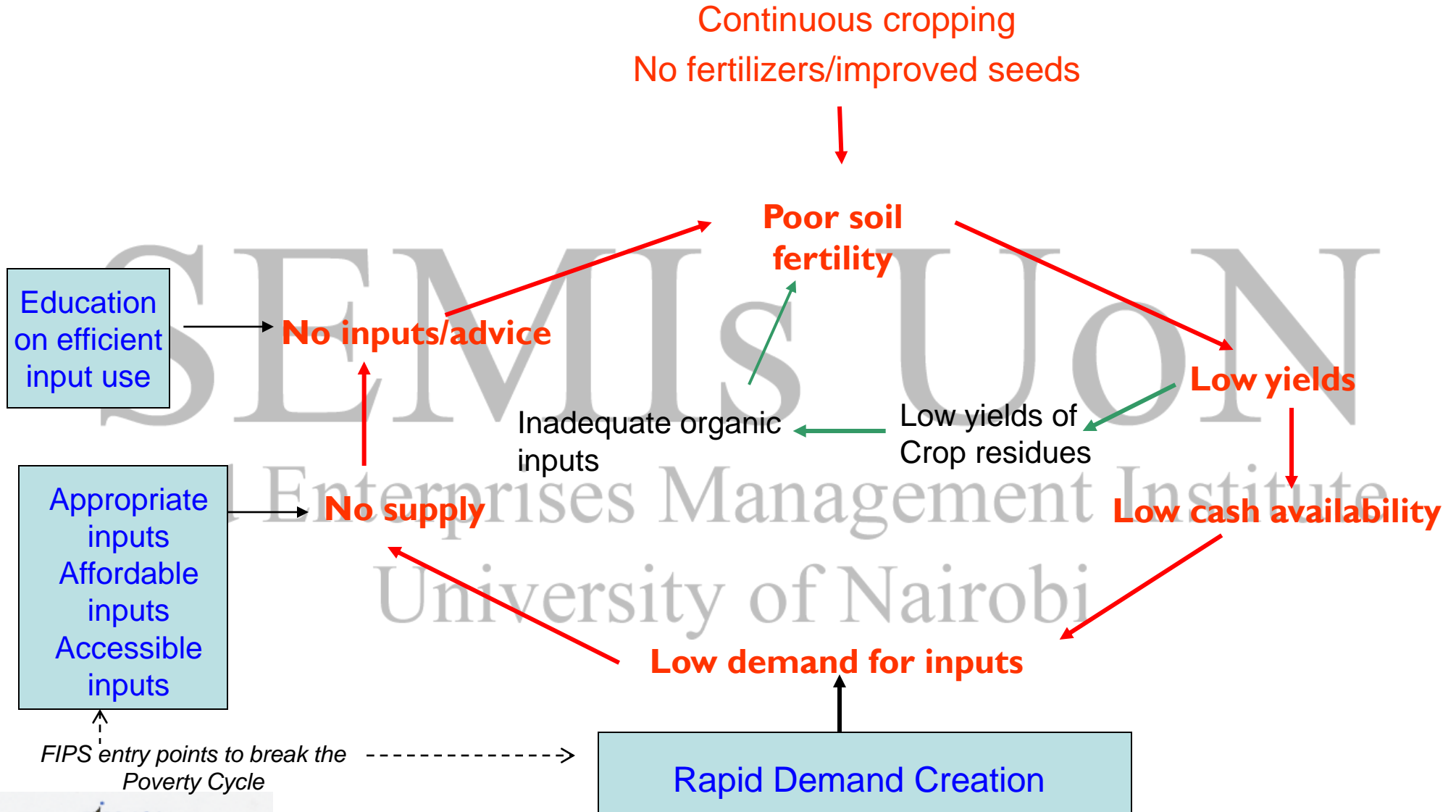
## The Challenge (3)



*Improved varieties have been developed , but....*

*How do we create demand among large numbers of small-holder farmers so they buy increasing quantities of seed of improved crop varieties?*

# Entry Points to break the cycle of poverty



FIPS entry points to break the Poverty Cycle



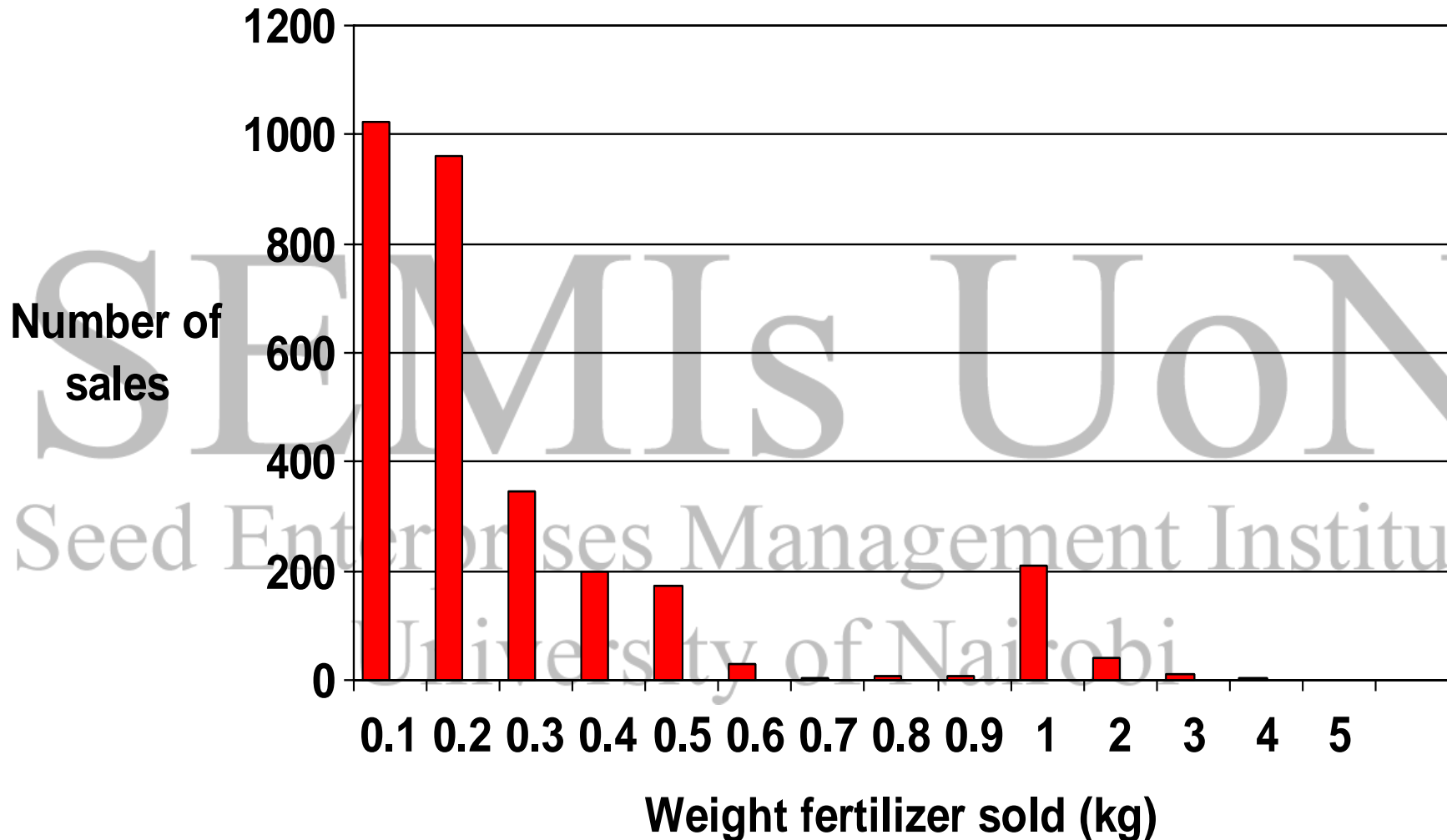
## Methodology: Affordable inputs

Small packs for FMCG (<US\$0.5), but not for fertilizers (50 kg = ca. US\$50), or seeds (2 kg = US\$ 3)



## Methodology: Affordable inputs

Massive demand for small packs of fertilizer amongst small farmers (e.g. Siaya district)



## Methodology: Affordable inputs

1 kg fertilizer bag size (US\$0.65) and small seed packs (US\$0.15) now available



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## Methodology: Accessible inputs

Facilitate supply of appropriate and affordable inputs through networks of farm input stockists in rural areas



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## Methodology: Networks of Village-based Advisors



- Networks of Self-employed Village based Advisors (VBA) = 15 / district
- 1 VBA to advise 500-1,000 farmer families (Village approach)
- 1 VBA to distribute 500 small packs for farmer learning plots/ season
- 1 VBA to sell small packs to 500 farmer families
- VBAs disseminate wide range of technologies simultaneously (multi-technology approach)



# Multi-technology Approach – Farmers afford the seed

## Farmers have diverse needs

- many crops
- carbohydrate, protein, vitamins, cash

## Maize is a difficult crop

- Careful management
- Sensitive to drought
- Seed & fertilizer is expensive

## Success with 1 technology increases trust

- Sweet potato, cassava, chickens all easier
- Vegetables & chickens high value
- Farmers sell tubers, chickens etc and buy hybrid seed.

## Minimal extra cost

Provides income for (self-employed) Village-based Advisors throughout the year





# Multi-technology Approach

Crop	Variety	Partner
Maize	KH500-34A, 31A Olerai 22, 46 WH505, WH403, WH507 PAN691, 7M-97, 4M-19 DUMA41, Punda Milia 53, Simba61	Leldet Ltd Olerai Ltd Western Seed Co Pannar Seedco
Beans	KK8, 15, 22, 71, 72 KAT B1, B9, X56, X69	KARI-Kakamega KARI-Katumani, CIAT TL2
Cassava	Migyera 90005	KARI-Kakamega KARI-Katumani
Sweet potato	SPK4, SPK13, Salyboro, Mugande KSP20	KARI-Kakamega KARI-Katumani
Cowpea	K80	KARI-Katumani, Leldet Ltd.
Pigeon pea	KAT60/8	KARI-Katumani, Leldet Ltd.
Dolichos lablab	DL1002	KARI-Katumani
Tomato	Rio Grande	Safari Seed Co.
Pumpkin	Butternut	Safari Seed Co.

# Methodology: Simultaneous multi-technology dissemination



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# Whole Village Approach – All Farmers try the seed

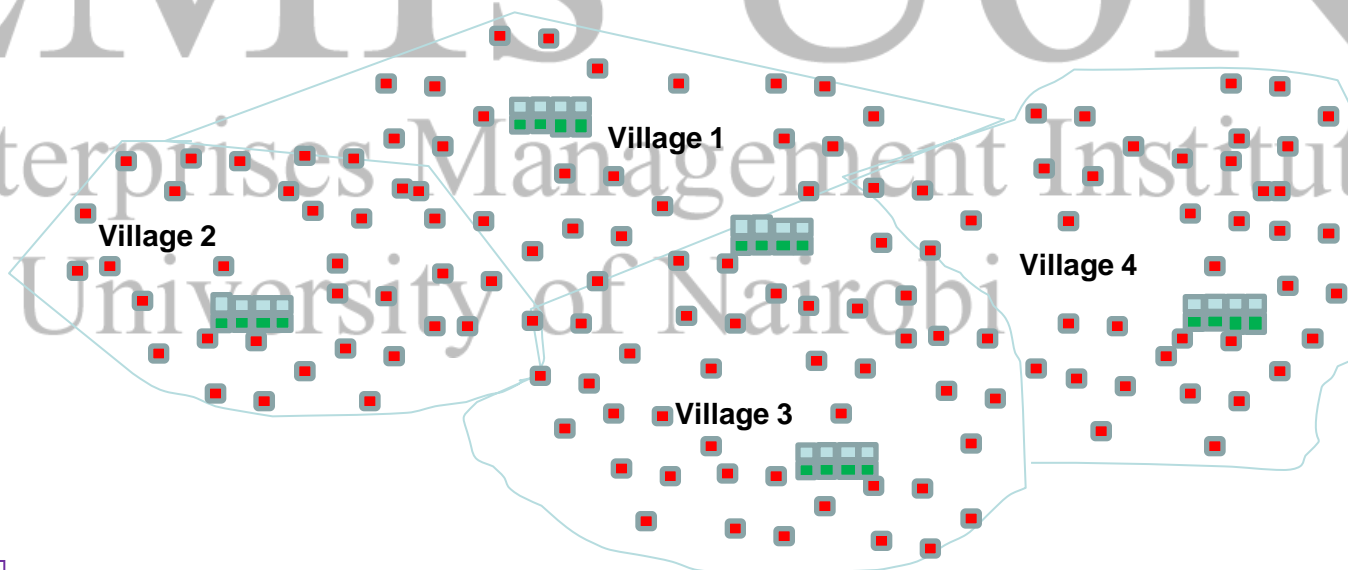
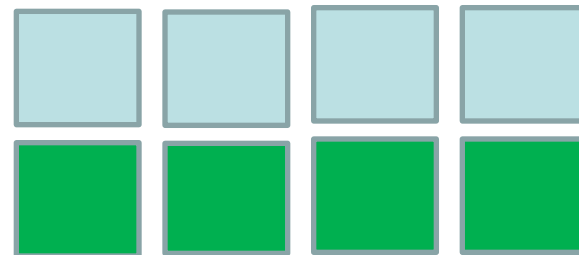
Everybody, even the poorest, gets to :

- Try Mother – baby demos
- Avoid exclusive nature of group/ lead farmer approaches
- Believe in technology because they see it on own land

Small promotion packs of seed:

- 25 g enough to learn (5m x 2m)
- 1 tonne of seed can reach 40,000 households
- Cheap, cost effective, large uptake

Mother Demo





# Methodology: Rapid Demand Creation Mother demonstrations

## e.g. The “Honest Broker” Maize Variety/Fertilizer Demo



### Objectives:

- Empower farmers to select the best variety for their farms
- Empower farmers to select the best fertilizer for their farms
- Teach farmers how to use fertilizer most effectively, and optimum crop management

### Farmer suitability:

Most appropriate for small farmers (0.5-2 acres) who are already using fertilizer and improved seed, and planting by hand

### Method: 1 demonstration/village

8 plots (10 x 5m):

Plot 1: Farmers' own seed

Plot 2: Variety recommended by seed co. A

Plot 3: Variety recommended by seed co. B

Plot 4: Variety recommended by seed co. C

Plot 5: Variety recommended by seed co. D

Plot 6: Variety recommended by seed co. E

Plot 7: Variety recommended by seed co. F

Plot 8: Variety recommended by seed co. G

Plots sub-divided into 2:

Sub-plot A: Conventionally used fertilizer

Sub-plot B: New improved fertilizer

Cost/demo: US\$18

Fertilizers: US\$ 3, Seeds: Donation by companies;

Implementation: US\$15

Target: 300 farmers

Cost/farmer trained: US\$ 0.06



# Methodology: Rapid Demand Creation

Cross Crop Demonstrations e.g. with Leldet Ltd.



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# Methodology: Rapid Demand Creation

e.g. The SIMPLe-Plot

**Small Improved Maize Production Learning Plot** for the Mass Dissemination of information to small-scale farmers



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1 tonne of seed, packaged into 25 g sample packs, can be distributed to 40,000 farmers



# Methodology: Advice on efficient use of inputs

## Integrating methodology to improve soil/crop management





# ISFM Demonstrations – Advice on efficient use of inputs

## Deep Tillage – Spring jembe

- ✓ Breaks hard pan allowing rainwater infiltration and root growth to deeper soil layers



“Spring”  
jembe



Farmer  
tillage

Deep row tillage with “spring” jembe  
combined with tied ridges

# Methodology: Advice on Efficient use of inputs

Promotion of improved fertilizer use efficiency through the “Maxi-Maize Production” Planting String

- ✓ Helps farmers to improve seed spacing and planting fertilizer placement

Example: Effect of improved fertilizer/crop management; Kisii district, Kenya



Conventional management:  
DAP, Hybrid seed  
3 maize seeds + 4 bean seeds/hole, 90 cm x 50 cm  
Yield: 5 bags/acre



Improved management:  
DAP, Hybrid seed, Urea  
1 maize seed/hole + beans between row, 75 cm x 25 cm  
Yield: 25 bags/acre



# Methodology: Rapid Demand Creation

## The Commercial Small Seed Pack

- Small affordable packs (e.g US\$0.13) – empower farmers to experiment with new varieties with little risk;
- Inputs not given away for free – farmers are able to appreciate their value;
- Promotions designed to reach large numbers of farmers as quickly as possible at low cost (through agro-dealers on market days, farmer field days around demos, and FIPS-Africa's Village Approach)





# Approach for Root & Tuber Crop Dissemination

**Fantastic varieties have been developed by KARI:** for most agricultural regions of Kenya.

**Challenge:** to get new varieties to the hundreds of thousands of farming households do not have access to them

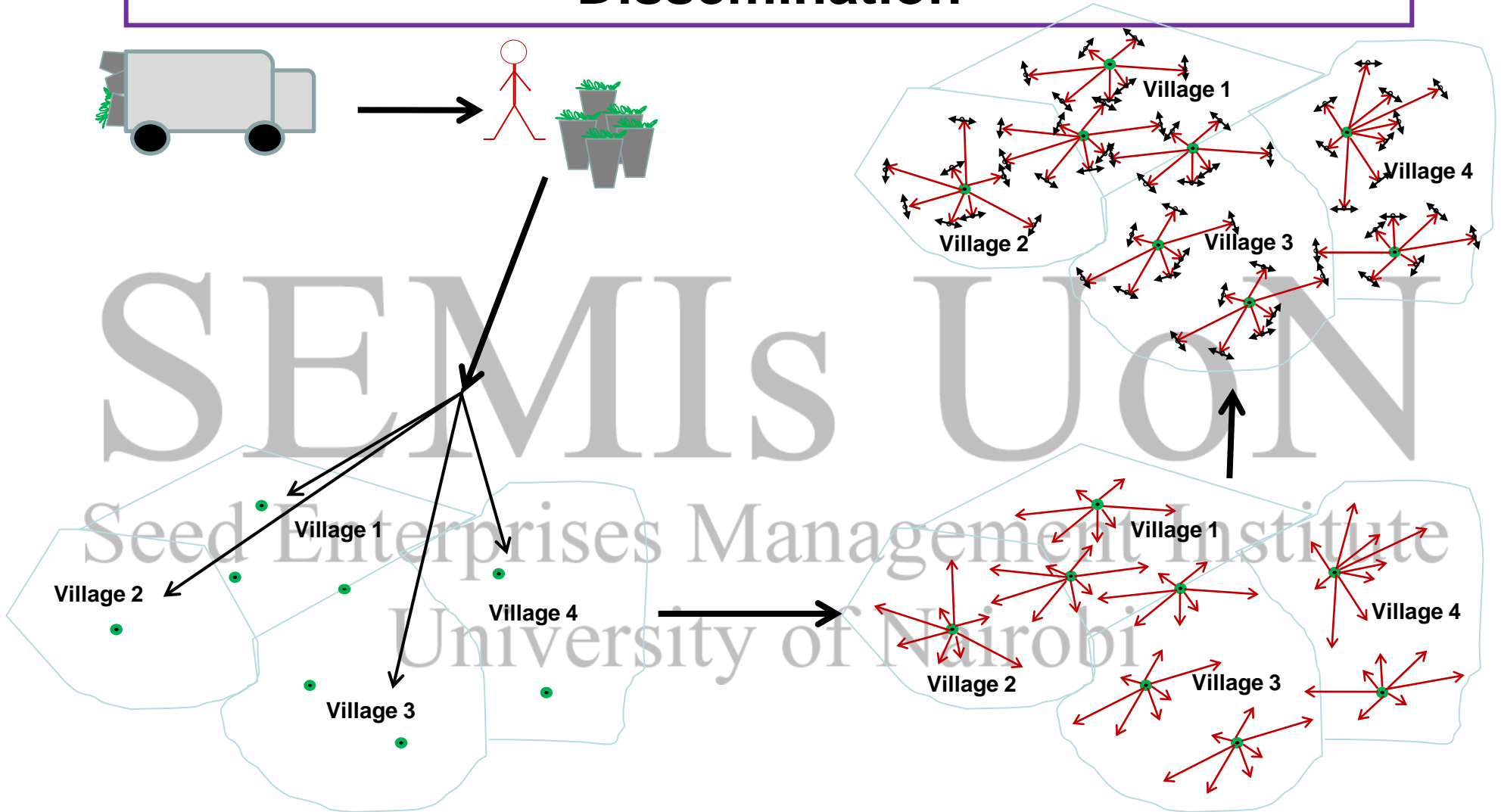
**FIPS-Africa strategy: Village Approach and 'Small-pack' Approach**

- Everybody should get to try
- Reduce risk and increase reach through '*dissemination in small lots*'
- Enable choice through promotion of many varieties

**Practically:**

- A district with 15 Village-based Advisors receives a truckload of 75 bags vines or cuttings
- Each VBA receives 5 bags to establish a village multiplication sites
- Begins harvesting vines after 2 months and disseminates to farmers as a loan
- Farmers receiving 30 vines (10 of 3 different varieties) return 60 vines to VBA for further dissemination in the village
- Most households in 60 target villages (60 – 100%) growing improved varieties within 2 years.
- Cassava dissemination is delayed by 9 – 12 months due to slow propagation.

# Village Approach to Root & Tuber Dissemination



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These new maize varieties are performing well on farmers' fields in Kiambu West district. They are tolerant to the Maize Streak Virus (*Gikware*) and they mature earlier than conventionally-used varieties.



*Agnes Mbutia, Kamuchege Village, Kiambu West district; 1894 m; July 24, 2009*

The KH500-31A and KH500-34A varieties are available from Leldet Ltd. for KSh 260 / 2 kg bag, or only KSh 60 for a 400 g starter pack. Try a pack today and see the difference!

## Achievements (2008-9)

Quantity of seeds received from private sector for promotion (kg)	17,192
Number of small learning plots conducted	125,281
Number of small seed packs sold to farmers	54,283

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## Impact

- ✓ Having succeeded with small packs, farmers mobilise resources and return to local stockist or VBA to purchase larger quantities of seed to improve food security and income generation

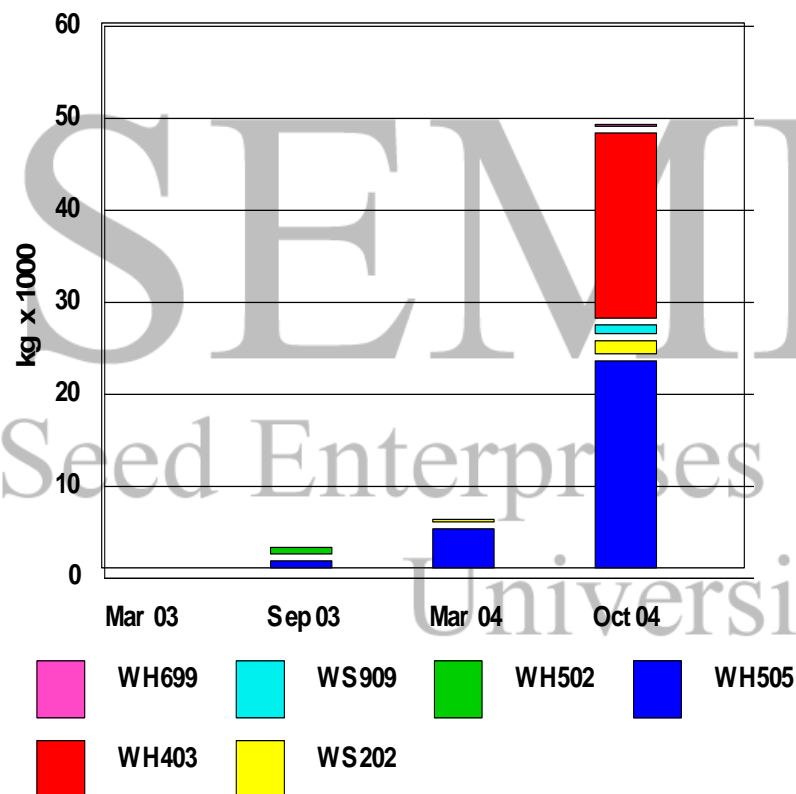


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# Impact

## Success Story of Public/Private Sector partnership - *Maize varieties from Western Seed Co (Central Province)*

- In March 2003, seeds of Western Seed Co. (WSC) unknown by farmers and stockists in Central Province.
- FIPS-Africa started to promote WSC varieties
- WSC donates seeds for demonstrations and promotions
- Within 4 seasons, seed sales through stockists increased to 50 tonnes.





# Impact on Farmers





# Impact



Farmer's seed without fertilizer



WH504 variety with *Mavuno* fertilizer

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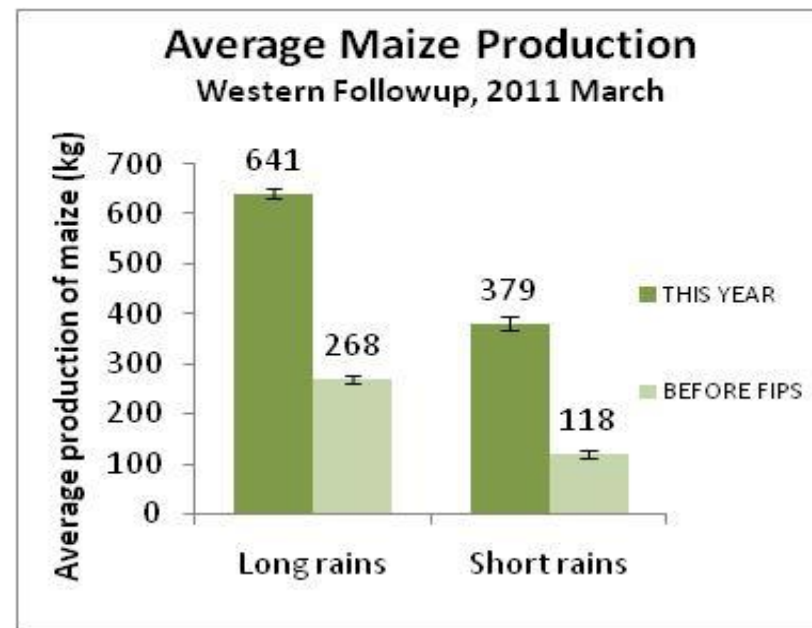
# Impact on Farmers

## Impact assessment in Western Kenya

- AGRA funded project area
- 10 VBAs 2-3 years with 10,000 households
- 266 randomly sampled households within target villages

## Maize statistics

- average area planted to maize 0.6 acres & 0.45 acres
- 98% households increased production
- 2.4 fold yield increase in long rains
- 3.2 fold yield increase in short rains
- Increase from 0% to 95% households have enough maize for their household needs.
- Assuming representative of 10,000 households and maize price of 60 Ksh per kg, increase in maize production worth USD 3.9 million





# Impact on Farmers

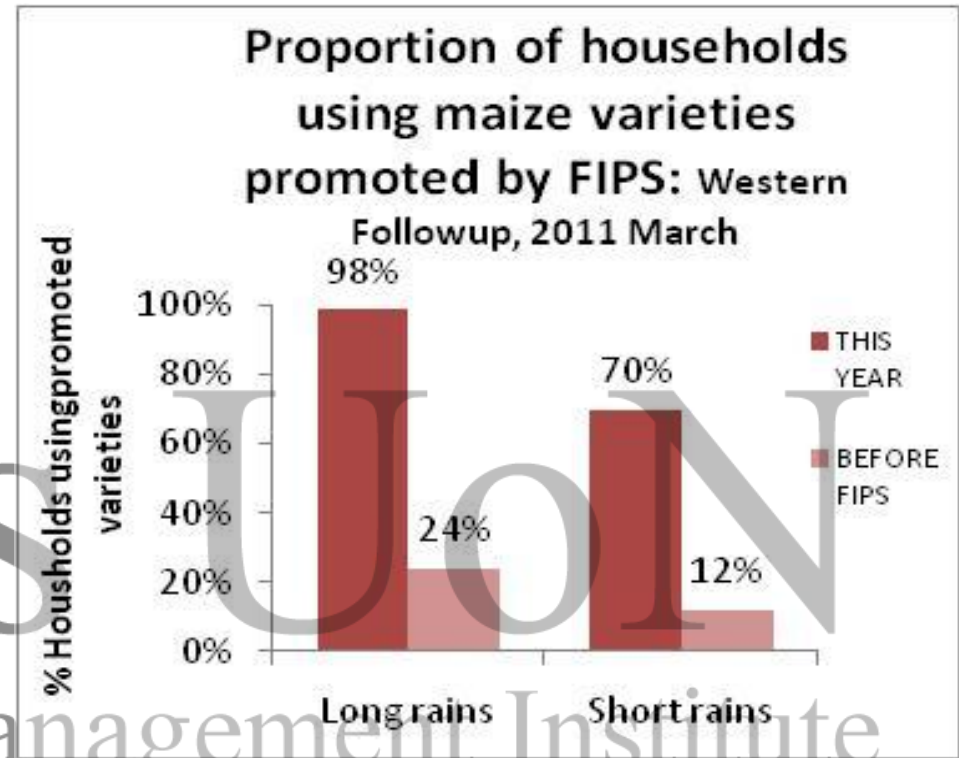
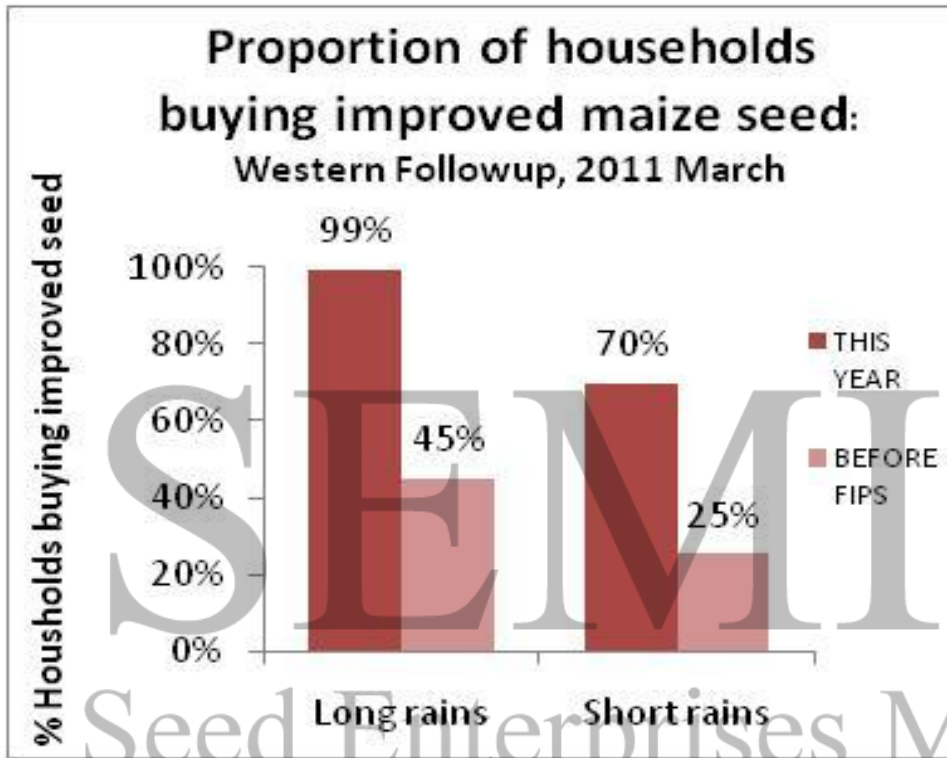
## Reaching even the poor farmers

- Proportion households harvesting <2 bags maize reduced from 30% to 1%.
- Proportion households harvesting 5 – 10 bags increased from 8% to 60%.

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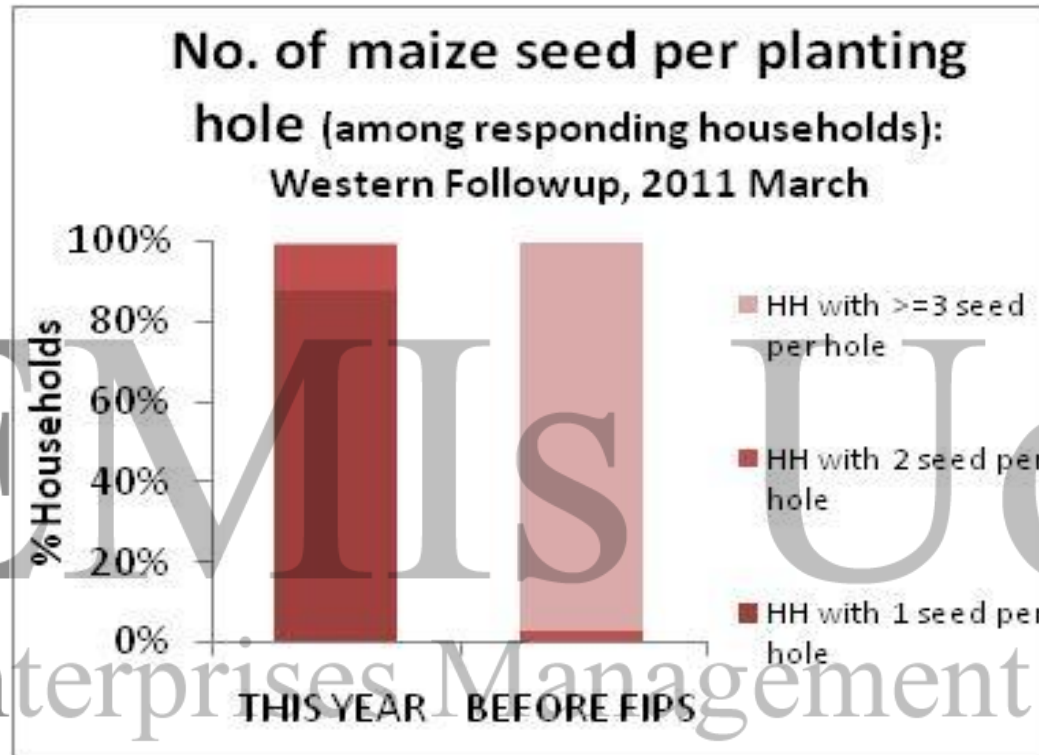
# Impact on Purchase of Seed



**More farmers are buying**

- improved seed
- varieties that FIPS-Africa promoted

# Impact on Planting Method



Number of seed per hole improved from  $\geq 3$  seeds per hole to 1 or 2 seeds per hole.  
Assume also spacing & placing fertilizer better



# Impact of improved varieties' on farmers lives

**Butere / Mumias: Fannuel Chamona Okachi in Busashi village has**



- Received loan of 200 vines from FIPS-Africa
- Multiplied the 200 vines to reach ¼ acre in 9 months (replacing land allocated to sugarcane).
- Harvested 10 bags of sweet potatoes and sold Ksh 1000 a bag.
- Father of 8 says he has never completed his children's school fees in time but this time he is one of the few parents with no arrears in school.
- Bought new panga and jembe for his farm.

• *"I used to earn 3,000 shillings from the same portion of land. I will create more space for sweet potatoes,"* says Okachi.

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# Impact of improved varieties on farmers' lives

**Sabatia:** Loice Mutingu in Museyu village



- Received 200 stems of MH95 cassava from FIPS-Africa
- Within a year Mutingu had:
  - enough to feed her 5 grandchildren
  - given stems to more than 40 neighbours.
  - increased area to  $\frac{1}{4}$  acre.

*“MH95 variety of cassava has big roots, yields faster, cooks faster with little water and is sweeter than the local variety grown in this area, it is also tolerant to the cassava mosaic virus,”* says Loice Mutingu.

*“Today my grandchildren stay home and even when they play they no longer hang around neighbours houses at meals times.”*

*“When my cassava stems get more mature I will sell and buy myself a goat”* she adds.



# Highlights: Demand for KH500-31A and KH500-34A varieties produced by Leldet Ltd. increasing rapidly



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# Highlights: Demand for Olerai 22 and Olerai 46 varieties produced by Olerai Ltd. increasing rapidly





Highlights: Huge demand for FIPS-Africa's methods in Tanzania from private sector (e.g. Tansed International) and farmers



Taitu Salim; Mkalama Village, Hai district  
TAN250 planted and topdressed with Meli Mahindi fertilizer



# Highlights: Demand for TZ538 variety from SUBA AGRO in Tanzania increasing



Mbeya district, May 2013



# Highlights: Demand for TZ538 variety from SUBA AGRO in Tanzania increasing



Mbeya district, May 2013



## Aumente seus rendimentos com a variedade de milho híbrido PRIS 601 da Mozseeds

Esta nova variedade de milho esta a dar resultados promissores nos campos dos agricultores no distrito de Barue, na provincia de Manica. Ela da rendimentos altos comparado com as variedades convencionais habitualmente usadas.



PRIS 601

11de Abril, 2013

A variedade PRIS601 esta disponivel na Mozseeds. Experimente um pacote hoje e veja a diferenca! Para melhores resultados use fertilizantes da Mozambique Fertilizer Company. Contacte seu Promotor Comunitario para mais informacao.





# Highlights: Farmers also saving their seed from seed loans of new Kakamega bean varieties



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# Highlights: Farmers also saving their seed of new greengram and pearl millet varieties from small (50 g) seed loans





# Highlights: Farmers improving their food security through improved varieties of cassava from KARI-Katumani



Lillian Mueni, Vuka Village, Kyemundu Location; 1436m, S01.97366°, E037. 49360°



# Highlights: Employment opportunities generated for village-based promoters



1 Chicken = KSh 300 = 2 kg seed = 5 kg fertilizer



# IMPACT: Income generation from chick dyeing



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# Scaling up

Approach can be applied anywhere that has improved varieties and growing private sector supply for seed and moderate to high population density.

- Kenya, Tanzania, Nigeria
- Coast, mid, high altitude
- Semi-arid, moderate rainfall, high rainfall

Applicable for range of crops and other farm inputs

Need for Village-based Advisor in every farming village

## Strategy

- Become more cost effective
- Institutionalise approach with Ministries of Agriculture
- Private sector contract FIPS to promote
- Support private sector to establish their own VBA networks
- Increase donor funding



## Methodology adopted by Private Sector

Isa Buba – Notore Village Promoter, Bali LGA, Taraba State, Nigeria



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# Methodology adopted by Private Sector

## NASECO - Uganda





## Difficulties encountered

1. At times, insufficient seed is available for promotion/sale. Breeders/Seed companies need to increase supply of seed.
2. Free seed donated by Government depresses demand
3. Village-based Advisors lack sufficient capital to supply sufficient seed

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# Summary

1. Private sector-led extension networks can be cost-effectively established to create demand for improved varieties.
2. Multi-crop extension approach can greatly reduce costs of dissemination
3. Self-employment opportunities for Village-based Advisors generated
4. Co-operating seed companies experience increase in demand and sales of seed
5. Large numbers of farmers benefit from improved food production

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# Summary

- ✓ Methodology can easily be scaled-up and replicated in neighbouring countries and other regions to assist in the achievement of the Green Revolution in Africa



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# Thank you

- To all our Partners in Seed Companies, Research Organisations, Ministry of Agriculture, and Donors for their co-operation;
- To FIPS-Africa Staff for their innovation and commitment

For more information, contact:

Farm Input Promotions Africa (FIPS-Africa),

PO Box 5523,

00200-Nairobi.

Tel: 020-2730700;

e-mail: [fipsafrica@yahoo.com](mailto:fipsafrica@yahoo.com)



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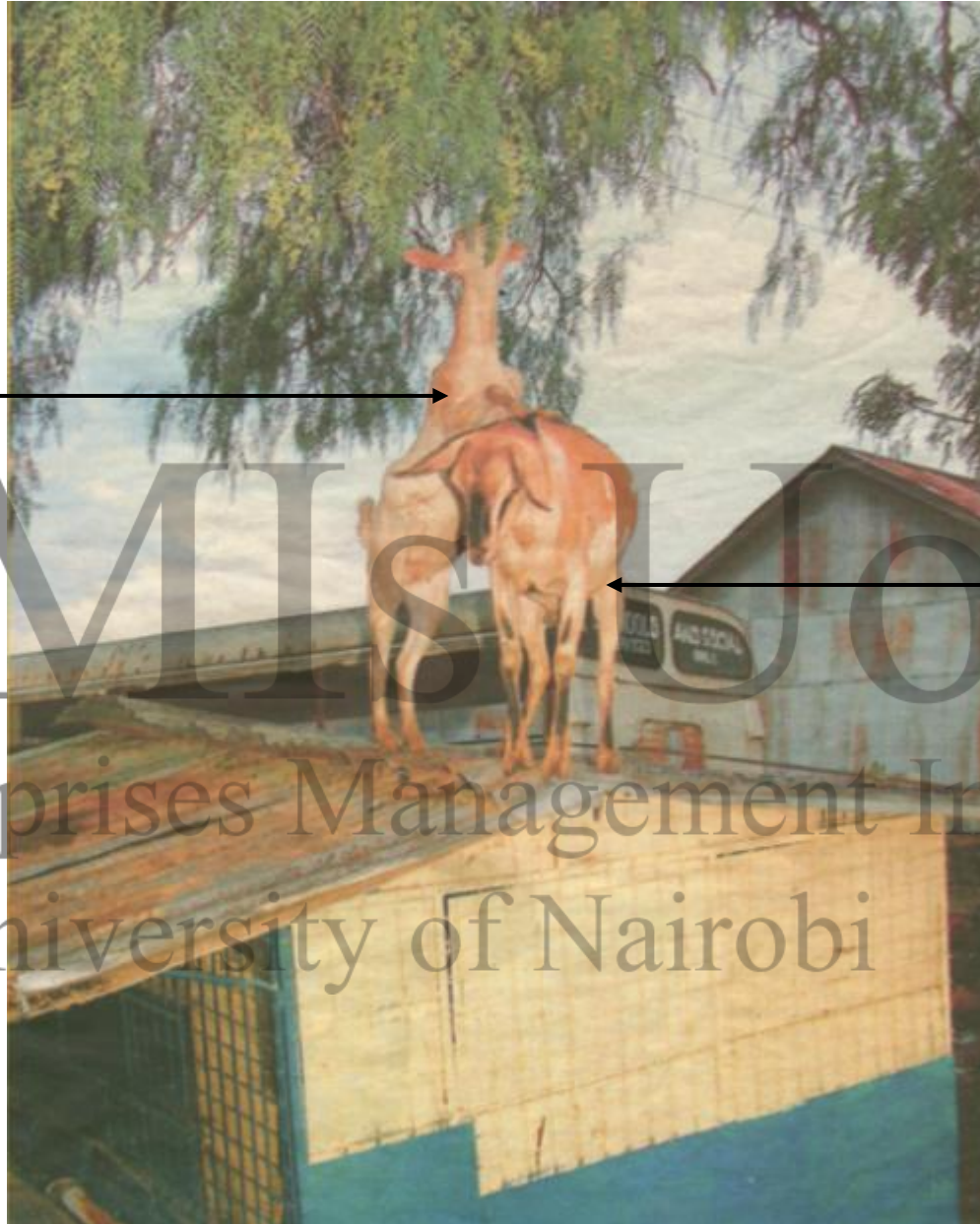
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# Spirit of co-operation

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