



Getting quality seed to maize farmers in eastern and southern Africa

Despite strong growth in the private seed sector in eastern and southern Africa over the last decade, most of region's millions of small-scale farmers lack easy access to affordable, quality seed of maize, the number-one food staple. A major study by CIMMYT shows the need for active investments in the region's seed sector and for policies to support its development.

Since the mid-1990s, when many countries in eastern and southern Africa opened maize seed markets to private enterprises, registered maize seed companies have proliferated, along with other types of seed producers. In the 2006-07 cropping season, 82 registered maize seed companies produced the bulk of just-over 100,000 tons of improved maize seed marketed in the region—enough to sow 35% of the region's maize land.

“The good news is that we have four times more seed companies today than 10 years ago and they have increased seed provision from 26% to 35% of the total planted maize area. Yet there is still a significant unmet demand for seed, meaning that farmers lack access to breeding progress contained in new varieties,” says CIMMYT socioeconomic Augustine Langyintuo.

With the current challenges of the global food price crisis and climate change, the work of the Drought Tolerant Maize for Africa (DTMA) project—developing and getting good quality, drought tolerant, high-yielding, locally-adapted maize varieties to farmers in Africa—is more important and urgent than ever.

The project is part of a broad partnership involving CIMMYT and the International Institute for Tropical Agriculture (IITA), national agricultural research and extension systems (NARS), seed companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and advanced research institutes. Its activities are funded by the Bill & Melinda Gates Foundation and the Howard G. Buffet Foundation and build on longer-term support by other donors, including the Swiss Agency for Development and Cooperation (SDC), the German Federal Ministry for Economic Cooperation and Development (BMZ), the International Fund for Agricultural Development (IFAD), and the Eiselen Foundation.

As part of the research by the project, Langyintuo led a study to characterize seed providers and bottlenecks to seed supplies in eastern and southern Africa. A total of 117 representatives from seed companies, NARS, and CBOs/NGOs participated and information was gathered on the seed sectors in Angola, Ethiopia, Kenya, Malawi, Mozambique, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. “There was an extraordinary 100% return

on questionnaires sent, evidence of partners’ trust in CIMMYT and interest in addressing the problem,” says Langyintuo.

In July 2008, more than 60 senior policy makers from agriculture ministries, private seed companies, seed trade associations, and regional trade blocs from 13 sub-Saharan African countries met in Nairobi, Kenya, and recommended ways to improve farmers’ access to seed of improved, drought tolerant maize varieties through policies to enhance the production, release, and marketing of these varieties.

Bottlenecks in seed supplies

The main findings of the study were that investment capital requirements and a shortage of qualified staff hinder the growth of small, local seed companies that have emerged over the past decade, according to Langyintuo. “The costs of setting up and running an office, recruiting and retaining qualified personnel, and procuring and operating production, processing, and storage facilities are beyond what many local businesses can afford, and access to operational credit is limited or nil,” he says.

“Up to 60% of a seed company’s operational budget goes into seed production. Seed companies, therefore, need affordable credit over the mid-to-long term to produce enough seed to meet farmers’ needs,” adds Wilfred Mwangi, leader of the DTMA Project.



Marketing seed is costly. “Most companies rely on third-party agents such as agro-dealers, large retail stores, NGOs, or the government to retail most of their seed,” says Langyintuo. “The majority of the agro-dealers lack funds to purchase seed, and so must take it on consignment, forcing companies to retrieve unsold seed at cost. The dealers are normally not knowledgeable enough about the seed they sell to promote it effectively, and some of them have also been known to adulterate seed with mere grain.”

Other hurdles identified include cumbersome varietal release, registration and seed certification regulations, a weak seed producer base, slow access to the best germplasm, uncompetitive prices in local grain markets, low adoption rates of improved varieties, restrictions on cross-border trade in seed, and poor infrastructure.

New policies to meet the need for seed

To get farmers the seed they want will involve a range of players in the maize seed sector and targeted policy action. “The Kenyan government is supporting the maize seed sector through initiatives such as increasing investments in agricultural research and extension, training of agro-dealers, and developing the National Seed Industry Policy,” confirms Kenya’s Assistant Minister of Agriculture, Japheth Mbiuki.

“Seed companies would benefit from access to a wider range of improved maize varieties, good seed production sites, affordable inputs, and training in effective business practices,” adds Langyintuo.

CIMMYT normally distributes its seed freely to everyone, but granting companies some degree of exclusivity in the use of CIMMYT germplasm could facilitate branding and promote sales.

Maize seed without borders

No country is an island, and with increasing regional integration of economies around the world, it makes sense that the region should move as one in developing its maize seed sector. Regional trade blocs such as the Common Market for Eastern and Southern Africa (COMESA) are key. “Specific actions and commitments by national governments include dedicating increased funds (at least 10% of their national budgets) for agricultural development and harmonization of regional seed regulations,” says Ambassador Nagla El-Hussainy, COMESA Assistant Secretary General. “This will improve rates of variety release, lower costs in dealing with regulatory authorities, increase trade in seed of improved varieties and, ultimately, adoption by farmers.” In East Africa, for instance, the national seed policies of Kenya, Uganda

and Tanzania are at various stages of development and are set to be harmonized soon.

According to Marianne Bänziger, CIMMYT global maize program director, “There’s a crucial need for effective trade and risk management strategies that buffer seed supplies within countries, to stabilize and increase maize production in the region. These will mitigate the impact of drought and national production fluctuations—among the harshest realities faced by farmers and consumers.”

“Where applicable, carrying out the distinctness, uniformity and stability (DUS) tests alongside national performance trials could speed up the release of varieties,” adds Langyintuo. “We also need to raise farmers’ awareness of the availability and usefulness of new varieties through improved extension message delivery, widespread demonstrations, and better retail networks.”

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CIMMYT socioeconomist Augustine Langyintuo (right) discusses seed policy and other issues with colleagues from sub-Saharan Africa.

Farmers as seed producers

Several CIMMYT projects are getting local farmers involved in making seed of improved maize varieties available to their counterparts in neighboring areas and countries. Through collaboration with seed companies, these projects are empowering local farm communities to produce certified seed through collaborative, rigorous, and closely monitored processes using CIMMYT germplasm. They include the Africa Maize Stress Project (AMS), funded by the Federal Ministry for Economic Cooperation and Development in Germany; the Drought Tolerant Maize for Africa Project (DTMA), funded by the Bill & Melinda Gates Foundation and the Howard G. Buffett Foundation; the New Seed Initiative for Maize in Southern Africa (NSIMA) Project, funded by the Swiss Agency for Development and Cooperation (SDC); and the Quality Protein Maize Development for The Horn and East Africa Project (QPM-D,) funded by the Canadian International Development Agency (CIDA).

On part of his two-hectare farm in Muisuni village in Kenya's Kibwezi District, Josphat Kioko Matia has been producing seed of improved, drought tolerant maize varieties for the past year. Providing technical support to Matia and other farmers in this scheme is George Muthama, an experienced maize breeder with Freshco Seed Company—an enterprise working with CIMMYT and the Kenya Agricultural Research Institute (KARI), on whose farm the varieties shared with Matia and others are developed.

Matia and Muthama are not alone in this. Their production model is being replicated with slight variations and with considerable success elsewhere in the region. Through the NSIMA Project, farm communities in the Democratic Republic of Congo (DRC), Swaziland, and South Africa are taking seed to the doorsteps of other farmers who need it.

Seed at their doorstep

In the Lowveld of Swaziland, a group of about 30 farmers in the Lesibovu area have turned themselves into commercial seed producers and formed the Lesibovu Community Company. The farmers are working closely with the Department of Agricultural Research and Seed Services to ensure that quality seed is produced. On just 4.5 hectares, the group was able to produce about 5 tons of government-certified, drought tolerant maize seed in their first season. Of these, two tons were processed, packaged, and sold to World Vision-Swaziland, which in turn supplied it to drought-stricken farmers as part of relief efforts. The rest will be processed and sold to farmers within Lesibovu and neighboring communities almost at their doorsteps. As for the coming season, the company plans to increase production and scale out to other members of the community who have realized that seed production is profitable.



Kenyan farmer/seed producer Josphat Kioko Matia (left) with maize breeder George Muthama from Freshco Seed Company.

"This model seems to be working well and the farmers are excited to have become commercial seed producers at last. We have supported them through training in seed production: open pollinated varieties, isolation distances, cleaning seed, and community-based seed production," says CIMMYT maize breeder, Peter Setimela.

In Kenya, production of quality seed is entirely in farmers' hands, while commercial seed companies like Freshco handle processing, packaging, quality assurance, and marketing.

In both Kenya and Swaziland, officers from government seed regulatory authorities frequently inspect fields and crops during all the growth stages to advise and ascertain seed quality. Once they are satisfied, they certify the maize seed and the farmers can go ahead with shelling, cleaning, and marketing.

What motivates Matia?

"Seed business is a good business; I make twice as much selling a kilogram of seed as I would grain, Matia says with a broad smile. "It also makes me happy to see a variety I have helped develop on the market!" The seed he helps develop is sold by Freshco to farmers in distant rural areas.

"We're encouraged by this interest from community-based seed producers who are investing their own resources in maize seed multiplication," says John MacRobert, who coordinates the NSIMA Project. "Enabling them to create commercial seed enterprises or linking them to emerging seed businesses will increase the availability of improved varieties to farmers. This is much needed, given that only about 30% of all maize seed in Africa comes from certified production and capable seed producers are rare."