

Conceptual Framework for Seed Sector Development in Sub-Saharan Africa

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Introduction (1)

- Improved seed critical to increasing agricultural productivity
- Beginning in mid-70s, gov'ts, donors established large-scale parastatal seed facilities
- These systems supplied only 10% of total seed. Most seed still saved on-farm
- Problems included
 - high costs of production and distribution
 - narrow range of crops/varieties
 - inconsistent seed quality
 - escalating financial problems

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Introduction (2)

- Many seed parastatals subsequently privatized or dissolved as a part of structural adjustment reforms
- For-profit seed firms emerged, but serve only a few commodities (e.g., hybrid maize)
- NGOs increasingly active in varietal testing and development of farmer seed enterprises, but not clear whether these can be sustained
- In general smallholder access to improved varieties has worsened following economic reforms

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Presentation Outline

- Part 1: What is the Seed System?
- Part 2: How Does the Seed System Evolve?
- Part 3: Seed Demand and Supply Dynamics
- Part 4: Challenges for Seed Sector Development

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Part 1: What is the Seed System?

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What is the Seed System? (1)

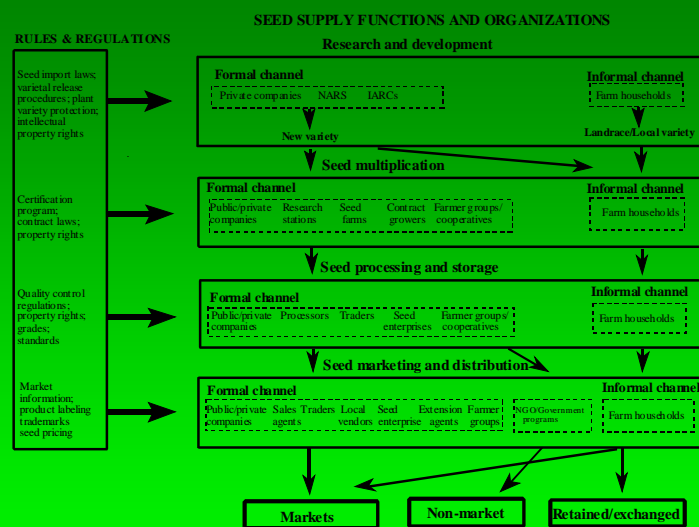


Figure 1. Seed System: An Organizational and Institutional Framework

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What is the Seed System? (2)

- Well-functioning seed system uses the appropriate combinations of formal, informal, market and non-market channels to stimulate and efficiently meet farmers' evolving demand for quality seed

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Part 2: How Does the Seed System Evolve?

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How Does the Seed System Evolve? (1)

- Stage 1
Informal seed system predominates, farmers save own seed; rate of new varietal development/adoption low
- Stage 2
Improved varieties developed by public research begin to replace local varieties; use of complementary inputs increasing; beginning of private sector involvement

How Does the Seed System Evolve? (2)

- Stage 3
Private sector begins to play active role in R&D, part for hybrids, specialized cash crops. Seed distribution systems become more org. varied and decentralized.
- Stage 4
Seed system and ag sector are well developed. Commercial seed production and marketing are common, effective seed laws and regulations are in place, linkages with actors outside seed sector well est., use of improved seed is widespread

How Does the Seed System Evolve? (3)

- But transformation process is not a linear progression from an informal to a formal system
- Seed systems for different commodities follow distinct development paths, e.g.,
 - hybrid maize may eventually be composed only of formal seed channels
 - for beans, wheat, cowpeas, groundnuts, both formal and informal sectors may continue to play an important role in meeting seed demand, even in a mature phase

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Part 3: Seed Demand and Supply Dynamics

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Seed Demand & Supply Dynamics (1)

- Seed system development: a dynamic process of matching supply to the changing demand for seed

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Seed Demand & Supply Dynamics (2)

Factors Affecting Demand

- farmer ability to produce and save seed
- type of crop (self-pollinated, open-pollinated, root/tuber)
- yield/quality advantage of purchased seed
- cost of seed (purchase plus transport costs)
- price/availability of complementary inputs
- relative price of crops
- farmer forecast of weather conditions, output prices

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Seed Demand & Supply Dynamics (3)

Categories of Seed Users and Seed Demand

- Lg-and med-scale commercial farmers rely heavily on formal seed sector
- Small-scale semi-subsistence farmers who rely on retained seeds and informal exchange
- seed-insecure farmers who are forced to consume all or a major portion of their harvests because of (a) severe chronic household economic conditions or (b) temporary emergencies -- drought, flood, war, disease/insect infestation

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Seed Demand & Supply Dynamics (4)

Differences in seed demand among groups

- Lg- and med-scale farmers use markets to purchase genetic materials highly responsive to chemical inputs and which embody specific characteristics for the market
- Subsistence-oriented producers more interested in storage quality, taste, resistance to pests

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Seed Demand & Supply Dynamics (5)

Factors Affecting Supply

- Biological and technical characteristics affect potential profitability of seed prod/marketing and importance of formal vs. informal organizations
 - seed production method, sowing rate, multiplication factor, rate of deterioration, frequency of purchase
- Commercial interest in seed production varies with the technical possibility of excluding non-buyers

Seed Demand & Supply Dynamics (6)

- Seed of self-pollinated crops (e.g., many grain legumes) is easily multiplied, more suited to dissemination through the informal seed system. For cross-pollinated crops (e.g., maize, sorghum and millet) both formal, informal seed systems are important.
- Crops that have a high multiplication factor and relatively low seeding rate (e.g., hybrid maize, sorghum and millet) attractive to the formal sector. Contrast to grain legumes-- low multiplication factors and high seeding rates.
- Availability of new varieties with significant yield and/or quality advantages, biotic/abiotic stresses also important.

Part 4: Challenges for Seed Sector Development

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Challenges for Seed Sector Development (1)

- How to link formal and informal organizations that make up the seed supply system to meet both market and non-market demand for seed?

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Challenges for Seed Sector Development (2)

Strategies to Enhance Availability, Quality of Seed Supplied

- Strengthen public agricultural research system
 - ___ --build a constituency for research among farmers by making research more demand-driven, responsive to needs of different types of farmers. Link advancement to variety adoption.
 - ___ --strengthen linkages with regional/international research centers
 - develop capacity to move from homogeneous seed recommendations to development/dissemination of varieties targeted to specific zones/farmers
 - ___ --allow NARIs to auction rights to produce seed from varieties they develop

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Challenges for Seed Sector Development (3)

Strategies to Lower Seed Costs

- Promote the production of seed commodities by seed suppliers likely to have a comparative advantage in producing them
- Improve access to credit, foreign exchange for small/medium seed producers and distributors
- Decentralize seed multiplication and distribution by providing financial and technical assistance for outgrowing programs and community-based seed production and sale
- Improve infrastructure to lower production and distribution costs

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Challenges for Seed Sector Development (4)

Strategies to Increase Demand for New Seeds

- Strengthen public, private extension to increase farmer knowledge about seed, transmit farmer preferences to researchers. E.g., demo programs, work with farmer assn
- Voucher programs in preference to seed giveaways where commercial markets exist
- Create databank at regional level of varieties which are potential candidates for testing in similar agro zones in other countries.
- Development/extension of complementary crop management and storage technologies to lower production risk
- Include information about seed availability, price in MIS
- Market seeds in small packages
- Initiatives to expand output markets

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Challenges for Seed Sector Development (5)

Changes in regulatory environment: seed availability, quality

- Institute system of quality-declared seed instead of mandatory certification
- License private sector to carry out certification inspections
- Promote alternative means to protect farmers from poor quality seed -- e.g., seed trade associations that maintain, enforce standards, farmer assns, public awareness campaigns

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Challenges for Seed Sector Development (6)

Changes in regulatory environment: trade

- Harmonization, streamlining of varietal release and import regulations in the region to permit easier trade, possibility of regional commercial markets for some commodities
 - release of variety across all countries with similar ageco zones once it has met official requirements in one