

10 Uganda: Dreams of Starting a Company

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10.1 Introduction

10.1.1 Agriculture

Landlocked and with 16 million hectares of cultivable land (of which only a third is farmed), agriculture is the key activity for Uganda's 28 million people, contributing 43% of the country's gross domestic product and almost half of its export earnings. Coffee, cotton, tea, sugarcane and tobacco are the main cash crops. Agricultural output (cash and food crops) grew at 2.4% in 2008. But, with an annual population growth of 3.4% per year, Uganda will have twice as many mouths to feed by 2035.

More than two-thirds of the country is a plateau, between 1000 and 2500 metres above sea level. Most of Uganda receives 1200 mm of rain spread over two seasons and produces two crops per year. These favourable conditions have turned Uganda into the food basket of the region and both crops and seeds are exported to neighbouring countries. The two rainy seasons also create challenges for the seed industry.

When crops sown in March, at the beginning of the first rainy season, are harvested around June–July, farmers are already searching for seed for the second growing season, which starts in July–September. As companies are still busy harvesting and processing, this creates a general and recurring feeling of seed shortage.



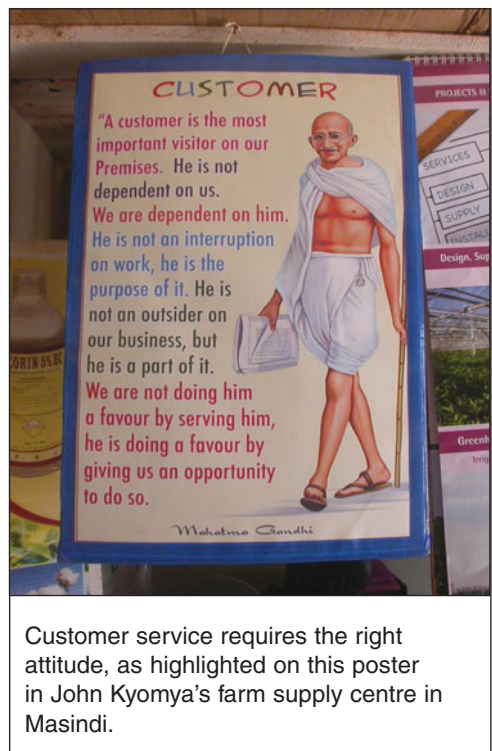
When peace and stability returned to the north of Uganda in 2008, many farmers started opening up land to grow maize, beans and upland rice (only introduced in the country in early 2000). The demand for seed of these crops further increased in the south as substitution for bananas (devastated by a rapidly spreading bacterial wilt disease) and for cassava (decimated by cassava mosaic and brown streak viruses). Hospitals and boarding schools reopened, serving mainly maize and rice dishes. Other major food crops are sweet potato, cowpea, groundnut, sorghum, finger millet and potato.

10.1.2 Seed systems in Uganda

The informal sector includes NGOs, farmers' groups and family farms. There is little or no government regulation. The informal sector supplies an estimated 95% of the seed of open-pollinated food crops and practically all the planting material of vegetatively propagated crops like banana, cassava, potato and sweet potato.

The formal sector is fully regulated. The National Agricultural Research Organization (NARO) coordinates variety development of all crops, except sugarcane, tea, tobacco, flowers and most vegetables. Although responsible for producing breeder and foundation seed, it cannot do it all so it supervises companies and farmers' associations to produce foundation seed, which is then passed on to outgrowers or to other seed companies to produce certified seed, supervised by the National Seed Certification Service. Some quality seed is not grown from foundation seed, has not been officially inspected or does not fully meet the certification standards. This seed is then labelled and sold as standard seed. Some seed, such as the current sunflower hybrids, that has been tested and approved by the National Variety Release Committee is imported directly by the private sector. Commercial oil palm seedlings are also imported directly.

Seventeen national seed companies and one multinational (Monsanto) operate in the country, the latter producing about 400 tonnes of DK 8031 hybrid maize seed in Uganda in 2009. Two international companies supply seed to Uganda: Seed Co. imports hybrid maize seed from Zambia, whereas Pannar imported about 30 tonnes of hybrid maize and sunflower seed from South Africa (2009). Seed companies sell to about 50 distributors, who sell to about 2000 agro-dealers (called stockists in East Africa), who sell seed, fertilizers, agrochemicals and farm implements in rural areas.



About half of the seed companies, distributors and agro-dealers belong to the Uganda National Agro-input Dealers Association (UNADA), which provides training, market promotion and linkages. Since 2009 credit guarantee funds have allowed agro-dealers to buy enough seed. They pay 50% to the supplier and UNADA guarantees that the remaining 50% will be paid within 2 months, by which time most of the seed will have been sold to farmers.

According to the industry, farmers have become more aware of the benefits of certified seed over the past decade. When seed is accessible, Ugandan farmers are eager to try out new varieties, although until now the industry is disappointed at farmers' reluctance to buy hybrid maize (sold at about \$1.60 per kg, twice the price of OPV seed). All certified seed is coated and for many farmers the coloured dressing has become a synonym for quality. This has inspired crooks to sell fake seed and has created some mistrust in commercial seed. One of the biggest challenges of the seed industry is to protect its market from fraudulent seed suppliers.

10.1.3 Evolution of the seed industry in Uganda

Before 1968 the seed sector was predominantly informal. In 1970 the government started a scheme to maintain improved varieties of all crops (except vegetatively propagated ones). It later became the Uganda Seed Project. By 1999 the responsibility for producing, processing and marketing seed was felt to be too great for a government department, so the project was transformed into a public liability company, Uganda Seeds Limited. It was privatized in 2004 and sold to FICA (Farm Inputs Care Centre) Seeds Ltd in late 2007.

The Idi Amin regime (1971–79) sparked political and civil upheavals, which damaged the seed industry's infrastructure and human capacity, and reduced the availability of improved seed to farmers. During this period, informal seed was vital. Following liberalization in 1994, private seed companies emerged and in 1999 assembled under the Uganda Seed Trade Association (USTA) to oversee the development of the industry (IFDC, 2008).

Registered companies may import and sell vegetable seed. For other crops they rely on outgrowers, often organized into associations of 100–500 members to facilitate access to credit, inputs, training, setting seed prices and marketing. Certified seed amounted to about 10,000 tonnes in 2009 (Table 10.1), accounting for about 4.5% of the seed used. Certified millet, sorghum, bean and groundnut seed dropped after 2005 when the relief market dried up.

Dealers say that there is still a large unmet demand for maize, rice and beans and seed enterprises are working round the clock to meet farmers' demand. According to Larson and Mbowa (2004), the market potential of maize alone is about 20,000 tonnes, since an estimated 8% of the area under maize is planted to hybrids and another 12% to improved OPVs. Others think hybrid maize accounts for only 1–2% of the planted area and improved OPVs for about 8%. Most farmers recycle their OPVs for too long so a lot of degeneration is evident in the field (Clive Drew, personal communication).

Many companies and seed producer groups are becoming mechanized. As Nelson Ojwiya from China HuangPai Food Machines says: 'The seed processing mentality has changed because now people start to appreciate the added value of clean seed.'

Table 10.1. Seed certified (tonnes) in Uganda, 2004–2009. Source: National Seed Certification Service.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------|-------|-------|-------|-------|-------|--------|
| <i>OPV Maize</i> | 5,300 | 3,896 | 4,280 | 4,050 | 5,635 | 6,952 |
| <i>Hybrid maize</i> | 1,032 | 1,552 | 965 | 777 | 304 | 1,410 |
| <i>Rice</i> | 330 | 564 | 708 | 256 | 1,103 | 1,286 |
| <i>Bean</i> | 1,260 | 634 | 272 | 50 | 119 | 440 |
| <i>Sorghum</i> | 355 | 1,280 | 320 | 40 | – | 134 |
| <i>Millet</i> | 300 | 414 | 22 | 16 | – | – |
| <i>Soybean</i> | 30 | 100 | 158 | 45 | 40 | 54 |
| <i>Groundnut</i> | 260 | 135 | 120 | 15 | 25 | 8 |
| <i>Sesame</i> | 30 | – | 30 | – | – | 115 |
| <i>Sunflower</i> | – | 100 | 226 | – | 2 | – |
| <i>Total</i> | 8,897 | 8,675 | 7,101 | 5,387 | 7,679 | 10,397 |

Last year we installed a complete system (cleaning, treating, grading and packing) to the Bakusekamajji Women Farmers' Development Association and sold seed processing equipment to various other enterprises.⁷ The director of the Chinese company has negotiated agreements with all major commercial banks to offer favourable loans to its clients. Some Nigerian seed companies are also using inexpensive, functional Chinese equipment (Chapter 4).

10.1.4 Seed legislation in Uganda

The Seed and Plant Act of 2006 stipulates the promotion, regulation and control of plant breeding and variety release, multiplication, conditioning, marketing, export/import and quality assurance of seeds.

The seed law encourages the private sector in research and breeding. As long as no rules exist for intellectual property rights and plant breeders' rights, breeders and companies are reluctant to invest in variety development (Danielsen, 2004). This may change in the near future since a Plant Variety Protection Bill is now before Parliament. The Seed and Plant Act also covers vegetatively propagated crops, but private seed companies have no interest in them, citing low profit margins. Apart from one private commercial tissue culture facility (AGTL), multiplication of such crops is currently being done by research institutes, NGOs, farmers' groups and individual farmers.

The Seed and Plant Act supported the creation of: (i) the National Seed Board, which advises the government on the performance of the seed industry; (ii) the

National Variety Release Committee; and (iii) the National Seed Certification Service (NSCS). With little government support and despite efforts from donors to enhance public–private collaboration in several of these bodies, many people perceive these institutions to be slow and poorly equipped to do the job. The Danish International Development Agency (DANIDA) strengthened the National Seed Certification Service, and labelling of certified seed became standard practice, which slashed the number of complaints about fake seed. In 2009, DANIDA also supported the company Chemiphar in gaining ISTA accreditation as a private seed testing laboratory.

Although field inspection of seed crops is based on OECD standards and Chemiphar is ISTA accredited, exporting seed to Kenya will still not be possible as long as KEPHIS (the Kenyan certification authority) has not carried out the field inspections.

10.1.5 The broader context shaping the national seed sector

Shortage of certified seed is compounded by the volatile demand from NGOs and relief agencies, who buy large stocks of seed from companies to distribute to conflict areas and to neighbouring countries like Rwanda, Democratic Republic of Congo and Sudan. This is unlikely to change in the near future as ‘overall, the balance of (aid) assistance has shifted away from long-term development to emergency assistance’ (Lele, 2009).

Soaring food prices during the 2008 food crisis stimulated farmers to buy certified seed. The increased demand resulted in more requests to register as a seed company.

Apart from higher grain prices, regional market integration has also benefited the seed sector. The East African Community (EAC), for instance, maintains an import tariff of 75% on rice. Rwanda and Burundi joined in 2006, further discouraging imports of Asian rice in the region. The tariff stimulated local rice production and had the unintended effect of boosting demand for rice seed.

In Uganda, the number of commercial bank branches drastically reduced from 1970 to 2000, with various micro-finance institutions and self-help saving and credit associations trying to fill the gap in rural areas from the early 1990s onwards (Mpuga, 2004). The Centenary Rural Development Bank is one of the few commercial banks that has been spearheading the development of farmer-friendly products and services (Seibel, 2003), although others are following suit.

To improve agricultural performance, efforts to strengthen rural financial services initially focused on subsidizing credit and imposing low



SACCOs can help seed producers with their cash flow, but low-interest investment funds or bridge funds may be as important.

interest rate ceilings, but this led to dependency, poor payback, increased debt and reduced creditworthiness of the micro-finance institutions. More recently, donors have created investment funds for agrobusinesses. Uganda and Mali stand out as having successfully established effective joint donor and multi-stakeholder financial coordination systems in Africa (AMAF and WWB, 2008). Seed companies prefer such sector-wide efforts and consider donor support to individual companies as distorting. Some farmer seed-producer groups began to explore how SACCOs (saving and credit cooperatives) can support them.

The following case studies describe Uganda's first private seed company, a women's association that became a respected maize and rice seed supplier and dreams of becoming a company itself, and a farmers' group now supplying thousands of farmers in their area with quality bean seeds.

10.2 Nalweyo Seed Company (NASECO)

10.2.1 History

Apart from an abandoned cotton ginnery, Nalweyo village, 40 km south of Hoima in western Uganda, had no real infrastructure. Local people survived on tubers and bananas in cleared forest areas, grew tobacco for a company and lived in dire poverty. With support from the Belgian Survival Funds, the non-governmental organization ACT (now called TRIAS) launched a project in the mid-1990s on land owned by the Hoima Catholic Diocese. The project obtained banana suckers, cassava cuttings and seed of cereals and pulses from NARO, multiplied them and supplied farmers with free material. In 1996, 2 years after the new seed law opened the door to private investments, the project established the Nalweyo Seed Company (NASECO).

Later on, Nicolai Rodeyns, a Belgian agronomist, joined the Diocese as co-owner of NASECO, the first Ugandan private seed company.

The beginning was not easy; it was the first time in Uganda that someone was competing with the government seed company. NASECO had limited facilities and lacked market intelligence. And NARO had never worked with the private sector before. With little experience in growing seed, NASECO had to learn the tricks of the trade as it went along. Seeing more future in cereals and pulses, which were easier to handle and market, by 2004 NASECO had phased out vegetatively propagated crops.

NASECO decided to grow foundation seed to supply emerging seed companies, which kept the quantities small and manageable. But NASECO could not survive on selling just foundation seed to a few new seed companies. When in 2001 the three (at the time only) enterprises (FICA, Harvest Farm Seed and NASECO) received a grant from a USAID-funded project, NASECO decided to invest \$60,000 in key farming and processing equipment to start producing certified seed.

In 2003, NASECO tested two cowpea varieties from the International Institute of Tropical Agriculture (IITA). Multiplying the seed proved such a challenge that even now the company cannot supply the requested amounts (Box 10.1).

The first experience with hybrid seed production was not easy either. When growing hybrid seed for a South African company, NASECO contracted out the processing, but, in his rush to finish the job, the contractor dried the seed at 60°

instead of 40° and killed the whole batch. NASECO decided to speed up investments in drying facilities at its own plant.

‘Real disasters occur when seeds germinate in the bags. One time the pressure to deliver large amounts of seed quickly was so high that we failed to dry the seeds sufficiently. We almost had to close down our business. That was another major lesson. You should never promise what you cannot deliver without compromising quality,’ recalls Nicolai.

In 2004, Monsanto contracted NASECO to grow hybrid maize seed. Through the technical advice it received, NASECO mastered professional hybrid seed production.

In 2009, it produced over 2500 tonnes of certified seed of maize (50%) and rice (20%), along with standard seed of beans (10%) and various other crops (Table 10.2). NASECO has about 30 varieties of ten crops and four hybrid maize varieties. Its flagship varieties are Longe 5 maize, Nerica 4 rice and K132 beans. Some seed, like sorghum, millet and groundnut, is sold as standard seed.

Its current strategy is to target the retail market, invest in collaborative research, establish an attractive and diverse product portfolio and raise hybrid maize production.

Although initially NASECO mainly produced foundation seed and then moved into certified seed production, under an arrangement initiated by the Ugandan Seed Trade Association private companies started producing foundation seed again. In 2009 NASECO sold 10 tonnes of foundation seed of maize (Longe 5) and 5 tonnes of upland rice (Nerica 4), mostly to younger seed companies and independent growers. The company is expanding its foundation seed portfolio including beans, sorghum and soybeans.

10.2.2 Structure

Management. NASECO’s vision is to work with and for farmers, building relationships and respecting deals. Profits are reinvested in fundamental needs of the company rather than in expensive cars and air-conditioned offices.

Box 10.1 The challenge of cowpea seed.

Farmers know what they want, but this is not always easy for seed companies.

‘The old cowpea varieties Secow 1 and Secow 2 were prone to insect attack and farmers sprayed them up to seven times. As they mainly grew cowpea for the leaves, the insecticides were poisoning people’s food so we persuaded the National Variety Release Committee to release the new varieties CP Kunde and CP White. They yielded 500kg more than the old varieties. And, apart from the leaves, the beans were also better appreciated. They needed only 40 minutes to cook instead of 3 hours,’ recalls Robert Anyang, at the time working with NASECO.

‘But one of our outgrowers ate the leaves, liked it so much and told the entire village. Half of the leaves vanished, and seed production dropped. As if that was not enough, some also ate the fresh pods and tried out the beans. At the end we were able to collect only one bag instead of eight bags from each grower,’ he says.

According to NASECO’s director, ‘The only option now to produce this cowpea seed seems to be to overproduce the crop in one village so that each member is entirely fed up with cowpeas and will eventually sell the seed back to the company. We know that we will receive only 50% back, but at least we will get 50% rather than nothing.’

Table 10.2. Seed produced (tonnes), NASECO. Source: NASECO.

| | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------------|----------------------|------------|------------|------------|------------|
| <i>Maize OPV</i> | 864 (2) ¹ | 710 (3) | 682 (3) | 793 (2) | 1,360 (2) |
| <i>Maize hybrid</i> | 2 (1) | 267 (2) | 259 (2) | 445 (3) | 208 (3) |
| <i>Bean</i> | 69 (2) | 226 (4) | 490 (5) | 434 (3) | 196 (3) |
| <i>Rice</i> | 458 (2) | 251 (4) | 297 (3) | 497 (3) | 417 (3) |
| <i>Sorghum</i> | 84 (2) | 106 (2) | 22 (2) | 77 (2) | 129 (2) |
| <i>Finger millet</i> | 2 (1) | 1 (1) | 52 (1) | 12 (3) | 86 (1) |
| <i>Soybean</i> | 16 (2) | 17 (2) | 28 (3) | 99 (3) | 4 (1) |
| <i>Groundnut</i> | 141 (4) | 55 (4) | 434 (4) | 244 (4) | 129 (4) |
| <i>Cowpea</i> | 75 (2) | 72 (3) | 63 (3) | 81 (3) | 74 (2) |
| <i>Sesame</i> | – | 54 (1) | 6 (1) | 37 (1) | 1 (1) |
| <i>Sunflower</i> | – | – | 8 (1) | – | 1 (1) |
| <i>Green gram</i> | – | – | 66 (1) | 1 (1) | 23 (1) |
| <i>Total</i> | 1,710 (18) | 1,759 (26) | 2,405 (29) | 2,718 (28) | 2,628 (24) |

¹The number of varieties is given in parentheses.

It believes in setting priorities and achievable targets. Choosing which varieties to produce is based on market intelligence. By producing and testing new lines and varieties on their own farm, NASECO can immediately assess how they behave, their particular needs and how farmers are likely to respond to them. Seed of open-pollinated varieties (OPVs) has been at the core of NASECO's business for the past 15 years and is likely to remain so. It considers OPV seed as a stepping stone from farm-saved seed to hybrid maize seed. The market for OPV seed is huge and NASECO believes that even the growing number of seed companies will not be able to satisfy the demand.

NASECO continues to learn, innovate and network. In 2008–2009, for instance, its director attended a seed business management course organized by CIMMYT (International Maize and Wheat Improvement Center).

Staff. Initially the company had few permanent staff and it was hard to assess the skills and incentives of job seekers. As the company built its own expertise and grew, recruiting staff with the right skills and attitudes became even more important. NASECO currently employs 30 full-time staff and over 200 day workers. Responding to advice from the National Seed Certification Service, they recruited three experienced staff to oversee field and processing activities.

Outgrowers. When the company started producing certified seed rather than just foundation seed, it developed an outgrower scheme. Starting with about 30 growers

in 1999, this evolved to over 300 in 2009. All are smallholders. Foundation seed is produced on the company farm. The growers receive foundation seed, training and a guarantee that NASECO will buy back their seed at premium prices. Recently, NASECO organized the outgrowers into groups of five to 30 members with elected leaders to enforce strict seed procedures and compliance with the signed contract. Issues and targets are discussed at monthly meetings. Having outgrowers in different areas helps to spread risk. Smallholders have their own strategies to invest and cope with risks and can become large farmers if given the opportunity (Box 10.2).

Land. NASECO leases 400 hectares of land from the Hoima Catholic Diocese, its major shareholder, of which 120 hectares are under cultivation, about 7km from the seed factory. Ever since the government improved one of the nearby roads, NASECO has maintained its surface after every rainy season. Having a good road from the farm to the processing plant is worth the investment. It saves time and limits damage to equipment.

Infrastructure. The abandoned cotton ginnery was not really set up to handle seed, but at least the old buildings gave the company a roof over its head. The first seed was manually cleaned with local labour and dried in the sun. Being in a remote location, the NASECO farm and processing plant have no access to the power grid. But the electricity supply is unreliable anyway and being independent of it makes up for the higher cost of generating its own power. About 15 years after its formation, NASECO still upgrades its equipment whenever money is available.

It opened a marketing office in Kampala and another seed processing unit just outside Kampala to handle seed produced by outgrowers far from the main processing plant.

Equipment. Although it started small, using animal traction, NASECO is now better equipped and has increased the area planted, especially for cereal seed. Legume crops are shorter and have to be cut about 10 cm above the ground level, making machine harvesting difficult on uneven fields, so less land is devoted to these crops. In the near future, the company intends to invest in land preparation to expand the area and mechanize the seed production of legume crops.

All processing takes place at the plant: preparing the seed, cleaning, drying, storing, seed conditioning and packaging. NASECO continuously assesses the performance of its equipment and innovates whenever needed. Drying and storing are crucial

Box 10.2 The story of an outgrower.

The only thing Fred B. Magenzi brought with him was his family and his experience in growing maize. When he left his home near the Rwandan border and settled in Mumbali village in 1999, he heard that there was a company that had seed. He walked 8km to NASECO and proposed becoming an outgrower.

He first grew maize seed on rented land and gradually bought his own. In 2002, he planted 0.4 hectare of the recently introduced new rice variety, Nerica 4. In 2005, he planted 2.4 hectares, but during the harvest a hail storm destroyed everything. The 1.2 hectare he planted the next year was destroyed by drought and he and his neighbours lost confidence in growing rice seed.

All along he has continued to grow maize seed. He now owns 48 hectares of land, 8 of which he has planted with eucalyptus trees. All his children go to school; he has a house with an iron roof, 19 cows and 24 sheep. Having learned from his skills, some of his neighbours have also become outgrowers for NASECO.

in a country with two rainy seasons. NASECO soon replaced solar drying with a flatbed dryer, but it dried unevenly so NASECO changed to a batch dryer. Later on, two recirculating dryers were added, each with a capacity to process 15 tonnes of seed within 8 to 10 hours.

NASECO built its dryers to be fuelled by maize cobs. Nicolai is a hands-on man, not the type who manages his company from behind a desk. He is convinced that part of the reason for the success of his company is its paced growth and that it has resisted the temptation to buy expensive equipment with risky bank loans.

Now that it has solved the problems of drying and storing, NASECO intends to invest part of its profits in a fully automated packing line before the end of 2010. This is crucial to guarantee quality and avoid fraud, both key to maintaining customer trust.



Batch dryers in NASECO's seed processing unit.



Recirculating dryer fuelled by shelled maize cobs.

Quality control. NASECO and the seed certifying agents train outgrowers to ensure quality production. The agents also inspect the fields at least twice for OPVs. NASECO conducts basic seed tests (germination and moisture content), but can also submit samples to the National Seed Certification Service before buying seed from outgrowers in case of doubt. The certification agents take samples before issuing official labels.

10.2.3 Cash flow

NASECO learned that growth has to be paced: walk before you run. The company relied as little as possible on bank loans. Many new seed companies want to do too many things at once and often can't manage it, resort to bank loans, make serious mistakes and go broke.

NASECO does not fear competition, even though it competes on an uneven playing field (e.g. some companies receive large donor grants). Its confidence is based on sound business management, experience, unmet national and regional demands and its continued innovation with new seed technologies. A key challenge is managing its cash flow. Fortunately, Uganda's double cropping seasons

reduce cash flow needs. While NASECO has built up relations with many distributors and agro-dealers, it is important to know who is creditworthy and who is not. One has to constantly monitor cash flow by balancing suppliers' needs and customers' credits.

Apart from seed, NASECO does not provide any other inputs on credit to its outgrowers. It pays them a premium price of 50% above the grain market price at harvest time, rather than holding back payment until the seed is sold. This farmer-friendly approach has created a lot of goodwill and neighbours of outgrowers have also become interested.

Many seed enterprises, NGOs and development agencies believe that seed has to be cheap to be affordable to farmers. NASECO believes that affordability is not just a matter of price, but also includes proximity, quality and quantity. Offering quality seed in smaller quantities may indeed make it more affordable and has become a key investment priority for the company since 2010.

10.2.4 Marketing

While most seed companies in Uganda target NGOs, right from the start NASECO has worked with and for farmers. In 2009, about 10% of NASECO's production was sold to the government, 30% to NGOs and 60% to the retail market (most of which is then sold to farmers) (Table 10.3). 'The easy thing about selling to NGOs is that they often place larger orders at a time and that they pay within a month or so. But they also frequently change interventions, and chances are high that they will renounce contracts, making planning difficult. Most of them also look more at the price rather

than at quality. When there is a tender, some companies buy up grain, clean it and offer it cheaply, so there is no way you can compete with them if you take quality seriously. Therefore we want to focus more on the retail market,' says Nicolai.

The retail market has its own complexities. The peak sales period is at planting time, in March and July. To ensure farmers' access, NASECO tries to have its seed in the shops year-round. At first, NASECO built on the network of agents established by the Uganda Seed Project. For instance, Uganda's largest seed dealer, El-Shaddai, buys seed from all major seed companies and has a network of over 60 agro-dealers across the country (Box 10.3). In 2009 El-Shaddai sold about 500 tonnes of certified seed, of which more than 70% was non-hybrid.

Table 10.3. Clients of NASECO.

| | >1996 | 2000 | 2009 | 2015 (predicted) |
|--|-------|------|------|---------------------|
| <i>Agro-dealers</i> | 3 | 1 | 1 | 3 |
| <i>Distributors</i> | 1 | 3 | 2 | 1 |
| <i>NAADS/Local government</i> | – | – | 3 | 4 |
| <i>Individual farmers</i> | – | 5 | 4 | 7 |
| <i>International relief agencies</i> | – | 2 | 5 | 5 |
| <i>Local relief agencies</i> | – | 4 | 6 | 6 |
| <i>Commercial farmers > 100 acres</i> | – | – | 7 | 2 |
| <i>Companies</i> | 2 | 6 | 8 | 8 |

Ranking assessment by senior management of seed enterprise, 1 being the most important.

Box 10.3 El-Shaddai International, Uganda's largest seed distributor.

Having been in the business for about 15 years, Patrick Makwetta, owner of El-Shaddai, has seen many changes in the seed sector. 'Demand is increasing every year. Many new seed companies are too ambitious and try to look for funds. As many of them may deliver substandard products this may lead to total confusion,' says Patrick. 'It would be better if they would focus on a few varieties only, at least in the beginning.'

Asked what donors could do to support the sector, he says: 'Seed dealers are hostages of what companies offer, so companies should be supported in doing R&D on new varieties and in producing breeder seed. Young enterprises that already have access to land could be supported by investments in infrastructure. Donors could help to provide cheap finance by supporting banks to develop favourable products, but they should never give away free money as this distorts the market.'

John Kyomya has a farm supply centre in Masindi and is a key distributor in western Uganda, supplying local agro-dealers and serving about 3000 farmers, of which at least 600 buy seed every season. He plants all the varieties he sells, including the ones he buys from FICA and NASECO. 'Every new variety we grow for consumption first: test how it behaves, organize demos and then cook the rice or roast the maize and eat it with other farmers. As we need to give advice to our clients, we need to know what we sell and there is no better way than growing it yourself,' John says. In 2009 he sold 11 tonnes of Longe 4, 9 tonnes of Longe 5 (a maize with more proteins) and 9 tonnes of Nerica 4 (an upland rice variety developed by AfricaRice). Half of John's stock went to the National Agricultural Advisory Services (NAADS) and the other half to farmers via agro-dealers. In the past few years many new agro-dealers have joined the fray, or switched tactics. For instance, Nyati Mills in Hoima came up with the idea of establishing an agro-input shop next to their rice mill. They bought certified rice seed from NASECO via John Kyomya. Sales increased from 1.5 tonnes in 2007 to 3.8 tonnes in 2009.

NASECO buys printed bags that contain company and variety information and have a line with rainbow colours, which makes them hard to copy. The bags are transparent so that the clients can see the seed. While hybrids are packed in 2 kg sacks, seed of non-hybrids is packed in 5, 10 or 15 kg bags depending on the request of the agro-dealers. When farmers ask for smaller quantities, seed bags are opened, placing farmers at the mercy of the agro-dealer's honesty. NASECO wants to protect its good reputation by producing smaller packs of 1 kg and even 0.5 kg.



NASECO invests in transparent bags so that the clients can see the seed. The bags have a line with rainbow colours, which makes them hard to copy.

When official quality control is insufficient, innovating with packaging and product development helps protect the company's name and farmers' confidence in certified seed.

Testing new varieties also helps to keep the lead. NASECO does adaptive research in maize, rice, sorghum and sunflower. For instance, the red and white sorghum varieties now grown by farmers were released 15 years ago and Nicolai feels that the time is right for some new varieties.

NASECO offers farmers several good varieties every season. At first, clients came by themselves to look for seed, but, as the business grew, NASECO invested more in marketing, which itself was seen as an ongoing experiment by its director. The focus is not to grab clients of other companies but to create new customers (e.g. by switching from home-saved seed to improved seed) through demonstrations, broader networks, improved availability and affordability.

10.3 Bakusekamajja Women Farmers' Development Association

10.3.1 History

The rolling hills at the source of the Nile in eastern Uganda have attracted foreign investors for a long time. Tea and sugarcane plantations are etched into the landscape. Apart from rice in the lower, often swampy areas, farmers in and around Iganga district grow maize and rice as cash and food crops, along with several other subsistence crops, such as sweet potato and beans.

In 1986, 16 women decided to establish the Bakusekamajja Women Farmers' Development Association to ban hunger from their village near Jinja. With music, dance and drama they sensitized women to join hands, be more active in agriculture and start growing fruit like papaya and passion fruit. The local church frequently hired them to perform, and over the years they became more widely known for their commitment to improving food security.

Eastern Uganda is a region that has been swamped with projects for the past 15 years (30 seasons) demonstrating the benefits of improved seed, and other efforts to strengthen commodity value chains (linkage to output marketing, rural agro-dealers, etc.). Examples of initiatives include the USAID-funded Investment in Developing Export Agriculture (IDEA) and Agricultural Productivity Enhancement Programme (APEP) projects, Title II, SG2000 and NAADS. Most



Women's associations often develop multiple enterprises, of which seed may be one.

farmers have been repeatedly exposed to certified seed through farmer field demonstrations and learnt about the benefits.

When in 2000 NARO looked for organized groups in Iganga to test new varieties, the county suggested they contact their women's association, which had grown to several hundred members and was eager to get seed of new varieties. The old landraces were yielding poorly and improved seed was hard to get. NARO identified six women and taught them how to produce maize seed at their station in Namulonge. Soon 14 trained women, two from each zone, acted as farmer trainers. The women's association became NARO's principal group to multiply foundation seed.

In 2004 they grew 146 tonnes of maize seed (Longe 1 and 4), which largely surpassed the needs of its members, and became outgrowers selling to Victoria Seeds, among other companies.

In 2005, the national excitement surrounding upland rice (Nerica) had aroused the women's interest and they approached NARO. As a favourite of NARO, they quickly received free training and pre-basic seed. For nearly a decade now, the association has built up experience growing and marketing seed of maize and more recently also rice, perhaps initially at the expense of food security (Box 10.4).

The seed growers of the Association stuck to maize and rice (Table 10.4). In 2007 they produced mainly the new maize variety Longe 5. By then all farmers had heard about it, as well as Nerica 4 seed. Charles Operemo, production officer of Victoria Seeds, said that 'there has been a strong promotional campaign for upland rice by our

Box 10.4 Growing Nerica seed at the expense of food security?

According to a report by CABI (who supported the Bakusekamajja Women Farmers' Development Association) rice seed production was only profitable for ten of the 21 farmers trained (Page, 2008). Growing rice and rice seed demands labour, especially during land preparation, weeding and harvesting, so farmers no longer had time to grow their maize crop.

However, by 2009, 17 out of the 21 farmers trained were making a profit and all were able to undertake both rice and maize cultivation. So what had happened? During the first year land had to be cleared; farmers were unfamiliar with best practices and had to weed four times. Soon they learned that it was better to prepare the land in December and plough once more before sowing. This killed the tough weeds and reduced weeding to two times only.

Assessing impacts before projects have advanced may give misleading results. Farmer groups need time to mature and time to experiment with new technology.

Table 10.4. Seed produced (tonnes), Bakusekamajja Women Farmers' Development Association.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--------------|----------------------|---------|---------|---------|---------|---------|
| <i>Maize</i> | 146 (2) ¹ | 428 (1) | 287 (1) | 121 (1) | 131 (1) | 133 (2) |
| <i>Rice</i> | – | 69 (1) | 66 (1) | 81 (1) | 71 (1) | 140 (1) |
| <i>Total</i> | 146 (2) | 497 (2) | 353 (2) | 202 (2) | 201 (2) | 273 (3) |

¹The number of varieties is given in parentheses.

government and the FAO to eradicate poverty, so market saturation hasn't been a big problem. Despite Nerica 4 being around for a decade, people appreciate its attributes, like good aroma and non-shattering, and that is why the sales of Nerica 4 seed never came down.' In the near future the women's association intends to embrace bean seed production.

Although the seed growers improved their living conditions, they became increasingly unhappy. Disturbed by the fact that retailers sell their seed at three or four times the amount the farmers get (and unaware of the actual costs of processing and marketing), they felt unfairly treated and in 2009 decided to try registering themselves as a company.

10.3.2 Structure

Management. The Bakusekamajja Women Farmers' Development Association has two key activities: seed growing and rearing animals through zero grazing. Only women are allowed to rear animals but men can sign up to grow seed. But men never have voting rights. Grace Bakaira is chairperson of the association and there is one cashier. Every year the female members elect a zonal leader, who monitors the activities of about 70 members. The association has 516 members in six communities. About 350 of them grow maize seed (85% women) and 407 produce rice seed (32% women). As women were already producing maize seed, working many hours a day, when rice arrived men came forward to engage in the rice seed business, attracted by the profitability.

'Although we started off with women only, men cried to join as they felt left behind. As fields could be up to 10km away from their home and men could more easily ride their bicycle there, we decided to include men for seed production,' explains Grace. The association has a family-friendly approach. During training sessions held on the weekend women are invited to bring their children along. If the husband is interested in the subject he can join as well. One of the association's by-laws for seed producers stipulates that children should never be mobilized to scare away birds from the crop, as this would keep them from attending school (Box 10.5).

Box 10.5 Scaring birds in a silent way.

Semu Kasagoya and his wife joined the Bakusekamajja Women Farmers' Development Association in 2005 and started growing maize seed (Longe 5) and later rice (Nerica 4). Seed growing has become their major enterprise.

When asked whether he faces problems with birds, like rice growers in many countries do, Semu Kasagoya sits back and starts explaining: 'We plant seed of both these new varieties when the first rains arrive and they will ripen at the same time. Birds like maize more than rice, but the damage they do to maize is limited because there is so much, so I don't really mind. But, if they have only rice to feed on, they can finish the entire crop. By the time the birds realize that there is also a rice field nearby, the rice is nearly ready to harvest. I have to spend only about 2 weeks in the field guarding my crop.'

When asked what he does during those 2 weeks, he smiled and continued: 'You must definitely not make any noise, because very soon the birds will get used to it and when they do not hear any noise they know the boss is away. It is better to stay quiet and throw a stone at them every now and then. It is the same if you want to keep thieves out of your field: you do not go shouting all day, because the day you don't shout the thief will know that you are not there.'

Land. Fields of new members are first inspected for suitability, to see if there are other varieties grown nearby. If neighbouring farmers grow the same crop, their relationship with the potential seed grower is assessed as they will need to agree on planting time or planting the same variety as the seed grown. Growers should have a plot of at least 1.2 hectare for seed production.

Equipment. The association has received basic equipment from various donors. In 2008 they bought 1.2 hectare of land, on which a year later an impressive seed processing plant was built by a Chinese company with funds from Lutheran World Relief. From an earlier project they had received a manual seed dresser.

Contracts. Each season growers decide on the variety, in consultation with the committee, after which they sign a contract with the association and receive foundation seed. Failure to sell seed back to the association can result in legal prosecution. Although several neighbours of seed growers have joined the association, many are afraid to become seed growers because of the stringent conditions set.

The committee of the association initially approached the companies to sell their seed, but since they became better known it is the other way round. ‘When the companies visit us, we look at what they want and what we have on offer. We sign a contract stipulating amounts and varieties to be delivered, but we do not decide on the price. As this fluctuates too much, both parties believe it is better to negotiate that at the time of harvest,’ says Grace.

Links. Apart from providing breeder seed seasonally, NARO has also played a crucial role in linking the association to companies and the seed regulatory authority. Having outgrowers well organized in an association is convenient for the seed companies, who cover the costs of the official field inspections. When the Bakusekamajja Women Farmers’ Development Association becomes a registered company they will have to pay for the certification themselves.

Quality control. Despite the cost, which is likely to increase significantly in the near future, chairperson Grace is convinced that official inspection is needed as long as most Ugandan farmers are illiterate. ‘Without control, selling fake seed would be open: at least now they fear,’ she says.

10.3.3 Cash flow

In the past, the women’s association benefited from support from the Rockefeller Foundation, CIMMYT and CABI, who trained its members on maize and rice seed production and handling and provided basic equipment. CABI developed a training manual and radio programmes.

‘When farmers told us their sad stories of how they had been cheated in the past with false promises, we decided to do everything possible to pay our members at the time that we buy their seed,’ explains Grace; ‘it is one of the reasons that our association still exists.’ Its seven-woman executive committee ensures every season that money is paid to the seed growers at harvest. The committee visits the different seed companies, negotiates seed delivery contracts and requests upfront payments of 70% at harvest time, once the price has been agreed upon. The association refrains from giving loans to its members, apart from seed loans, which are deducted at harvest time. Outgrowers receive a premium of 40–50% above the grain market price.

With no interest to keep on supplying other seed companies once they are fully registered themselves and realizing that a strong capital base is crucial to operate

a seed company, they established a saving and credit cooperative (SACCO) in mid-2009. Contrary to most SACCOs in Uganda, this was a community rather than a government initiative. Six months later, members had already deposited 7.3 million Ugandan shillings (\$3750). Knowing that transparency is key to survival, the SACCO set up a separate account with different signatories from those of the association. The SACCO gives loans to farmers, but only for agriculture and school fees.

With the large capital investment from Lutheran World Relief for the seed processing plant, the association signed a contract with them that it will recruit a management team and be fully operational by 2012.

The association does not fear competition, since, once it has been registered, it will be the only company operating entirely in eastern Uganda near its clients.

10.3.4 Marketing

‘Our clients return to us because we deliver good quality seed that has a high germination percentage. We try to limit sales to individuals. If a farmer comes in the name of a group and buys a large amount, we charge 1500 shillings (\$0.75) per kg of maize seed; individual members of our association pay 1700 shillings (\$0.85), whereas non-members pay 2000 shillings (\$1.00),’ says Grace Bakaira. Members of the association are key clients, although, once registered as a company, the association intends to supply most of its seed to agro-dealers (Table 10.5).

Seed enterprises gain a lot by knowing the grain market. As Grace explains: ‘Our main seeds grown are likely to remain the same in the near future, although demand may fluctuate. The quality protein maize, Longe 5, is really popular among schools, for instance. And, although Nerica 4 is the most popular upland variety, Nerica 10 with its bold grains mixes well with our Super landrace, which has aroma and similar cooking qualities. Traders like this as they can mix them and therefore they are on the lookout to buy grain of Nerica 10 from farmers.

When there is a good market for the grain, there is a good market for the seed.’

The women’s association organized a series of radio programmes on rice and seed cultivation. Soon after, they received many new orders for seed and 63 new members signed up. With growing demand for support, they also established another branch,

Table 10.5. Clients of the Bakusekamajja Women Farmers’ Development Association.

| | 2003 | 2009 | 2015 (predicted) |
|-------------------------------|------|------|---------------------|
| <i>Companies</i> | – | 1 | – |
| <i>Members</i> | 1 | 2 | 3 |
| <i>Schools</i> | – | 3 | 5 |
| <i>Women and youth groups</i> | – | 4 | 4 |
| <i>Individual farmers</i> | – | 5 | 7 |
| <i>Prison</i> | – | 6 | 6 |
| <i>NAADS groups</i> | – | 7 | 8 |
| <i>Agro-dealers</i> | – | – | 1 |
| <i>Relief agencies</i> | – | – | 2 |

Ranking assessment by senior management of seed enterprise, 1 being the most important.

called Bakusemajja 2, with 79 members. A similar experience took place in Mali, where farmers announcing local seed fairs on a rural radio station created such a demand for quality seed that it actually led to the establishment of a seed producers' cooperative (Section 5.5.1).

Since 2002 the association has had continued access to breeder seed and developed expertise in growing and selling their seed to members and other clients. Being closely linked to NARO and conducting varietal performance trials with them, they may access upcoming varieties, unless NARO signs exclusivity contracts with other companies.

However, managing a registered seed company and a sophisticated processing plant will be a completely different ball game. Monitoring, inspection, processing and marketing will come at a cost and price of seed will inevitably go up. What the association has always resented about seed companies, namely their high seed price, may be coming back to them. Whether the investment provided by the donor will bring benefits to their association and other farmers in the region remains to be seen.

10.4 Nyamabale Bean Seed Producers' Association

10.4.1 History

The Nyamabale Bean Seed Producers' Association started as a farmer field school group in 1997. Located 30 km from Kabale town in south-western Uganda, the group collaborated with NARO and the International Centre for Tropical Agriculture (CIAT) to test integrated bean root rot management and resistant bean genotypes.

By 1995, bean production in the highlands of south-western Uganda had plummeted by 80% due to a complex of root rot diseases (caused by soil-borne pathogens *Pythium* spp., *Fusarium* spp. and *Rhizoctonia solani*) (Opio, 1999). Families were going hungry, and children and pregnant mothers were especially at risk. Resistant bean varieties were urgently needed.

Drawing on beans bred in Uganda and at CIAT headquarters in Colombia, by 1999 the Nyamabale farmer group started evaluating over 100 lines with NARO, CIAT, local traders and local extension services. By the third year they had selected the three most resistant and appreciated lines: SUG 31 (NABE 12C), which is a climber bean, and two bush beans, RWR 1946 (NABE 13) and RWR 2075 (NABE 14) (Table 10.6).

Although farmers had selected the three most promising varieties, seeds were not available. NABE 12C was officially released in 2003 but no seed company was interested due to the high labour demand for staking climbing beans. The varieties NABE 13 and NABE 14 were released in 2006, but again, despite the high demand, no seed company was interested because they were mainly suitable for the highlands, filling a narrow ecological niche.

Apart from evaluating bean varieties, the Nyamabale farmer field school also taught their members about integrated pest and disease management and integrated soil fertility management to tackle bean root rot and bean stem maggot (which usually appear together and can cause 100% yield loss). Its field school became a model and soon it started training other groups in bean production for payment.

If the highland farming communities were to benefit from these new varieties, then the group would have to produce its own seed, which it did with technical advice

and support from NARO and CIAT. In 2005, the Nyamabale Bean Seed Producers registered themselves with the sub-county and district governments as producers of quality standard bean seed. The group also registered with NAADS as a community service provider to train other farmer groups.

It started small, producing 5.3 tonnes in 2005, steadily increasing its capacities by contracting other farmers to produce seeds under its direct supervision. By 2009 it was producing over 15 tonnes of standard seed (Table 10.7).

Table 10.6. Bean varieties selected by Nyamabale farmers.

| Variety | | Yield (tonne/ha) | Other attributes | |
|-----------------|--|------------------|--|--|
| Official name | Farmers' name and its meaning | | Biological | Consumer qualities |
| <i>NABE 12C</i> | <i>Musingiriro</i> (means a climber in Mufumbira language) and others call it sugar since they say it is sweet. | 2.5–3.5 | Tolerance to root rot, large attractive pods and seeds, high yield, more heat tolerant, suitable for areas with limited land | Highly marketable seeds, cooks fast, tasty and swells on cooking, tender leaves as vegetable |
| <i>NABE 13</i> | <i>Mulwanisa</i> (means it fights root rot resulting in greater availability of beans) | 1.5–2.5 | Resistance to root rot, large red seeds, high yield | Large red seed suitable to sell and to eat at home |
| <i>NABE 14</i> | <i>Muzawura</i> (means 'saviour' as it fought root rot disease and had more selling/ high market demand and brought people out of poverty) | 1.5–2.5 | Resistance to root rot, large red seeds, high yield | Large red seed suitable to sell and to eat at home |

Table 10.7. Seed supplied (tonnes) by the Nyamabale Association.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------------|----------------------|---------|---------|---------|---------|----------|
| <i>Bush beans</i> | 0.2 (1) ¹ | 1.1 (2) | 1.6 (2) | 2.2 (2) | 2.3 (2) | 1.8 (1) |
| <i>Climber beans</i> | 0.3 (1) | 4.2 (1) | 4.9 (1) | 6.6 (1) | 7.9 (1) | 13.8 (1) |

¹The number of varieties is given in parentheses.

Lessons learned from the community-based seed production in Kabale helped NARO to successfully scale up the system to other districts of Bushenyi, Kisoro, Kabarole, Mbarara and Kamwenge. Bean traders also started selling bean seed (Box 10.6). Formal and community-based seed systems target different markets and supply different bean varieties, resulting in complementary effects and outreach to especially hard-to-reach communities in remote areas.

Box 10.6 Making money with bean seeds.

Patrick Monday, a bean trader from Kabale district, was surprised to realize that he had never thought of earning much money from selling seeds, but, with access to the root rot-resistant, high yielding bean variety NABE 14, he is generating a good income for his family.

The seed is in high demand in communities with more land which can afford to grow bush beans. The new bean varieties fetch higher prices and more people are now growing improved seeds in Kabale.

10.4.2 Structure

Management. The Nyamabale Bean Seed Producers' Association has the vision of producing high quality seed of both climbing beans and bush beans and of working closely with farmers, NGOs, researchers and others to supply improved bean varieties to farmers at a relatively low cost, without compromising quality. It hopes to continue growing and become a seed company.

It is governed by a constitution made by the group with help from NARO and community leaders. Every 2 years it selects a chairperson, vice chairperson, treasurer, vice treasurer and secretary. Although Nyamabale group has 18 registered members, of which six are women, they work with 27 other groups totalling 470 farmers, who produce bean seeds under their supervision.

Some also grow seed potato, mostly on a small scale, for selling to communities. They get improved seeds from the Uganda National Potato Producers' Association based in Kabale and to a lesser extent from the Kachwekano Zonal Agricultural Research and Development Institute (ZARDI).

Over the years, NAADS has often contracted them to support other groups on basic crop production and pest, disease and soil fertility management. The cash earned from such services is invested in the seed business or other agro-enterprises.

Land. Land tenure is a challenge for the association. For a long time, the group depended on land donated by the other groups. After raising some funds, they bought 7 hectares of fields. They also rent land each season from other farmers. This is the most densely populated part of Uganda (327 inhabitants per km²) with average farm size between 0.2 and 0.8 ha; climbing beans (NABE 12C) are particularly important in this region because they yield 2.0–2.5 tonnes of seeds per ha, which is three to four times more than bush beans.

Infrastructure. The association has an office, an information centre (that has reading materials and photographs on bean production, protection and seed processing) and a big, new, modern store which can hold 40 tonnes of seed.

Equipment. The association does not have large machines but performs most work by hand. It uses a drum to mix chemicals (Actellic Super dust, used to control storage pests in grain, not harmful to consumers) for batches of 100 kg of seeds. No dyes are used in seed dressing. It also has a scale that weighs up to 500 kg. Another

machine verifies that moisture level before storage is at 12–15%. Seeds can stay in storage for up to 2 months before being sold.

Links. The group receives foundation seed from NARO and maintains good relations with local government, researchers, extension, NGOs and community-based organizations. Participatory varietal selection and on-farm demonstrations have enhanced farmers' and the community's knowledge about new varieties, allowing them to select varieties they prefer, and also helped growers to produce what farmers demand. NGOs, community-based organizations, agro-dealers and farmers are the key clients. The group can access government help by working closely with NAADS and other local government projects that operate in the area. Developing and managing effective partnership have been essential for system development and sustainability (Rubyogo *et al.*, 2010).

Training. NARO, CIAT and other development agencies have trained the association in seed production and postharvest management, group visioning, leadership, negotiation and communication, conflict management, business planning, farming as a business, marketing, market chain analysis, and cost and benefit analysis. Farmer groups have learned to manage their resources better and participation of both men and women has created awareness of gender equity.

Quality control. At times, seed production fields are inspected by the National Seed Certification Service, but certification has been a problem for most farmer groups. The few certifying agents cannot visit all seed producers across the country; hence seed is sold as standard seed.

Farmer groups have received training in internal quality management. A handbook developed by CIAT shows simple methods farmers can use to test seed to improve quality (David, 1998). Farmers test germination, moisture and other quality aspects. Germination tests before storage should give at least 85% germination. Initially farmers were reluctant to rogue off-types, which they thought was destroying their beans, and preferred allowing these to grow and harvesting the seeds for food. This challenge was gradually overcome.

10.4.3 Cash flow

The group agrees on a price with buyers before harvest, or may even sell seed under contract with the prices set beforehand, especially to NGOs, the Kabale District Farmers' Association and community-based organizations. Usually seeds are not stored for long as demand is high. This reduces storage costs and losses.

It has not been very easy for the group to obtain loans due to the high interest rates charged by micro-finance institutions. Other challenges include: drought and erratic weather; sensitizing and convincing communities about the advantages of quality seed (inspected rather than just grains); inadequate business planning and record keeping; seed producers' limited capital; and lack of access to formal credit.

10.4.4 Marketing

The association sells most of its seed to traders (the seed/grain traders who work the normal markets), farmers and even agro-dealers as far away as Kabale town (30 km),

who normally only sell certified seed (Table 10.8). If they get there first, NGOs may take most of the seeds while in other seasons NAADS takes the most. NGOs, NAADS, traders and agrodealers take up to 80% of the seeds that are sold locally.

The agro-dealers selling bean seed are mostly members of UNADA. NARO gave them posters on bean varieties and trained them on seed handling, business management and communication to clients. Both bean seed producers and agro-dealers make announcements on the local radio in Kabale to inform potential clients about seed availability and prices.

High quality keeps the customers satisfied, even at a price about double the grain price. The group sells its inspected seed at 1800–2000 shillings per kg (\$0.9–1.0) while the price per kg of grain is 1000–1200 shillings (\$0.5–0.6) and of certified seed 2500–3000 shillings (\$1.2–1.5). While NGOs, NAADS and agro-dealers buy in bulk, the group uses small packs (0.5 kg, 1 kg and 2 kg) for farmers. The new varieties are now grown in over ten districts and have spread to Kenya and Burundi.

Farmers appreciate that seed is available locally and from a trusted source that can be held accountable. The producer group has built a good reputation with NGOs and other institutions within the district and beyond for its supply of good quality seeds. Traders around Nyamabale village have been buying seed from the group and selling them around Kasese (400 km away) and as far as Rwanda and Congo (DRC). Traders say they actually have clients waiting for deliveries.

Table 10.8. Clients of the Nyamabale Association.

| | 2004 | 2009 | 2015 (predicted) |
|---------------------------|------|------|------------------|
| <i>Traders</i> | 5 | 1 | 2 |
| <i>Agro-dealers</i> | – | 2 | 1 |
| <i>Members</i> | 1 | 3 | 3 |
| <i>NAADS groups</i> | – | 4 | 7 |
| <i>NGOs and CBOs</i> | 2 | 5 | 6 |
| <i>Individual farmers</i> | 3 | 6 | 5 |
| <i>Farmer groups</i> | 4 | 7 | 4 |
| <i>Seed companies</i> | – | – | 8 |
| <i>Relief agencies</i> | – | – | 9 |

Ranking assessment by senior management of seed enterprise, 1 being the most important.



Bean seed produced by the association for sale in small packs at the Royal Agro-input Suppliers shop in Kabale, one of many rural shops that are members of the Uganda National Agro-input Dealers' Association.

10.5 Challenges and Strengths of the Seed Enterprises

Following the 2008 food crisis, demand for seed increased and many farmers' associations, agro-dealers and business people believed that they could run a seed

company. Both of the farmers' associations in this chapter were struggling to become registered, as it proved hard to fulfil all the stipulations, such as having the technical expertise to monitor the members' production. However, despite the growing number of companies, the government has not invested in quality control. Rather, it cut the staff at the National Seed Certification Service from eight to six in 2010. Being unable to cope with the already heavy task, the credibility of formal seed is at stake. Only companies that are willing to invest in quality, innovate with packaging to avoid fraud and actively market their products are likely to survive.

Also, there is little or no foundation seed available for most food security crops such as sorghum, millet, beans, cowpea and groundnut, so seed enterprises often sell standard seed rather than certified seed of these crops (Section 10.4).

National companies do not fear international or multinational seed companies taking over the Ugandan seed market, because quantities of hybrid seed are minimal. Also, Uganda's maize consumers prefer local white maize varieties for their unique flour qualities for baking bread and for brewing.

Uganda has no system of plant breeder rights, which some argue discourages investment in research (Chapter 2). However, according to NASECO, this is not a major problem: while it invests in research in new varieties it starts bulking seed and, by the time the variety is released, enters the market at least 2 years ahead of its competitors.

NASECO's main reasons for success are its visionary, pragmatic management, its rationally paced growth with a clear focus and avoiding loans, as well as its perseverance and learning from mistakes (Section 10.2). It has invested in its staff and experimented with equipment, self-pollinated varieties, seed production, processing, packaging and marketing. Most of all, NASECO developed an abiding respect for farmers, both as outgrowers and as clients. It is a company with ethical principles. With risk increasing as the company expands, managing its growth will be key to survival.

As the Uganda seed sector depends on its outgrowers, the viability of seed enterprises is linked to fluctuations in the labour market, including the opportunity costs to outgrowers of producing seed. Seed production is labour-intensive, especially for land preparation, weeding, roguing off-types and harvesting. During the first growing season, after the New Year, families have often spent their money and have school fees to pay, so farmers are on the lookout to sell their labour. During the second season, farmers spend more time on their own farm and labour becomes more expensive. There are also regional differences. In Iganga, eastern Uganda, for instance, labour is more expensive than elsewhere, because of the high migration rate to urban areas. Farmers' associations and companies operating in eastern Uganda will need to pay more or help outgrowers save labour.

The Bakusekamajja Women Farmers' Development Association has excellent links with national researchers and was able to cleverly expand its farmer customer base through educational radio programmes dealing with the crops whose seed they produce and sell (Section 10.3). Although they have been testing varieties and producing seed for a decade, they became increasingly frustrated selling to seed companies, believing that seed has to be cheap for farmers (an opinion often shared by donors and development agencies). Having received much capital investment from donors and trying to become a seed company, they will soon face the realities of running a business themselves. If they are not happy running their own company or if it proves too much for them, they can always go back to being outgrowers.

Beans are an important national crop, but when varieties have a narrow ecological niche or are difficult to mechanize, such as the climber beans in south-western Uganda, community-based seed production may be the only way, as shown by the Nyamabale Bean Seed Producers' Association. Community groups are succeeding in meeting a need (and making money), even though demand is too limited to attract the interest of any companies.

Women of both seed producing associations have actively engaged with the media, which has helped to establish their reputation and expand their membership. Based on a study in Mali, Uganda and Zambia, the International Women's Media Foundation (IWMF) found that just 4% of all media coverage was devoted to agriculture, of which rural women featured in just 7% of the stories (despite them producing 70% of sub-Saharan Africa's food) (IWMF, 2009). The examples in our book show the importance of media in establishing rural enterprises.

Considering that the private seed sector is still relatively small and young, Kiwanuka and Kintu (2004) called for policies to be inclusive of farmers' rights to keep on producing, saving and selling their own seed. They also proposed that communities should be supported by providing technical knowledge on seed saving and storage, which is one of the areas where media can play a crucial role (Van Mele *et al.*, 2007).

Farmer seed producer groups face many challenges, including labour-intensive manual harvesting and threshing, transport from the field, limited drying, storage and packaging facilities, and financial management. SACCOs may bring some credit relief, but good governance, capitalization and attractive financial services are crucial to surviving in a competitive financial market. This is exactly the support that the Uganda Cooperative Savings and Credit Union (UCSCU) gives to its members. Bridge funds and loan guarantees to commercial banks backed by the government and donors may be just as important, as also shown in Mali (Chapter 5).

Uganda is said to be one of the most entrepreneurial countries in the world. However, about 30% of the entrepreneurs shut down their businesses within the first 12 months of operation (Rooks *et al.*, 2009). Although seed enterprises are particularly tricky to establish (Chapter 2), in Uganda none of the registered ones have gone bankrupt so far. As Uganda's seed industry is still heavily dependent on non-commercial sales to government and donor-funded projects, this is the basis on which over half of the current seed companies are able to survive (Clive Drew, personal communication). In a country where many dream of setting up their own business, at least some dreams do come true.

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