Changing the lives of smallholder farmers – a personal journey

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My personal viewpoint has evolved from my experience of working for 20 years, most of them with Farm Input Promotions Africa Ltd (FIPS-Africa), to assist smallholder farmers in East Africa to become food secure. My journey has taken me to remote and diverse parts of the region to work with and learn from numerous farmers.

I have been privileged to work with the support of donors and innovative and dynamic colleagues who have helped design our methodology. There has been no text book to guide us: we have learnt from careful observation, innovation and chance findings. In this essay, I recall some key events that helped to shape our methodology, which is now being implemented at scale to improve the livelihoods of hundreds of thousands of

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The challenge of changing the lives of smallholder farmers is immense. A typical farmer does not produce enough food, and her family goes hungry for up to six months per year. She cultivates by hand small plots of land ranging in size from 0.1 to 2 hectares. She grows a wide range of crops, including maize, sorghum, millet, rice, beans, cowpea, potato, banana, cassava and sweet potato, but typically plants low-yielding and late-maturing varieties, which are also susceptible to disease. Her soils have become infertile, she does not have enough manure to improve soil fertility, and she does not use inorganic fertiliser. Rainfall is becoming increasingly poorly distributed, and her crops often dry up before maturity. She complains that she is rarely visited by an extension officer, and does not know how to plant her seeds and use fertiliser the right way. She is risk averse, so only wants to try new varieties on small areas.

Improved varieties

To increase crop productivity, farmers need to use improved crop varieties and manage them well. Improved varieties of farmers' most important crops – including maize (hybrid), sorghum, millet, beans, cowpeas, greengrams, potato, cassava and sweet potato – have been bred for tolerance to disease and drought, and for early maturity and high yields. However, they are not locally accessible. A farmer has to travel a long distance at great expense to buy them, only to find that they are packed in large, unaffordable bag sizes.

To increase farmer adoption, we needed an innovative way of offering farmers a choice of farm inputs, that disseminated them equitably, and that taught farmers how to use resources in the best ways. This service also had to be self-sustaining to ensure that farmers continue to access the inputs and advice they need to become food secure with little or no external funding.

A self-sustaining advisory service

The Ministries of Agriculture in African nations that are short of extension workers and resources for offering advice need a complementary self-sustaining advisory service.

In Kenya, we used to employ staff to advise farmers but they would leave us at the end of a project. One of our ex-employees, however, established a business to sell the seed for which she had created demand. She found that self-employment was more profitable than employment. As a consequence, we developed the self-employed village-based advisor (VBA) concept.

VBAs are hard-working, selfless farmers who are trusted by other farmers in their villages. We teach them good agricultural practice, how to reach all the farmers in their villages, and how to make money from input supply and related services.

Using this concept, an employee now supervises up to 50 VBAs, each of whom disseminates inputs to between 200 and 500 farmers. Most importantly, hard-working VBAs are able to generate enough income to continue their activities when donor funding comes to an end.

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Offering farmers a choice

Initially, our donors – the United States Agency for International Development (USAID), the Rockefeller Foundation and the UK Department for International Development (DfID) – requested us to promote improved disease-tolerant maize varieties from emerging seed companies and improved fertiliser blends.

In 2006, in response to their demands, we also distributed improved varieties of sweet potato to farmers in several villages in western Kenya. After two years, we were surprised to find that about 30 per cent and 100 per cent of the farmers had adopted the maize and sweet potato varieties, respectively. Farmers told us that maize was difficult to grow: it required expensive seed and fertiliser, and was sensitive to drought and the striga weed. In contrast, sweet potato varieties such as Mugande, SPK004, and SPK013 from KARI-Kakamega, were early-maturing, and yielded well without fertiliser. Farmers needed only the planting materials, which were easy to multiply and conserve in their own environment.

Another example of offering farmers a choice arose in 2009. Having observed high mortality among indigenous chickens due to Newcastle disease (ND), we started to offer a vaccination service. A simple drop of a thermostable vaccine, costing only a few cents, in a valuable chicken's eye, provides immunity for four months. Following vaccination, the women who owned the chickens reported a large and rapid increase in bird numbers. Chickens and eggs improve the nutrition of families, and are also sold to pay for school fees, essential household supplies, and even seeds and fertilisers. Most importantly, even the poorest women benefit from this activity.

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VBAs now simultaneously offer farmers a chicken vaccination service and improved varieties of their most important cereal, legume, root or tuber, vegetable, banana and fruit-tree crops. The promotion of this diversity not only increases the likelihood of farmers meeting their dietary requirements from their own farms, but also enables VBAs to generate income from their activities throughout the year. Furthermore, the simultaneous dissemination of a wide range of technologies by VBAs has the potential to reduce the cost of development work significantly and brings into question the need for a large number of projects working on a single-commodity value chain.

The small pack

In 1996, I discovered by chance that resource-poor farmers in Siaya County, in Kenya, who had never before used fertiliser, wanted to purchase it in small 100-gram packs costing only US$ 0.1. Thousands of farmers purchased the small packs, experienced the benefits on their farms in an affordable way, and then asked for larger quantities (1–10 kilos) to improve food security. This work catalysed the opening of Agrovet shops in almost every market centre in the county to supply farmers with fertiliser and seeds.

A small pack is now used by VBAs to disseminate improved varieties of farmers' most important food crops. All farmers, whether they are male or female, wealthy or poor, are able to experiment with 25–100 grams of seed, or 30 cuttings or vines of cassava or sweet potato of a new variety with little risk.

For the hybrid maize, farmers who have succeeded with their small pack request their VBAs to sell them the seed in larger quantities. For self-pollinated crops

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such as sorghum and cowpeas, and for vegetatively propagated crops – cassava, sweet potato and potato – farmers who select the best seed can rapidly multiply their seed to plant over larger areas.

Private-sector seed and fertiliser companies are now using the small pack to promote and sell their products, enabling many more farmers to benefit.

The small-pack approach contrasts with the "lead-farmer" demonstration approach conventionally used by most development agencies, which often causes jealousy amongst neighbouring farmers. The few lead farmers who adopt the new products may lose much of their crop to theft. The 10 kilos of seed typically granted to a lead farmer can have more impact when it is shared in an equitable way between 200 farmers in 50-gram packs.

Teaching farmers appropriately

Inputs in small packs have little effect if used incorrectly. Many farmers in Kenya conventionally place two to five seeds in a hole and, if fertiliser is used, place it directly on top of the seed. This results in low productivity. In 2005, we developed a planting string to assist VBAs teach farmers how to plant maize. It consists of a piece of string 75 centimetres long (to measure the distance between rows), four bottle tops clamped to the string at 25-centimetre intervals (to indicate where just one seed should be placed within the row), and a small card (to measure the distance between the fertiliser and the seed). It can be rigged up in a couple of minutes and costs a few cents. This simple and inexpensive tool has helped thousands of farmers to increase their maize crop productivity up to fivefold through better seed spacing and fertiliser placement.[1]

An impact assessment has shown that our methodology can take all the farmers in a village from food deficit to surplus within two years.[2] To date, we have created opportunities for 2,000 VBAs who are assisting about 500,000 farmers to become food secure. This is a start; there is much more to do. We estimate that we need 40,000 VBAs to reach all farmers in Kenya and Tanzania. At little cost, governments, non-governmental organizations and private companies can identify and build the capacity of VBAs to disseminate seeds of improved varieties for a wide range of crops in small packs, and advise all smallholder farmers the best way to use them to help them quickly and sustainably become food secure.

References

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