Impact-oriented legume seed systems in Africa

Louise Sperling – Catholic Relief Services, USA
UN-FAO ‘SEED’ Funds: Emergency and Early Rehabilitation programs

- 1996-7: US$ 51 million
- 2002-3: US$ 349 million
- 2003-5: 400 projects
- 2008-2010: Seed aid plans for 48 countries
- 2011: special relief funds 744.5 million

Sperling, Osborn and Cooper, 2004, Sperling and McGuire, 2010
ETHIOPIA – seed aid right now
El Nino

$US 35-50 million
(for one season!)
Seed and Commercial Development

- $US 32 billion/yr Commercial seed sector
- $US 15 billion/yr- GM (genetically mod.)

(Bonny, FOSE, 2014)
Seed is vehicle for new varieties

Across Africa, seed systems move varieties esp.

- Maize (hybrid, OPV))
- Horticultural seed (vegetable)
- (occasionally... groundnut)

- .....?
Seed is vehicle for new varieties

With different goals

Production (food security)

Resilience (Climate variability)

Nutrition

Income
Ex. 1: Goal- Resilience

*Clients in drought-prone zones*

**In Drought Zones**
- Low harvest
- High incidence of ‘disaster’

**Poor + seed**
- Farmers may lose seed, need to restock
- Low purchasing power
- Need *highly* adapted varieties
- Need *diversity* of varieties/crops
- Need service outlets in ‘remote’ locations
Ex. 2: Goal - Nutrition

Clients: mal/undernourished

- Mostly small-scale farmers /plots
  - Low purchasing power
  - Diets geared to ‘cheap’ calories

Nutrition + Seed

- Tap venues where undernourished go
- have info strategy to help users see ‘invisible’ value (nutrition)
Channels through which Farmers Source Seed Seed

- Genebanks
- Cultivation
- Harvesting
- Storage
- Consumption
- Breeders
- Seed production
- Own
- Exch
- Markets
- Govt
- Comm
- Relief
- Other local Markets

Channels through which Farmers Source Seed

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- Relief
- Other local Markets
Channels through which Farmers Source Seed

- Community-based Seed
- Farmer Co-ops
- Farmer Unions
- Local Seed Business
- Private seed entrepreneur
Where do smallholder farmers access the seed they plant?
## Seed System Security Assessments:

*n = 9660 observations*  
(CIAT/CRS/UEA)

<table>
<thead>
<tr>
<th>SSSA</th>
<th>Date</th>
<th>Stress context</th>
<th>N</th>
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<tbody>
<tr>
<td>Country</td>
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<td>Immediate (acute)</td>
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<td>Malawi</td>
<td>2011</td>
<td>Drought</td>
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<td>Kenya</td>
<td>2011</td>
<td>Drought</td>
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<td>DR Congo</td>
<td>2012</td>
<td>Ongoing conflict</td>
<td>548</td>
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<tr>
<td>Haiti</td>
<td>2010</td>
<td>Earthquake</td>
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<td>S Sudan</td>
<td>2010</td>
<td>Post-conflict</td>
<td>3986</td>
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<tr>
<td>Zimbabwe</td>
<td>2009</td>
<td>Political Instability/Currency Collapse</td>
<td>595</td>
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</tbody>
</table>

McGuire and Sperling 2016- Food Security
Other sites/countries in expanding data base

‘Other’ Africa
- Zambia
- Madagascar

(Ethiopia in October 2016)

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Elsewhere
- Northern Syria
- Timor Leste
% of seed supplied – all crops

- Local markets: 51%
- Own Stocks: 30%
- Agro-dealers: 17%
- Others: 2%

Other: social network, NGOs, .....Govt, CBSG-- <0.5%

n = 9660
Seed Sources - *legumes*  
n=3,324

<table>
<thead>
<tr>
<th>Country</th>
<th>Local markets</th>
<th>Own stocks</th>
<th>Agro-dealers</th>
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</thead>
<tbody>
<tr>
<td>Malawi</td>
<td>52%</td>
<td>20%</td>
<td>28%</td>
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<tr>
<td>Kenya</td>
<td>50%</td>
<td>35%</td>
<td>15%</td>
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<tr>
<td>DRC (Katanga)</td>
<td>70%</td>
<td>10%</td>
<td>20%</td>
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<tr>
<td>Haiti</td>
<td>80%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>South Sudan</td>
<td>40%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>20%</td>
<td>50%</td>
<td>30%</td>
</tr>
</tbody>
</table>
Seed Sources - **Common bean**

- **Own stock**: 81%
- **Local market**: 10%
- **NGO/UN**: 4%
- **Other**: 5%

Total: **n=1068**
THE GOOD NEWS

Farmers are BUYING Seed
Sources of new varieties (n=1,683)

- **68%** through NGO/Government assistance
- **14%** through local markets
- **11%* (marked with an asterisk)** through agro-dealers
- **7%** through social networks
- **1.7%** through community seed groups
- **0.2%** through contract growers
- **1.7%** through other sources

37% of farmers obtained new varieties across different sources.
Seed systems for impact-/scale build on varied thrusts:

**FORMAL MARKETS**: maize, horticultural seed (legumes!)

**INFORMAL SYSTEMS/LOCAL MARKETS**
- Provide heart of seed supply- for the poor
- Ensure diversity/tailored response (wide range crops- need esp for climate variation)
- Supply especially nutrition-linked crops
- Offers place for innovation-new varieties

*(MIXED /Integrated Systems  ???? – )*
To move forward: ‘Think FARMER’

**Supply side**
- More local outlets
- ...
- ...

**Demand side**
- Offer smaller packs
- better information systems
Moving forward- legume seed

‘Think FARMER’
Expand Outlet placement: Agro-dealers
Expand agro-dealer outlets--- toward farmer (AGRA approach)

Mapping

Sites collected for Nodes of Growth

Recommendations

Location of new Seed Outlets - Nzaui

After 1 Iteration - 38% of population within 1 hour

After 8 Iterations - 80% of population within 1 hour

Altitude

Markets

Seed Sites

0 - 1,000
1,000 - 1,200
1,200 - 1,400
1,400 - 1,600
1,600 - 1,800
1,800 - 2,000

• Agrovet
• Farmer
• Leldet demo.
• KARI-RICE
• Seed supplier

23% farmers currently within 1 hr. seed outlet

(Farrow et al 2011)
Current formal sector structures- how to expand?

- Satellite rural sellers (AGRA)
- FIPs small shops/service centers
- Community agro-dealers (ACDI-Voca)
- Village-based committees
- CRS- Private Service Providers (PSPs)

Which of these reach farmers ‘at the last mile’
Product design: move towards smallholder: small packs

- Get new varieties to farmers
- Uncover demand
  - Varieties
  - Seed
- Expand market for certified

TLII 2012: 943,170 packs sold
6 crops in 13 African countries
Increase Strategic information transfer + feedback systems

a. Catalyze SMS two-way information networks for farmers on location of seed suppliers

b. Spur cellphone feedback on variety performance and seed quality - farmers
Bundling thrusts

- Fertilizer + Micro-insurance
- Seed dressing

- Savings + credit
- PICS/storage bags
Current structures.. Formal sector steps to move legumes

- Expanded outlet placement
- Product design shifts (small packs)
- Information expansion (not enough!)
- Bundling

Will these advances alone allow us To reach farmers ‘at the last mile’ ?
New structures for selling needed…. (informal)

a. License ‘Mom and Pop’ stores

b. Encourage sale in ‘public venue’
   a. Supermarkets (Malawi)
   b. Open markets (across Africa)
New actors for selling needed....TRADERS-(informal)

- New legumes (beans gnuts)
- New crops (horticultural)
New methods of seed production/marketing -- and EVALUATED
POLICY CHANGES to ENABLE PROGRESS

- **Seed quality review/reform**
  - QDS
  - Truthfully-labeled

(look closely at cost and risks of quality options)
New business models for LEGUMES

- Think Tank Workshop

Legume Seed Business

(Sept 2016)
ABSURDITIES + FICTIONS
Absurdity #1: Public good feeds into high cost private

MANY Public varieties bred

Private companies multiply a few

Sold to farmer ...... 
privately only as certified seed
Absurdity #2:
High cost private survives on institutional buyers: then free handouts

Private companies multiply a few varieties

Sell to NGOs/ UN/Institutional buyers

Give free to farmers !!!! (no choice)
Our Panel and FICTIONS

- Private sector not interested in legumes
- Gov’ts do not support legumes
- Farmers do not buy legume seed
- Farmers rarely renew legume seed
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SeedSystem.org provides practical ("how-to") guidance and strategic thinking to help professionals design seed-related assistance. We aim to foster productive, resilient, and market-oriented seed systems, even in times of emergency and chronic stress.