ETHIOPIAN SEED SYSTEMS:

REGULATIONS, INSTITUTIONS AND STAKEHOLDERS

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Researchers in Ethiopia have been developing new varieties of major food crops since the 1950s. To date, however, improved seed for only a limited number of crops are produced in significant quantities for distribution to smallholder farmers. Across the entire country, just 5 percent of farmers in Ethiopia have access to these improved varieties, typically through public distribution systems that are often unable to meet their specific needs.

This study finds that the near absence of competition in the production, distribution, and marketing of seed contributes significantly to the high cost of seed production and poor coverage of seed distribution in Ethiopia.

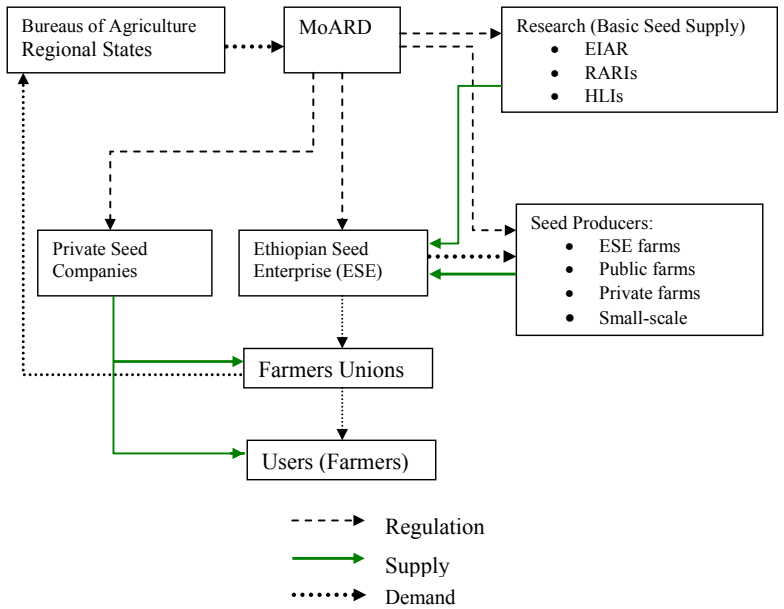
Recent steps to encourage competition, such as the increased involvement of the private sector and the enactment of a plant breeder rights law, are positive moves in the right direction. But other regulatory and investment policies must also be considered to build a strong, vibrant, and competitive seed sector.

From the almost costless effort of saving seed from harvest, agrarian agents can cultivate successive generations of crops and reap the benefits of income and subsistence. The application of modern science, by enhancing the productive powers of the seed, has the ability to multiply these benefits further. However, seed systems, which involve the institutions and actors in the development, production and distribution of seeds, are complex due to the problematic property rights, information asymmetries, coordination problems, and inelastic supply responses.

In Ethiopia an estimated 95 percent of seed planted are saved, selected, exchanged, and planted by farmers themselves. This informal seed system eclipses the formal system that dates back to the 1950s with the establishment of crop breeding programs at the Jimma and Alemaya Agricultural Colleges.

The goal of this study is to evaluate the seed production and distribution systems in Ethiopia, assess the roles of various players in the system, and suggest policy options to strengthen the system's relevance with respect to small-scale, resource-poor farmers.

Figure 1. Structure of the Ethiopian seed system



The study was conducted in 2005 using rapid appraisal methods that relied primarily on (a) data collection using pre-prepared checklists; (b) semi-structured interviews and focus group discussions with key informants; (c) direct observation of agents within the seed system; and (c) document analysis.

About ESSP

The Ethiopia Strategy Support Program (ESSP) was established in September 2004 as a collaborative undertaking of the International Food Policy Research institute (IFPRI), with headquarters in Washington DC, and the Ethiopian Development Research Institute (EDRI), with the objectives of generating policy research to address key knowledge gaps in Ethiopia's rural development strategy, building an integrated knowledge support system, and strengthening national capacity for policy analysis

THE FORMAL SEED SYSTEM

Ethiopia's seed system begins with the breeding programs at the Ethiopian Institute of Agricultural Research (EIAR) and other regional institutes and universities. Improved varieties developed here are reviewed by the National Release Committee before they are provided to the Ethiopian Seed Enterprise (ESE) for multiplication. Prior to distribution, seed are further scrutinized under the certification and other regulatory processes by public regulators to ensure the quality of the end product. Only then does seed reach the farmer.

Table 1. Seed demanded and actually supplied in the 2005 production season (quintals)

Crop	Demand	Supply	% of demand covered
Maize	155215	82458	53
Barley	70839	11628	16
Wheat	518487	106279	20
Teff	78389	4197	5
Faba Bean	77728	4761	6
Chickpea	48187	26405	55
Haricot bean	33742	7027	21
Sesame	21769	6046	28
Grand Total (including other crops)	1117597	304042	27

Source: Agricultural Inputs marketing Department, MoARD (2006)

Multiple stakeholders with numerous, often conflicting, interests and objectives make up the system. They range from non-market actors, such as public regulatory agencies (MoARD, Regional bureaus of agriculture), research institutes (EIAR, RARIs, and HLI), extension services, and non-governmental organizations; to market actors, including domestic and foreign private firms, cooperative unions, and trade associations; and farmers themselves.

The most important factor that determines the success of a seed system is the regulatory framework that is capable of minimizing various market and institutional failures. The existing regulations on seeds in the country are *varietal release procedure, provision of breeders and farmers right, breeder and basic seed supply procedure*, and *seed certification and quality assurance procedure.* Issues related to biotechnology and production and use of genetically modified crops is still under discussion.

Seed production and pricing

Seed production has increased over time with some variability. However, the demand is still far higher than supply. For example, in 2005, the amount supplied was only 27% of the annual demand. Even though there are 18 major agro-ecological zones in the country, the formal seed system in Ethiopia provides improved crop varieties for three groups of agro-ecological zones: (low, medium and high altitude), four durations to maturation (extra-early, early, intermediate, and long maturing varieties) and other context-specific attributes such as yield, drought tolerance, and disease resistance.

Furthermore, findings show that in producing maize (the major crop for which seed is produced in Ethiopia), direct labor costs (7-8 percent) and direct material costs (13 – 15 percent) are far lower than the over head cost (65 percent) of the total cost for ESE, the major seed producer in the country. This shows a huge potential for improving seed production efficiency.

Even though, the cost of production varies across locations and organizations, the sale prices for the different seeds are set by ESE and are fairly constant, with regional variation based primarily on transportation costs. However, the price shows increasing trend over the year.

Thus, crops such as maize—specifically, hybrid maize where exclusive knowledge about the hybrid's lineage confers exclusive property rights to the breeder—offer potentially lucrative opportunities for private seed companies. The entry of private seed companies into these markets could introduce some degree of competition and rationality to both production and pricing.

However, there are very few active seed companies in the distribution and marketing of seed. The recent enactment of a plant breeders' law by the Government of Ethiopia may be an important step in supporting greater investment, but other regulatory and investment hurdles may be slowing the pace of expansion in the seed sector.

Finally, it is important to recognize that farmers themselves can be active participants in the formal seed system by multiplying and distributing seed at the community level and where private firms are unable to find retailers. Unfortunately, the costs and time associated with certification and marketing are prohibitive to the smallholder, and they remain largely overlooked by the market.

CONCLUSIONS

- There is a need to further strengthen the role of the private sector in seed production, marketing and distribution in order to promote competition that will reduce seed prices. Currently there are about 26 private companies licensed to produce, 19 to import, 33 to retail and 4 to export seed. However, very few are involved in marketing and distribution directly to end-users.
- Because of the costs associated with certification, the current system excludes small scale farmers wishing to produce seed.
- There is a huge potential for the seed industry to grow by diversifying to other potential crops. Only 27% of the seed demanded was supplied in the 2005 production season. Moreover, the crop types for which seed is produced is limited to major cereals.
- It is important to further investigate why there are no seed shops in Ethiopia for cereal and pulse crops.

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