

Issues in Seed Sector Development: Illustrations from Zambia, Zimbabwe, and Ethiopia

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Zambia and Zimbabwe: Introduction

- Key findings from case studies of seed sector development following economic reforms
- Based on fieldwork and analysis carried out in 1996-97 by Joseph Rusike
- Focus on maize, sorghum, groundnut

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Zambia & Zimbabwe: Key Findings (1)

Adoption

- Hybrid maize adoption very high among smallholders 1980s-early 90s. Still high in Zimbabwe, but falling in Zambia -- weaker private sector, dependence on subsidized input programs
- Improved varieties of sorghum and groundnut available, but
 - for sorghum, sustained adoption linked to free or subsidized distribution of seed during early 90s. Little commercial demand for seed
 - little adoption of improved groundnut

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Zambia & Zimbabwe: Key Findings (2)

Changing public-private sector roles

- Private sector activity has greatly expanded post-reform
- Before gov't the single source for new varieties
- Now multiple sources of new varieties but commercial farmers are the major beneficiaries.
 - Research-based int'l seed companies dominate the supply of hybrid maize seed
 - Int'l research centers, NGOs, informal farmer groups, commodity traders control supply of OP seed for maize, sorghum and groundnuts
- Government organizations are also beginning to transfer regulatory functions to the private sector

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Zambia & Zimbabwe: Key Findings (3)

A tri-level seed system is emerging

- 1st tier
 - Seed sectors with high profit margins and high and regular annual seed sales (hybrid maize, sunflower and hybrid sorghum) dominated by several large companies with financial, technical resources to carry out private research and extension programs.
 - Hybrid seed is multiplied by an elite group of large-scale mechanized farmers.

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Zambia & Zimbabwe: Key Findings (4)

- 2nd tier
 - Financial returns to private (for-profit) research on groundnuts and OPVs of maize and sorghum too low to attract large seed firms, but emerging domestic companies and commercially-oriented NGOs beginning to show interest
- 3rd tier
 - NGOs and farmer organizations undertake village level varietal screening, seed production and germplasm conservation on subsistence crops with little commercial motivation

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Zambia & Zimbabwe: Major Constraints

- Limited demand for improved seed by smallholders
- High startup costs for seed production
- Poorly targeted seed relief programs
- Setting up marketing channels in rural areas is expensive
- Inconsistent, poorly enforced government regulations

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Zambia & Zimbabwe: Strategies

Fostering seed sector transformation

- Reduce the learning costs for new seed enterprises
- Encourage development of seed markets instead of seed giveaways where commercial market development is possible
- Expand markets for smallholder commodities
- Strengthen public/private research for smallholder commodities
- Rationalize public sector seed regulations and functions
- Improve contract enforcement

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Ethiopia: Introduction to SG/NEP Program (1)

Background

- MSU/MOA assessments of SG programs in Ethiopia (97/98) and Mozambique (96/99).
- SG programs operate in 12 SSA countries
- Focus on intensification -- increasing farm-level demand for new crop cultivars, fertilizers, techniques
- 2 key components
 - Demonstration plots in high-potential areas
 - Programs operate through government research and extension agencies
- Criticisms: blanket recommendations, sustainability

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Ethiopia: Intro to SG/NEP Program (2)

Improved input use:

- 30% of farmers used fertilizer (1995/96)
- 11.08 kg NPK/ha
- < 1% used improved seed

SG Program Characteristics

- Started 1993, partner agency MOA
- Maize package (0.5 ha) 12.5 kg hybrid seed, 50 kg DAP, 50 kg urea (SG program also covers other crops)
- Terms 25-50% down payment, 0% interest, balance due at harvest
- Gov't has adopted SG model and launched a major extension/prod. initiative

Ethiopia: Intro to SG/NEP Program (3)

Program Development-- # farmers enrolled

<u>Year</u>	<u>Gov't NEP</u>	<u>SG</u>	<u>Total</u>
1993		153	153
1994		1,322	1,322
1995	32,046	3,185	35,231
1996	341,244	2,127	343,371
1997	600,634	2,003	602,637
1998	2,900,000		

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Ethiopia: MSU/MOA Research

- Research questions
 - Is it profitable for smallholders to use improved maize technology?
 - What are the key factors affecting profitability?
 - Will farmers continue to use improved technology after the special program ends?
- Methods
 - 1997: survey of 263 SG current participants and graduates in Oromiya (hi-potential area)
 - 1998: input market survey

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Ethiopia: Key Results (1)

Yields: Farmers using SG/NEP package achieved large yield increases

mt/ha

SG	5.5 mt/ha
SG grads using hi inputs	5.8-6.8 mt/ha
Non-program	2.8-3.8
Nat'l/regional avg	1.9-2.1
Potential	9-10

Financial Profitability: net income/ha and per labor day were very high for improved technology users; profitability was extremely robust when output, input prices changed (\$317-\$340/ha)

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Ethiopia: Key Results (2)

- Economic profitability depends on
 - whether maize produced replaces imported maize or produced for export
 - reducing costs of credit/extension/seed supply

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Ethiopia: Key Results (3)

Factors Contributing to Success

- strong political commitment
- inputs delivered on time
- credit recovery excellent
- very favorable environment for maize
- high literacy levels and extension officers well-educated

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Ethiopia: Seed Sector (1)

Future Sustainability: The Achilles Heel of Seed Supply

- Seed sector still dominated by parastatal, Ethiopian Seed Enterprise -- supplies 47% of demand
- Pioneer, other private companies very slow to take off -- supply 5%
- Demand for improved seed has escalated sharply with SG/NEP, but supplies short, quality poor
- Access to improved seed a major incentive for participation in program. Program graduates also assist in training new farmers in return for access to improved seed

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Ethiopia: Seed Sector (2)

- Supply of seed an increasingly critical problem
- Improved seed currently “rationed” through NEP. In 1999 insufficient seed even for new program participants. Program graduates forced to replant hybrid seed or revert to local OP varieties
- Efforts to draft/enact legislation to encourage more private sector participation lagging