Integrating seed systems for enhancing impact: leverage points for action

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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

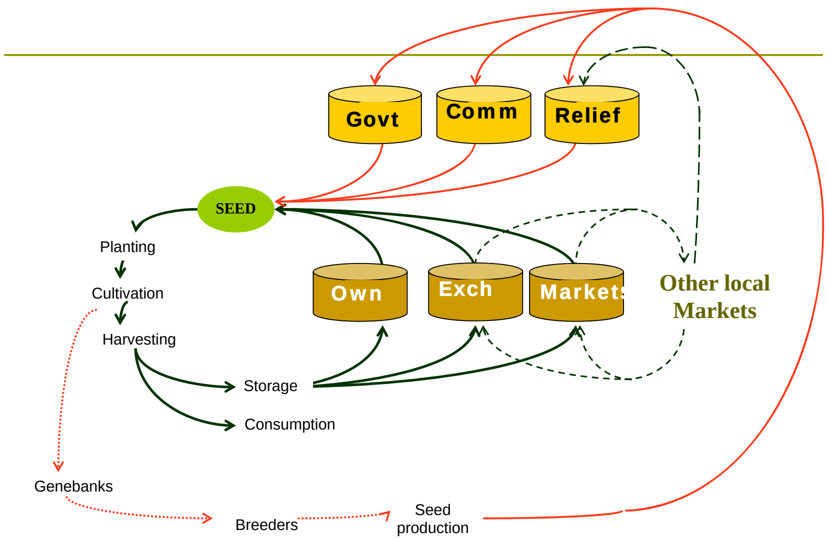
- $US 45 billion/yr Commercial seed sector
- $US 15 billion/yr- GM
- $US 6-15 billion/yr 'Informal sector'

(Bonny, forthcoming, FOSE)

Seed is vehicle for new varieties

- Across Africa, seed systems move varieties esp.
  - Maize (hybrid, OPV))
  - Horticultural seed (vegetable)
  - Groundnut
  - …..?

Channels through which Farmers Source Seed



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'**

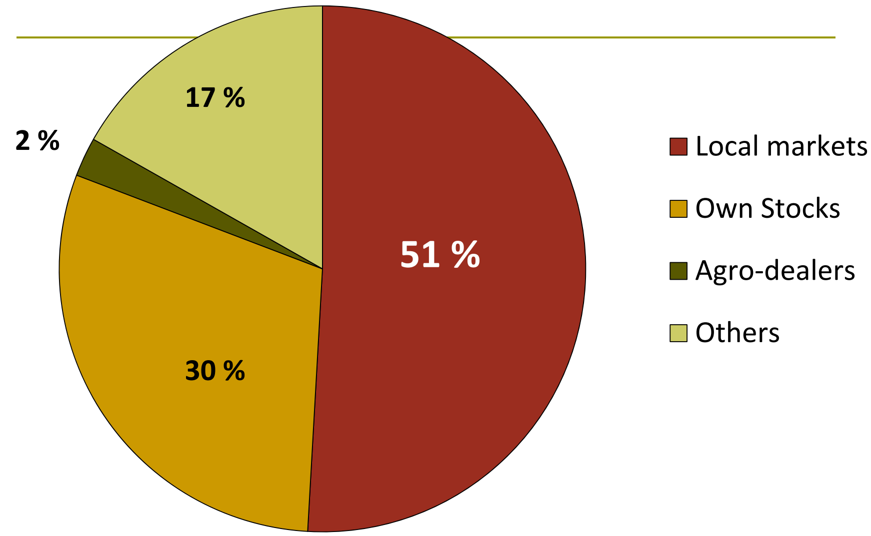
(Sperling and McGuire 2010)

Where do smallholder farmers access the seed they plant?

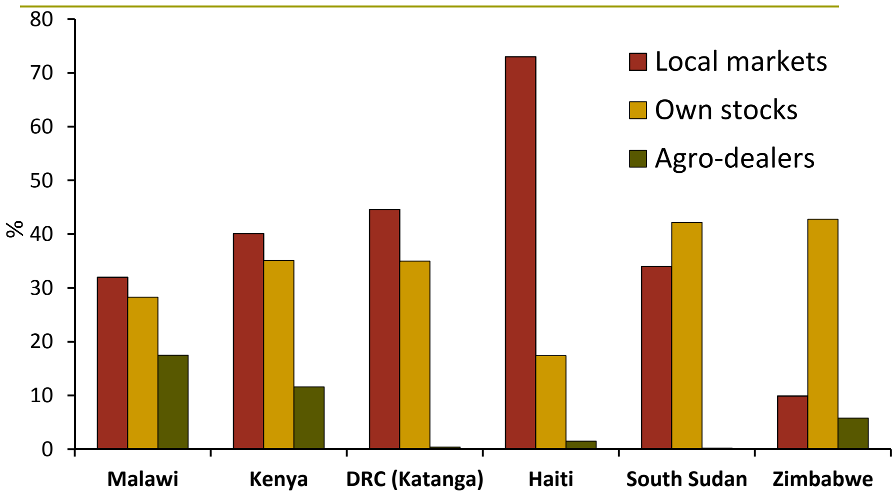
Seed Security Assessments : n = 10 ,120 observations

SSSA Country	Date	Stress context: Immediate (acute)	Stress context: Longer-term (chronic)	N
Malawi	2011	Drought	Low purchasing power	**682**
Kenya	2011	Drought	Decline of maize, low purchasing power	**745**
DR Congo (Katanga)	2012	Ongoing conflict	Low innovation, weak infrastructure	**548**
Haiti	2010	Earthquake	Weak state, low innovation	**3564**
S Sudan	2010	Post-conflict	Weak state & infrastructure	**3986**
Zimbabwe	2009	Political Instability/ Currency Collapse	Declining purchasing power	**595**

% of seed supplied – all crops n= 10,120



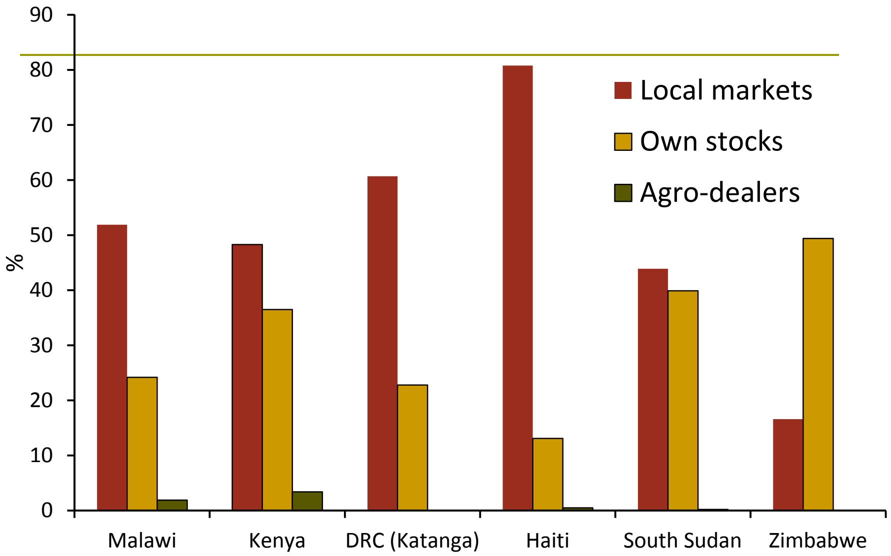
Seed Sources - all crops n=10,120



Crops supplied by local markets– for seed

Maize
Bean
Groundnut
Sorghum
Pigeonpea
Cowpea
Sesame
Green Gram
Rice
Cassava
Irish Potato
Millet
Okra
Cabbage
Yams
Carrots
Tomato
Leeks
Onion
Lima Bean
Pepper
Mustard
Sweet Potato
Bambara Nut
Eggplant
Taro
Pumpkin
Chickpea
Spinach
Greens
Cotton
Pea

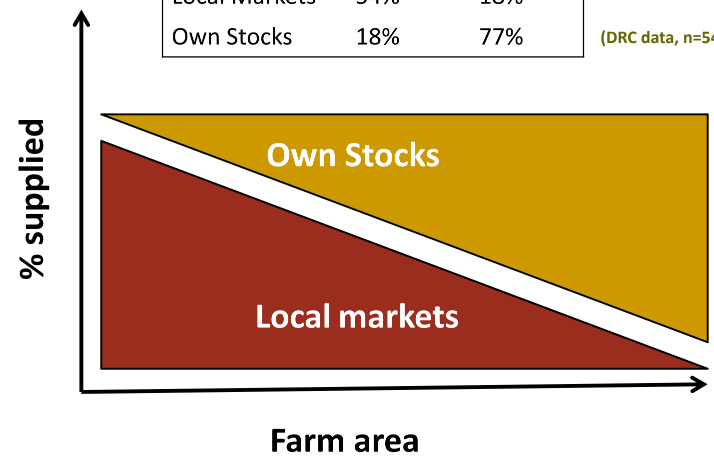
Seed Sources - legumes n=3,324



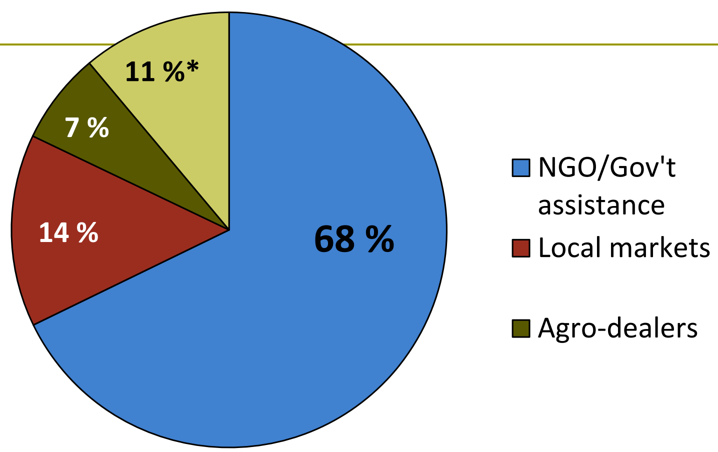
Local Markets and farm area

Source	< 0.5 ha	> 2 ha
Local Markets	54%	18%
Own Stocks	18%	77%

(DRC data, n=548)



Sources of new varieties (n=1, 683)



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 local markets**

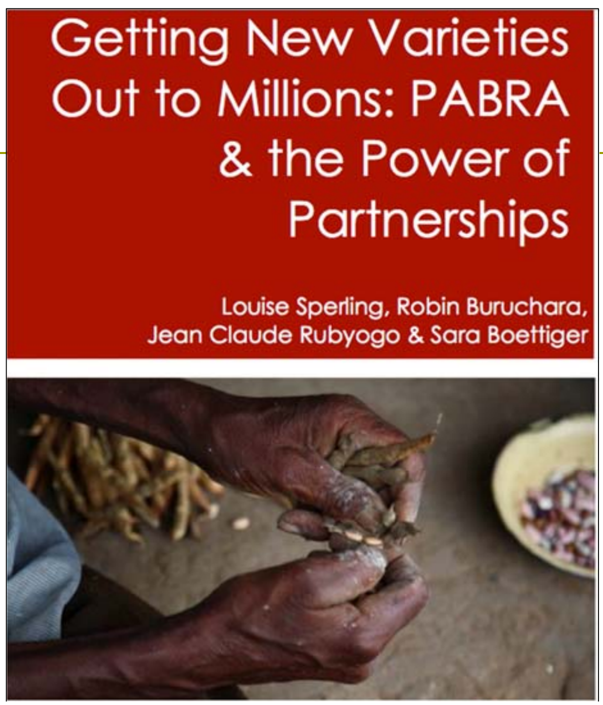
- ✓ Provides heart of seed supply-
  - ✓ Crisis periods
  - ✓ For the poor
- ✓ Ensures diversity/tailored response (wide range crops)
- ✓ Supplies especially nutrition-linked crops
- ✓ Offers place for innovation-new varieties

Key points for impact-oriented seed system interventions (for scaling)

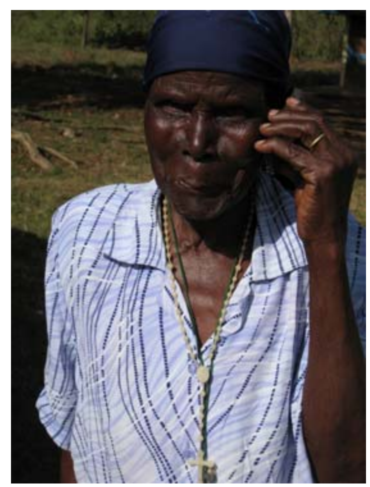
1. Strategic Brokering

Partner Type	Responsibilities within PABRA partnership model
NARS	✓ Development of varieties ✓ Production of breeder/foundation seed
NGOs, FO, CBOs, Public extension + development programs	✓ Decentralized testing of varieties ✓ Support for decentralized seed production
Commercial seed producers	✓ Marketing of certified seed of popular varieties ✓ Provision of business opportunities for contracted seed out-growers
Grain traders	✓ Collaboration in ID of preferred genotypes especially marketing types ✓ Linking local seed producers with wider bean seed markets
Farmers (individual/ + groups)	✓ Testing and identification of the preferred genotypes ✓ Producing seed locally
CIAT + Bean Networks	✓ Provision of potential promising germplasm to NARS ✓ Support for skills enhancement in seed system strengthening /business skills

Pan African Bean Research Alliance: (PABRA)
2003-2013: 18.3 million households reached



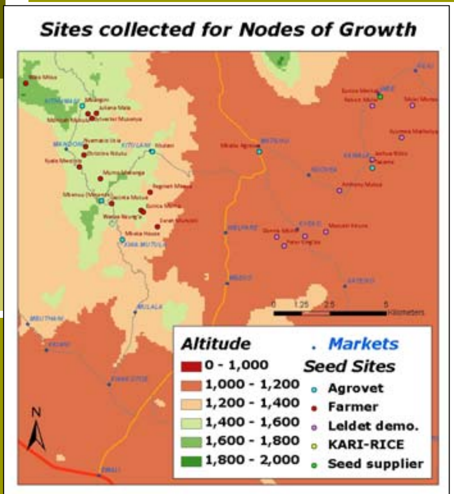
2. Scale up 2-way information systems

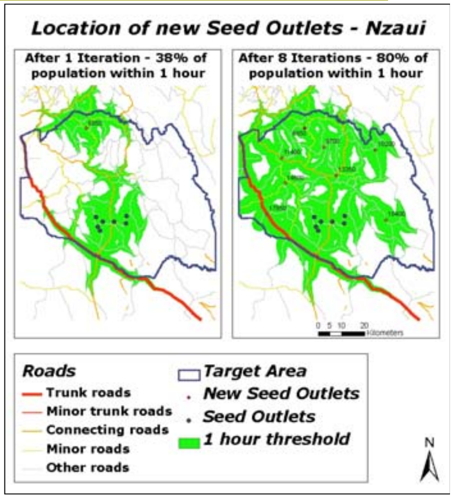


- ✓ Share information
- ✓ Feedback information
- ✓ CREATE DEMAND

3. Expand proximity of sale outlets

Mapping → **Recommendations**





23% farmers currently within 1 hr. seed outlet

Expand type of 'outlets'

1. Expand agro-dealer outlets (AGRA approach)
1. License 'Mom and Pop' stores
2. Encourage sale in 'public venue'
   - Supermarkets (Malawi)
   - Open markets (across Africa)

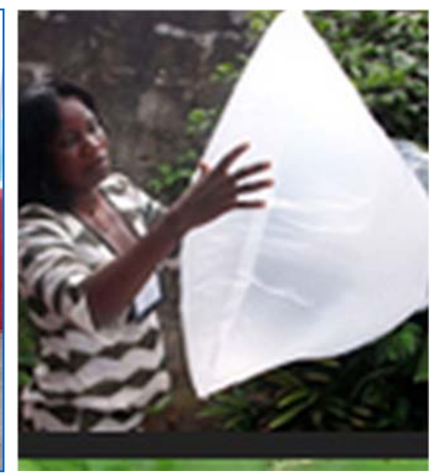
4. Move delivery design **toward** smallholder: small packs

- **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

5. Invest more on the 'back end': Storage



Summary: points for integrating seed systems

- ✓ Broker legume platforms
- ✓ Catalyze 2-way information systems
- ✓ Expand outlets for seed sale
- ✓ Design package TOWARD small holder farmers
- ✓ Invest in the back end- storage

Research areas: urgent challenges

1 Seed quality: certified versus QDS, truthfully labeled: quality versus production payoffs + risks

- Farmer-produced: much ‘anecdotal’ evidence that can be acceptable quality;
  (Buruchara and David, 1994; Oytsula et al 2004; Thiele 1999)
- QDS: (Zambia, Tanzania, starting in Madagascar)
  NO (??) direct comparisons QDS versus certified

Need systematic evidence: across regions/crops

2 Cost of seed production + delivery

- CIAT-REVIEW- 20 cases, DRC, Rwanda, Kenya, Burundi)

Certified bean: 200 to 400% local---
and “yield returns do not compensate”

Source 1992 Actes de la conference sur le lancement des variétés, la production, et la distribution des semences de haricot dans la région des Grands Lacs

- **CRS/FAO - 6 cases Africa**

Community-based seed production- 6 cases Africa
no cost data

Source 2013 . Review of community seed porduction practices in Africa: lessons and future perspective. Prepared for the UN-Food and Agriculture Organization

3 Strategies for leveraging local seed markets

Entry point-- Large traders !

◆ Move new varieties

- New legumes (beans gnuts)
- New crops (horticultural)

◆ Sharpen seed quality (for 95% seed!)

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 R+D: Four major closing points:

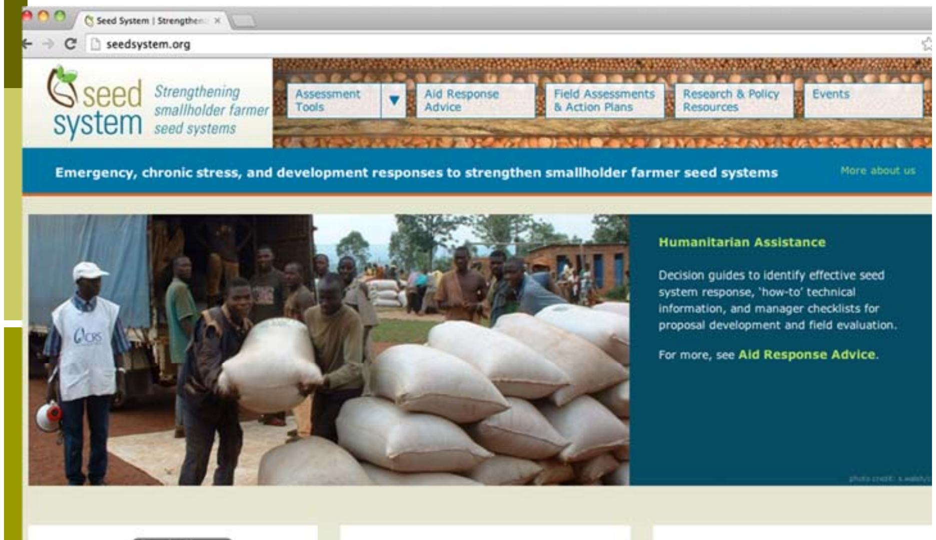
- Don't ignore the elephant in the room -- informal sector
  (51% from markets, 90% seed overall)

- 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)
  - Explore trader role in passing strategic information

- Tackle unresolved R&D problems
  - Seed quality versus performance
  - cost of diverse production/delivery models

- Invest ($$$) in the sustainable-- at scale

seed SYSTEM http://seedsystem.org



http://www.apxc.org/#!scaling-seed