Changing Agricultural Aid through Understanding Farmer Seed Systems

Speakers

Robert Bertram, **Chief Scientist, USAID Bureau for Food Security**

Julie March, **Agriculture and Food Security Technical Advisor, USAID Office of U.S. Foreign Disaster Assistance (OFDA)**

Louise Sperling, **Senior Technical Advisor, Catholic Relief Services**

October 9, 2014
Upcoming Agrilinks Events:

• Ag Sector Council Seminar, October 22
  “From Smallholders to Shareholders: Optimizing Private Sector Partnerships for Smallholder Impact”

• AgExchange, November 18-20
Robert Bertram
USAID Bureau for Food Security

Robert Bertram is the Chief Scientist at the USAID Bureau for Food Security, where he serves as a key adviser on a range of technical and program issues to advance global food security and nutrition. In this role, he leads USAID's evidence-based efforts to advance research, technology, and implementation in support of the U.S. Government's global hunger and food security initiative, Feed the Future.
Julie March is the Agriculture and Food Security Technical Advisor for the USAID Office of U.S. Foreign Disaster Assistance (OFDA). With an academic and practical focus on agriculture, ecological, and farming systems, she has supported the integration of systems thinking into disaster response, recovery, and resilience programs. At USAID/OFDA, her work has helped move international disaster programs beyond early forms of seed assistance and led to enhanced tools and assessments for designing interventions that contribute to sustainable systems.
Louise Sperling is a Senior Technical Advisor at Catholic Relief Services. She has managed programs in 25-plus countries in sub-Saharan Africa, Asia, and Latin America that involve typical and high-stress smallholder farmer systems. Notably, she led assessment missions after the 1994 Rwandan civil war and genocide, post-earthquake in Haiti, and pre-referendum in South Sudan. Consulting for many agencies (USAID/OFDA, U.N. system, World Bank, Rockefeller Foundation), Sperling has authored over 70 articles. A new website, seedsystem.org, shares practical and policy advice for practitioners intervening in crisis and chronic stress contexts.
Changing agricultural aid through understanding farmer seed systems

October 10, 2014
Louise Sperling, Catholic Relief Services
Julie March, USAID Office of US Foreign Disaster Assistance
Key Points

• How has humanitarian aid for agriculture changed
• What are the driving forces of that change
• What tools are sharpening response
• What is the potential impact on emergency programs
• What is the potential benefit to development programs
Changing landscape for seed programming

Complex emergencies:

– Chronic stress
– Conflict
– Displacement
– Irregular weather

IDP camp garden program, Darfur
Global response priorities (2012)

Types of Disasters Requiring OFDA Assistance

- 24 Floods
- 18 Complex Emergencies
- 9 Food Insecurity Emergencies
- 3 Winter Emergencies
- 2 Fires

OFDA also responded to one of each of the following disasters: cyclone, drought, earthquake, fresh water shortage, munitions explosion, refugee influx, and tropical storm.

OFDA Funding by Sector

- Agriculture & Food Security
- Health
- ERMS
- WASH
- Disaster Management
- Humanitarian Coordination & Information Management
- Humanitarian Studies, Analysis, or Applications
- Logistics & Relief Commodities
- Nutrition
- Protection
- Natural & Technological Risks

OFDA Funding by Region

- Africa
- Asia
- Europe, the Middle East, and Central Asia
- Latin America and the Caribbean

24 Floods in FY 2012. Floods were the most frequent disaster.
Evaluation of seed aid

Acute need + Chronic need = Seeds
Do No Harm (?)

- Competition
- Dependence
- Limiting access to new varieties
- Disrupting local markets
- Reducing resilience
Assessment based interventions

• Evaluate rather than assume
• Track trends
• Engage stakeholders
• Ease transition
Emergency, chronic stress, and development responses to strengthen smallholder farmer seed systems

Humanitarian Assistance

Decision guides to identify effective seed system response, ‘how-to’ technical information, and manager checklists for proposal development and field evaluation.

For more, see Aid Response Advice.

What our partners are saying:

"These resources steer us away from seed relief dependency—and towards solving national problems."
AD, former Ethiopian government minister

"SeedSystem represents new thinking on the role that agriculture plays in building resilience."
LP, Senior Humanitarian Advisor, USAID

"The tools you provide help even non-experts understand complex situations."

What our partners are saying:

RESOURCES AVAILABLE IN Other Languages

Many of our resources are available in French or Portuguese

French:

- When Disaster Strikes Assessment Guide
- Aid Response Advice: practice briefs
- Seed System Security Assessment: specific tools

Contact Us

NAME *

EMAIL *

COMMENT
Changing aid through understanding farmer seed systems
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
Seed and Commercial Development

- $US 45 billion/yr Commercial seed sector
- $US 15 billion/yr GM (genetically modified)
- ($US 6-15 billion/yr ‘Informal sector’)

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

Across Africa, seed systems move varieties, especially:

- Maize (hybrid, OPV)
- Horticultural seed (vegetable)
- Groundnut

- .....?
Channels through which Farmers Source Seed Seed

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

Other local Markets
Seed markets

Informal seed markets

Many crops: cereals, legumes

Agro-dealers/seed companies

Maize, vegetable seed
Informal seed markets
Distinguishing Grain vs. Potential Seed

- Not all grain can be sown.
- But some ‘grain’ also is very good seed
  - Adapted (right variety)
  - Good quality

‘potential seed’

(Sperling and McGuire 2010)
Seed systems during disaster: what happens?
# Farmer Bean Seed sources during Rwanda Emergency

<table>
<thead>
<tr>
<th>Source</th>
<th>Sept 1994</th>
<th>Sept 1995</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Total seed (N=143 farmers)</td>
<td>% Total seed (N=883 farmers)</td>
</tr>
<tr>
<td>Own Stock</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>Relief aid</td>
<td>28</td>
<td>6</td>
</tr>
<tr>
<td>Market</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>Friends/neighbors</td>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>Kin</td>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Sperling, 1997; IDRC/USAID funded
Rwanda: post-war/genocide, 1995, beans

(n=883)

Varieties lost?  Varieties available locally?

No  Yes  Yes

Problem?  = money/barter

Sperling, 2002
Kenya Drought 1997: Where Farmers Sourced Maize Seed (N-172)
Haiti earthquake: 2010

Percentage of seed quantities farmers used this season, by source and crop - All sites

- Stocks
- Market
- Input store
- Farmer seed producer
- Family or friend
- Seed aid

% vs. crops:
- Maize
- Beans
- Rice
- Sorghum
- Peanut
- Pigeonpea
- Cowpea
- All above crops
Seed Systems in Stress: Basic findings- 1

- Local Systems relatively durable—and resilient

- Common Farmer problem: ACCESS
  - Availability rarely problem

- For some crops, local grain/seed markets provide a core of seed system stability. (esp for the poor)
Kenya: Numbers of times farmers received seed aid 1992-1997

<table>
<thead>
<tr>
<th>Region</th>
<th>Sample</th>
<th>Avg</th>
<th>Mode</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machakos</td>
<td>46</td>
<td>1.8</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Baringo</td>
<td>46</td>
<td>1.4</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Makueni</td>
<td>33</td>
<td>2.2</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Embu</strong></td>
<td><strong>40</strong></td>
<td><strong>3.1</strong></td>
<td><strong>4/3</strong></td>
<td><strong>10</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Sperling, 2000
Acute and Chronic Seed Insecurity:

Seed Security

Poverty

More ← Livelihood Assets → Fewer

Normal

Crisis
In areas of ‘chronic stress’, acute seed interventions are not effective responses.

(need to address longer-term chronic + developmental – from beginning of response)
# Repeated Seed Aid Delivery in Many Countries

<table>
<thead>
<tr>
<th>Site</th>
<th>Extent of Seed Aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>28 seasons: since 1995</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Near continuous since 1991 (food aid, seed aid or both)</td>
</tr>
<tr>
<td>Malawi</td>
<td>15 seasons or more, since 1992</td>
</tr>
<tr>
<td>Timor Leste</td>
<td>Since 2000 ? (+ ongoing)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Since 1974 : 34 years</td>
</tr>
</tbody>
</table>
Seed Security:
matching responses to specific problems
# Seed Security Framework

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Seed security</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability</strong></td>
<td>Sufficient quantity of seed of appropriate crops available within reasonable proximity, and in time for planting</td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>People have adequate income or other resources to purchase or barter for seed</td>
</tr>
</tbody>
</table>
| **Quality** | Seed is of acceptable quality  
- ‘healthy’ (physiological, analytical, +sanitary quality  
- adapted and farmer-acceptable varieties |

Remington/CRS, 1998, 2002
Seed System Problems— and appropriate responses

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Acute</th>
<th>....Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unavailability of seed</td>
<td>Direct distribution of seed</td>
<td>-(rarely happens: except for new varieties)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seed sector production capacity</td>
</tr>
<tr>
<td>Farmers do not have access to seed</td>
<td>Vouchers and cash (w/seed fairs)</td>
<td>Income generation activity;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agro-enterprise development- value chains</td>
</tr>
</tbody>
</table>

Sperling et al 2008
# Seed System Problems— and appropriate responses

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Acute</th>
<th>....Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed of poor quality</td>
<td>Seed fairs with quality controls</td>
<td>Programs to improve seed quality</td>
</tr>
<tr>
<td></td>
<td>Direct distribution of test samples of quality seed</td>
<td>- seed companies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- on-farm (CBSP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- in local markets</td>
</tr>
<tr>
<td>Lack of appropriate varieties/crops</td>
<td>Limited introductions new varieties</td>
<td>Introduce new varieties/ with technical support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variety selection/ breeding</td>
</tr>
</tbody>
</table>
Problem X

Strategic Goal Setting

• Focus short-term (stop gap) - or link relief to development?

• Support formal or informal systems - both - and why?

• Crops for the commercial sector ONLY – and why?

• Single crop focus --- or basket of crops?

• Crops to deal with problems of flood/drought-prone areas/system resilience

• Crops/varieties to address nutritional issues (and needs for crop diversification)

• Seed issues only -- other inputs? Insurance vouchers? Agro-enterprise?
Seed System responses: RESILIENCE /NUTRITION lens

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Acute</th>
<th>....Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers do not have access to select seed</td>
<td>DiNERS (diversity and nutritional fairs for environmental resilience</td>
<td>Seed production + marketing tied to legumes</td>
</tr>
<tr>
<td></td>
<td>Vouchers tied to legumes</td>
<td>Vegetable seed enterprises</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information-rich strategy-nutrition/dietary diversification</td>
</tr>
</tbody>
</table>
Seed Aid for Seed Security

ADVICE FOR PRACTITIONERS

When and How to Respond with Vegetable Seed Programming

Interest in relief activities focusing on vegetable seeds is growing due to the unique role they can play in supporting both nutrition and income. This brief will inform and guide the interest in vegetables and highlight distinct features of vegetable seed response, compared with staple crop seed response. ¹

In many settings and situations, vegetables can help in special ways due to their inherent position in agriculture, commerce, and culture. These are summarized in Table 1 through three key lenses: cropping strategies, marketing strategies, and nutrition, with more detail offered later in the brief.

TABLE 1
Why Vegetable Seed May Be Helpful in a Crisis

<table>
<thead>
<tr>
<th>Vegetable</th>
<th>Cropping</th>
<th>Marketing/Livelihood</th>
<th>Nutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable</td>
<td>Decreases</td>
<td>Spreads risk that</td>
<td>Can increase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>decreases</td>
<td></td>
</tr>
</tbody>
</table>
Seed Security vs. Food Security: Moving towards sharper assessments/tools
Food Security and Seed Security are related but are not the same

- Households can have enough seed to sow a plot...
  But little to eat

- Households can have adequate food..... but lack access to the seed they need to make plots productive
‘Routine’ Seed Security Assessment’ c. 2005

- No Assessment
- Food Need Assessed= Seed need assumed
- Production (harvest) drop= Seed Need assumed

(but assumptions – not facts-- shaping response...
## SORGHUM SEED BASICS: Ethiopia example

<table>
<thead>
<tr>
<th>Crop</th>
<th>Miesso (Lowland)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Area per Household</td>
<td>3/4 ha</td>
</tr>
<tr>
<td>Sowing needs (kg– for area)</td>
<td>11-12</td>
</tr>
<tr>
<td>Harvest/yield (good year)</td>
<td>1600 kg</td>
</tr>
<tr>
<td>% Harvest needed for seed (good year)</td>
<td>0.75</td>
</tr>
<tr>
<td>Harvest/yield (bad year)</td>
<td>260 kg</td>
</tr>
<tr>
<td>% Harvest needed for seed bad year</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Production shortfall does NOT equal seed shortfall
Methods development:

Seed System Security Assessment (SSSA)
Vision: SSSA

- NOT calculating seed needs
- Looking at functioning of seed systems
- Assessing if there is a problem
- Matching problem to response
  - Acute problems
  - Chronic problems
  - Developmental opportunities
Channels through which Farmers Source Seed Seed production

Genebanks

Cultivation

Harvesting

Storage

Consumption

Planting

Govt

Comm

Relief

Own

Exch

Markets

Other local Markets

Breeders

Seed production

Channels through which Farmers Source Seed

Genebanks

Cultivation

Harvesting

Storage

Consumption

Planting

Govt

Comm

Relief

Own

Exch

Markets

Other local Markets

Breeders

Seed production
Focus: key crops + seed supply channels
(sample)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Home saved (%)</th>
<th>Social networks (%)</th>
<th>Local markets (%)</th>
<th>Commercial sector (%)</th>
<th>Seed aid (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>45</td>
<td>5</td>
<td>15</td>
<td>10</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Rice</td>
<td>55</td>
<td>15</td>
<td></td>
<td>30</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Cassava</td>
<td>70</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Beans</td>
<td>20</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recent SSSAs

- South Sudan
- Eastern + Coastal Kenya
- East + South Madagascar
- Eastern DRC
- Zimbabwe
- Southern Malawi
- South + East Zambia
- (Northern Mali 2005-06)

---

- Timor Leste
- Haiti
RESULTS

- Action plans - what to do now! (emergency/recovery)

- Action plans - what to do next 1-5 seasons (chronic stress/ developmental opps: ) ...
Example: Zimbabwe SSSA 2009

Context:
2008: $US 150,000,000 given (seed + fertilizer)
2009: same plans- 600,000 households. ½ population

Rationale
Currency had been worthless/ (1 US- 50 billion $Zim)
presumed aftermath drought

Assumed high-stress- ‘no seed’
RESULTS: Zimbabwe- SSSA 2009

Informal systems

- Harvest good - 160% increase
- Social networks strong - provide 18-38% seed
- Markets have large, good quality supply potential seed. Even strong black market for hybrid maize.
- Specialized seed producers (FFS) have surplus - they want aid community to buy!

Formal: agro-dealers starting to open up - maize
RESULTS: Zimbabwe SSSA

- Real problems- access- no currency circulating/ low purchasing power

- The direct seed aid being proposed-
  - 1) not needed
  - 2) would damage functioning channels- (esp shops)

2009/10: Donors largely moved to voucher, market subsidy tools
Emergency, chronic stress, and development responses to strengthen smallholder farmer seed systems

Humanitarian Assistance

Decision guides to identify effective seed system response, ‘how-to’ technical information, and manager checklists for proposal development and field evaluation.

For more, see Aid Response Advice.
Better Practice Advice: Implementers

- New Varieties + Seed Relief
- Agrobiodiversity + Seed Relief
- Markets + Emergency
- The Power of Evaluation
Guide: Seed System Security Assessment

- 7-step guide
- Chronic + acute stress
- Development opportunities
Summary; Emergency response

- Seed systems relatively resilient:
  ......local markets core of stability

- Access main problem- rarely availability

- Seed response has to be tailored to goal
  (nutrition; moving commercial crops)

- Food insecurity ≠ Seed insecurity

- SSSA methods exist, should be used, sharpen response
PART II:
Where do smallholder farmers access the seed they plant?

Lessons from SSSA:
-- for developmental actions
## Seed System Security Assessments:

\[ n = 10,120 \text{ observations} \]

<table>
<thead>
<tr>
<th>SSSA Country</th>
<th>Date</th>
<th>Stress context</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malawi</td>
<td>2011</td>
<td>Drought</td>
<td>682</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low purchasing power</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>2011</td>
<td>Drought</td>
<td>745</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decline of maize, low</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>purchasing power</td>
<td></td>
</tr>
<tr>
<td>DR Congo</td>
<td>2012</td>
<td>Ongoing conflict</td>
<td>548</td>
</tr>
<tr>
<td>(Katanga)</td>
<td></td>
<td>Low innovation, weak</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>infrastructure</td>
<td></td>
</tr>
<tr>
<td>Haiti</td>
<td>2010</td>
<td>Earthquake</td>
<td>3564</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weak state, low innovation</td>
<td></td>
</tr>
<tr>
<td>S Sudan</td>
<td>2010</td>
<td>Post-conflict</td>
<td>3986</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weak state &amp; infrastructure</td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2009</td>
<td>Political Instability/</td>
<td>595</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Currency Collapse</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Declining purchasing power</td>
<td></td>
</tr>
</tbody>
</table>
% of seed supplied – all crops  n= 10,120

Local markets: 51%
Own Stocks: 30%
Agro-dealers: 17%
Others: 2%
Seed Sources - all crops

n=10,120

- Local markets
- Own stocks
- Agro-dealers

Malawi
Kenya
DRC (Katanga)
Haiti
South Sudan
Zimbabwe
Crops supplied by local markets— for seed

<table>
<thead>
<tr>
<th>Maize</th>
<th>Millet</th>
<th>Sweet Potato</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bean</td>
<td>Okra</td>
<td><em>Bambara Nut</em></td>
</tr>
<tr>
<td>Groundnut</td>
<td>Cabbage</td>
<td>Eggplant</td>
</tr>
<tr>
<td>Sorghum</td>
<td>Yams</td>
<td>Taro</td>
</tr>
<tr>
<td>Pigeonpea</td>
<td>Carrots</td>
<td>Pumpkin</td>
</tr>
<tr>
<td>Cowpea</td>
<td>Tomato</td>
<td>Chickpea</td>
</tr>
<tr>
<td>Sesame</td>
<td>Leeks</td>
<td>Spinach</td>
</tr>
<tr>
<td>Green Gram</td>
<td>Onion</td>
<td>Greens</td>
</tr>
<tr>
<td>Rice</td>
<td>Lima Bean</td>
<td>Cotton</td>
</tr>
<tr>
<td>Cassava</td>
<td>Pepper</td>
<td>Pea</td>
</tr>
<tr>
<td>Irish Potato</td>
<td>Pepper</td>
<td></td>
</tr>
</tbody>
</table>
Seed Sources - *legumes*  

\[ n=3,324 \]

![Bar chart showing seed sources for legumes in different countries.](image)

- **Local markets**
- **Own stocks**
- **Agro-dealers**

<table>
<thead>
<tr>
<th>Country</th>
<th>Malawi</th>
<th>Kenya</th>
<th>DRC (Katanga)</th>
<th>Haiti</th>
<th>South Sudan</th>
<th>Zimbabwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Malawi**: High local market and own stocks, low agro-dealers.
- **Kenya**: Balanced between local market, own stocks, and agro-dealers.
- **DRC (Katanga)**: High local market and own stocks, low agro-dealers.
- **Haiti**: Very high local market and own stocks, negligible agro-dealers.
- **South Sudan**: Balanced between local market, own stocks, and agro-dealers.
- **Zimbabwe**: High local market, moderate own stocks, negligible agro-dealers.

**Note**: Numbers indicate the percentage of each source used for each country.
Maize market sources, by gender

n=464
## Local Markets and farm area

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt; 0.5 ha</th>
<th>&gt; 2 ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Markets</td>
<td>54%</td>
<td>18%</td>
</tr>
<tr>
<td>Own Stocks</td>
<td>18%</td>
<td>77%</td>
</tr>
</tbody>
</table>

(DRC data, n=548)

[Diagram showing the relationship between farm area and % supplied, with Own Stocks and Local Markets depicted as areas on a graph.]
Sources of new varieties  \( (n=1,683) \)

- **68%**: NGO/Gov't assistance
- **14%**: Local markets
- **11%**: Agro-dealers
- **7%**: Remaining categories

Includes:
- Social networks: 7.5%
- Contract growers: 0.2%
- Community seed groups: 1.7%
- Other: 1.7%
To strengthen seed systems—
one thrust: **build on markets: local and formal**

**LOCAL MARKETS**
- Provide heart of seed supply—Crisis periods, For the poor
- Ensure diversity/tailored response (wide range crops)
- Supply especially nutrition-linked crops
- Offers place for innovation-new varieties

**FORMAL MARKETS;** maize, horticultural seed
Key points for impact-oriented seed system interventions (for scaling)
Agro-dealers

Few legumes—except for FISP, sometimes
1. Expand proximity of agro-dealer outlets (AGRA approach)

Mapping

**Sites collected for Nodes of Growth**

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

- Markets
  - Seed Sites
    - Agrovet
    - Farmer
    - Leldet demo.
    - KARI-RICE
    - Seed supplier

Recommendations

**Location of new Seed Outlets - Nzauí**

- After 1 Iteration - 38% of population within 1 hour
- After 8 Iterations - 80% of population within 1 hour

23% farmers currently within 1 hr. seed outlet (Farrow et al 2010)
2. Expand type of ‘outlets’

a. License ‘Mom and Pop’ stores

b. Encourage sale in ‘public venue’
   ■ Supermarkets (Malawi)
   ■ Open markets (across Africa)
3. Design delivery toward 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
4. Transfer/feedback strategic information

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

c. Engage farmers + large traders on their marketing experience with select varieties
5. Invest more on the ‘back end’: Storage
New frontiers! leveraging local seed markets

Entry point-- Large traders!
6. Traders move new varieties

- New legumes (beans gnuts)
- New crops (horticultural)
7. Traders can sharpen seed quality (for 95% seed!)
8. Transfer/feedback strategic information for farmers + traders

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

c. Engage large traders on their marketing experience with select varieties
APPLIED Developmental insights: SSSAs

- Actively catalyze integrated opportunities:
  - multiple leverage points, e.g.
    - expand outlets (even non-seed)
    - design delivery **for** smallholder farmer (e.g. small packs in kiosks)
    - develop strategic information and feedback systems

- Don’t ignore the elephant in the room -- informal sector:
  (51% from markets, 90% seed overall)

- Invest ($$$) in the sustainable-- at scale
Emergency, chronic stress, and development responses to strengthen smallholder farmer seed systems

Humanitarian Assistance

Decision guides to identify effective seed system response, ‘how-to’ technical information, and manager checklists for proposal development and field evaluation.

For more, see Aid Response Advice.
Thank you for joining us!

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Stay In Touch

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Upcoming Events

Ag Sector Council Seminar | Optimizing Private Sector Partnerships for Smallholder Impact | Oct 22

AgExchange | Feeding the World in 2050 | November 18-20

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