



Invigorating Seed Systems in Africa



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Improved seed reduces hunger and poverty

More than a quarter-century of CGIAR research demonstrates that improved seed is a powerful means for promoting sustainable development. It reduces hunger and increases prosperity for the majority of rural poor, who engage in farming. It also reduces food costs for impoverished urban dwellers.

In the drylands where ICRISAT focuses, for example, rosette virus-resistant groundnuts (peanuts) and fungal wilt-resistant pigeonpeas have made the difference between bounty and desperation for thousands of farmers, and are making more nutritious food available to consumers. Improved grain quality in the new varieties to suit the demands of high-value urban and export markets is delivering additional income gains that these poor urgently need.

In addition, early-maturing, high-yielding sorghums and millets deliver large yield gains as soil fertility improves (an issue I raised in the previous issue of 'What ICRISAT Thinks'). Improved varieties derived from breeding research by ICRISAT and its partners are now grown on about one million hectares of Africa's drylands.

Looking to the future, another 25% yield gain is expected from 'hybrid' varieties of sorghum, millet and pigeonpea that now are in advanced stages of development. Hybrids are also better able to withstand drought and other stresses.

Delivering on the promise

Sadly, though many dryland farmers are yet to benefit from these exciting gains, simply because improved seed is not reaching them. Seed markets within individual African countries are too small to support Western-model commercial seed industries, while outdated seed laws constrain the cross-border seed trade that could enlarge those markets.



A happy farmer in Western Kenya growing a crop of rosette virus-resistant groundnut

Furthermore, centralized seed distribution, whether by governments or the private sector, is costly because small-scale dryland farmers are dispersed across vast areas, requiring millions of tiny sales transactions. Faced with these drawbacks, many multinational seed companies have simply stayed away from these areas and crops, and many government seed agencies have faltered.

If it is not profitable to sell to smallholders, what about free seed giveaways? This has often been tried following natural disasters and conflicts. But too often this seed was not carefully tested and therefore put farmers at risk of crop loss or failure. Seed giveaways also undermine local and indigenous seed enterprises, and thus are not a sustainable solution.

What can be done?

On the policy front, we are contributing to discussions to harmonize regional seed regulations. These discussions benefit from research showing that a good international varietal testing system can help identify multi-country agro-ecosystems where a new improved variety will perform well.

We are also helping countries solve the over-centralization problem. For example, Mozambique, with ICRISAT advice, has changed its approach to concentrate on creating initial seed of the new varieties, while devolving the mass distribution of those varieties to other agencies, such as farmer-entrepreneurs, small-scale seed companies and non-governmental organizations



A commercial seed salesman explains the advantages of improved seed in rural Mozambique

(NGOs). Revenues from government seed sales and services will cover their costs. After just two seasons this new government unit is marketing rice, sorghum, maize, millet, cowpea, groundnut and pigeonpea seed. This approach encourages and builds on the strengths of existing local seed systems and communities, rather than bypassing them.



Women farmers use vouchers to buy small seed packs in Mozambique

To help counter the problem of free seed giveaways following disasters and conflicts, Catholic Relief Services, an ICRISAT partner, has devised a 'voucher' system. Investors provide farmers with vouchers they can use to buy seed from local or commercial seed sellers at 'seed fairs' organized by

NGOs. The seed sellers redeem the vouchers for cash from the aid agency, reinforcing local seed systems. Influenced by these findings, the European Union has decided to refrain from seed giveaways in future crisis aid situations in eastern/southern Africa.

A major opportunity lies in helping farmers tie into growing urban and export markets. An innovative effort of the National Smallholder Farmers' Association of Malawi (NASFAM) unites 100,000 small-scale producers in one of the poorest countries in the world. NASFAM has established a financially self-sustaining quality seed production program serving its members. The first shipment of high-quality groundnuts was accepted by UK and South African buyers over the past year. ICRISAT research has been pivotal in helping control the risk of aflatoxin in these groundnut shipments, a toxic contaminant that is unacceptable in even minute quantities for export. This success has led to repeat orders from the overseas buyers, triggering increased demand from NASFAM farmers for improved seed.

Yet another avenue for getting improved seed to smallholders relates to the hybrid variety breeding programs I mentioned before. The extra yield delivered by hybrids more than pays for the additional seed cost. The annual repeat-business model enabled by the hybrid approach will attract the larger commercial seed companies who have the skills and resources to carry out the exacting process of hybrid seed production.

These successes are opening new doors for us and our partners. We are coordinating a new regional effort called Sustainable Commercialization of Seeds in Africa (SCOSA) with support from USAID and other investors. We cordially invite you to join this exciting effort to reduce hunger and poverty through innovation in seed delivery systems for Africa. Please email me for more information. Together, we can help millions help themselves.



About ICRISAT

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 600 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Future Harvest Centers of the Consultative Group on International Agricultural Research (CGIAR).

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