

# **Some Dilemmas for Cereal Seed Supply in sub-Saharan Africa**

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# Options for Seed Supply

- **Private sector**
- **Public sector**
- **Community or farm-level**

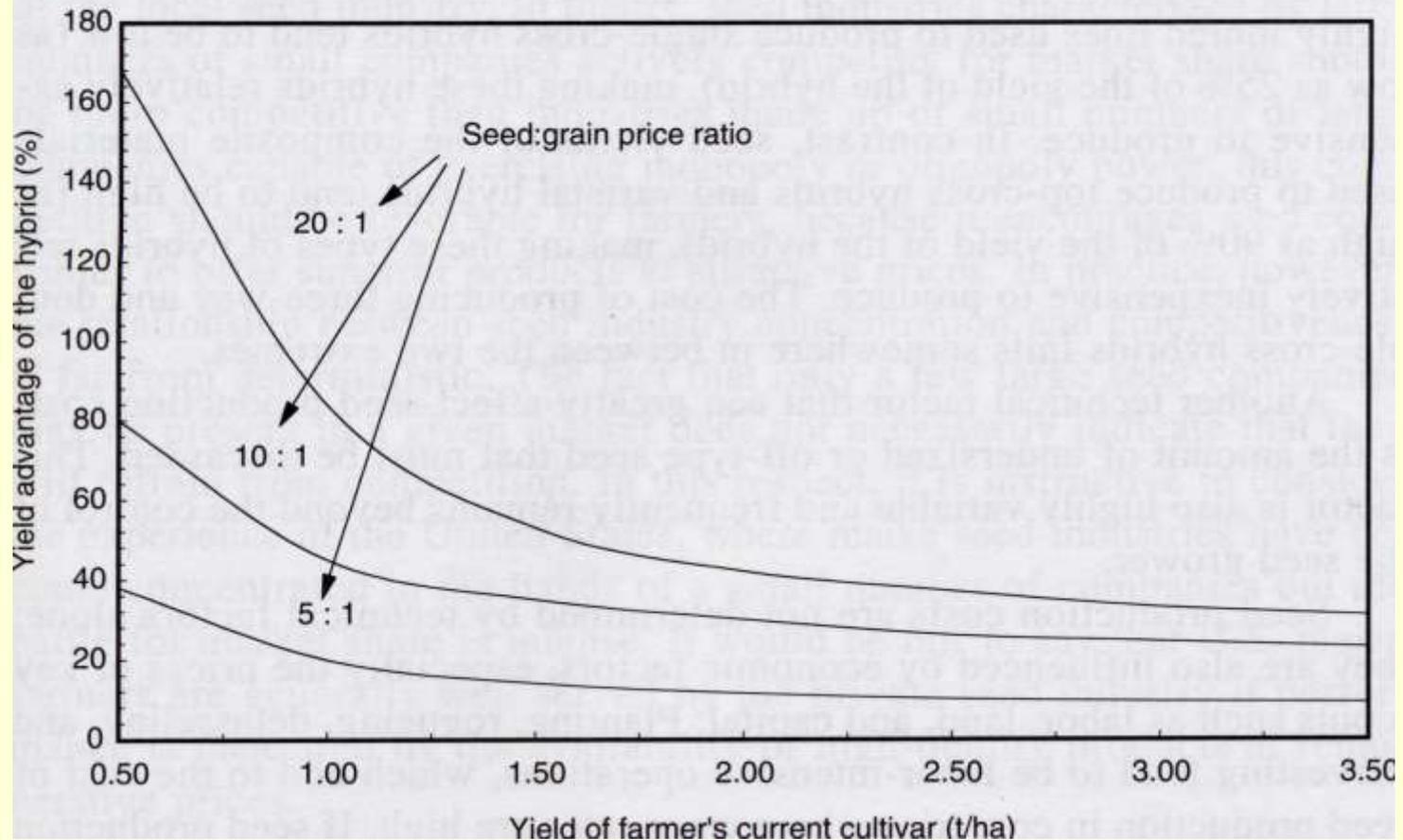
# Development of Private Seed Sector

**In sub-Saharan Africa, the lack of diversified and efficient agricultural markets means that seed demand is low; with few producers to meet this demand, seed price is relatively high.**

# Seed Price

(Source: Heisey et al)

Figure 8.1 Yield Advantage over Farmer's Current Cultivar Required to Repay Additional Cost of Hybrid Seed and Generate 100% Marginal Rate of Return



Commercial seed industries usually begin with high-value products

- Hybrid maize (USA, SSA)
- Hybrid pearl millet and sorghum (India)
- Vegetables (many countries)

(Then expand to other types of seed, assuming a robust agricultural economy)

# The Public Seed Industry





# Community seed enterprise

- **There are many examples of effective “community” seed provision, through local seed specialists or wider exchange networks.**
- **Formally organized community seed production can be useful for testing and distributing new varieties.**
- **But the idea of commercially viable *community seed enterprises* keeps getting reinvented, without any evidence that it has ever worked.**
- **Development projects pay all of the transactions costs (source seed access, quality assurance, marketing, etc.), and then walk away.**
- **Despite economies of scale, small seed businesses can occupy important niches, but not micro-enterprises.**

# Community seed production projects in Nepal

| Donor       | Years   | Focus                    | Results                                    |
|-------------|---------|--------------------------|--|
| UK          | 1984-95 | food grains              | little seed sale after project             |
| USA         | 1980-88 | food grains              | most seed production abandoned             |
| Netherlands | 1987-98 | cereals and vegetables   | groups disbanded                           |
| UK          | 1992-97 | food grains and potatoes | groups ceased production                   |
| UK          | 1992-97 | vegetables               | groups successfully sell seed to merchants |

(Source: Joshi)

So, if the commercial seed industry requires the demand of a thriving agricultural economy and begins with higher-value products...

And public seed enterprises have failed...

And community seed enterprises are non-starters...

Then what is the immediate answer for cereal seed?

- Demand for seed is the key.
- The formal seed industry in Africa will not grow simply by supply-side interventions.
- A thriving formal seed system is as much an outcome of a dynamic agricultural economy as it is a contributor to that economy.
- Farmers need reasons to buy seed.

# The nature of seed demand.

A farmer may acquire seed from an off-farm source because:

- *The previous harvest was poor*
- *A different variety is sought*
- *It is difficult or inconvenient to save good quality seed*
- *There are restrictions on seed saving: biological (hybrids) or legal (IPRs).*

(If none of these obtain, there is no reason to seek seed.)

# Farm-saved seed

## Farmers' Sources of Wheat Seed. Punjab (India) and Kansas (US)

| Seed Source        | Punjab (1992) (%) | Kansas (1973) (%) |
|--------------------|-------------------|-------------------|
| Farm-saved         | 80                | 77                |
| Other farmers      | 11                | 18                |
| Formal seed sector | 9                 | 5                 |

Sources: Sidhu et al; Stanelle et al.

# Winter Wheat Seed, USA, 1987/88

| Region    | Use purchased seed | Seed:grain price ratio | Yield advantage of certified seed |          |
|-----------|--------------------|------------------------|-----------------------------------|----------|
|           |                    |                        | <i>Bushels/acre</i>               | <i>%</i> |
| Northwest | 64%                | 2.6                    | 6.1*                              | 10%      |
|           |                    |                        |                                   |          |
| Plains    | 33%                | 3.2                    | 1.2                               | 4%       |

\*Sig < 5%

Source: Knudson and Hansen

# Public sector roles: Plant breeding

- Variety development and deployment:  
Incentives for responsive plant breeding
- IPRs: The false promise of PVP and royalties as sources of income for research.
- Public-private links: Foundation seed.

# Foundation Seed Production

- Definition of “foundation seed” (breeders, basic, registered, etc.)
- Foundation seed: a physical product and an institutional innovation
- A critical link between public plant breeding and private seed delivery
- In most successful cases, there is a financially and administratively independent entity with oversight by public breeding, private industry, farmers, and regulatory bodies.

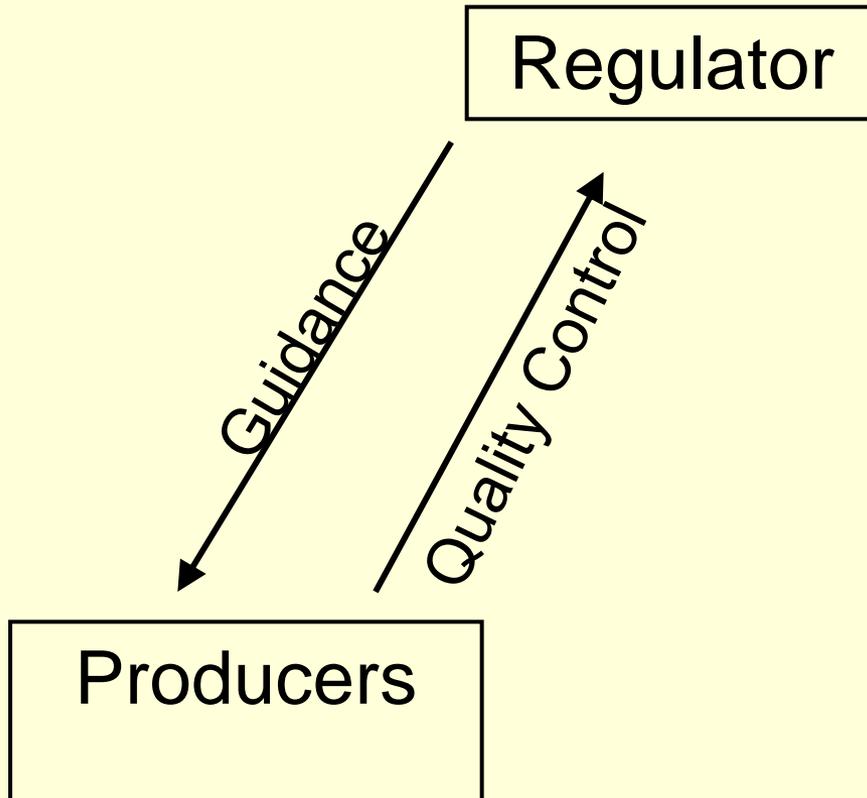
# Public sector roles: Regulation

Much attention to regional harmonization of seed regulation (variety release, seed certification, phytosanitary law, etc)

Seed certification and quality control is a particular challenge

(But much regulatory attention now focused on biosafety, in relation to GM crops)

# Regulation: The conventional view



# The role of farmers in regulation

