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Nigeria: Clustered Seed Companies

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4.1 Introduction

4.1.1 Agriculture

Northern Nigeria is flat, with a long dry season. The south is hillier with a longer rainy season. The main crops in the north are maize, sorghum, millet, rice, groundnut and irrigated crops, especially vegetables. The main crops of the south are roots and tuber crops such as yam, cassava, coco yam and sweet potatoes, as well as oil palm, mangoes, citrus, pineapple and other fruits.

Nigerian farms are small, an average of some 2 hectares, and about 45% of the gross national product is from agriculture. The British colonial government did not create large estates, but did establish commodity boards, monopolies which paid fixed prices for groundnuts, cocoa, palm oil and cotton for export. The boards lived on after independence in 1960, but were disbanded during the structural adjustment of the 1980s.

Roads are gradually improving, with divided highways (freeways, motorways) now connecting some major cities, but even some of these freeways are now plagued with potholes, adding to transportation costs for agriculture. The electricity is off for most of the day, forcing many agro-industries to spend precious capital on fuel and generators. Federal and state governments have subsidized fertilizer and seed for some years now, thereby strengthening the demand for seed.



4.1.2 Seed industry

There are 13 companies registered to produce certified seed in Nigeria. There are about nine outgrowers, producing foundation seed for the National Agricultural Seed Council. Farmers' associations produce about 12–20% of the certified seed used in Nigeria. They exist in almost every state. The first seed company was started in 1984 (Section 4.4.1) and, although it is a difficult market, new companies, often small ones, have started constantly since then. NGOs play less of a role in Nigeria than in some other African countries. NGOs produce little certified seed (Table 4.1), and only one seed company mentioned them as important customers. There are only two farmers' associations registered to produce seed in Nigeria.

What is unusual about Nigeria is the large presence of local government in seed production and distribution. Nigeria is divided into 36 states plus the Federal Capital Territory, roughly like the US model. Many of the Nigerian states have seed production units in their ADPs (agricultural development projects), which are managed and financed by the individual state governments (Section 4.3.1).

Table 4.1. Seed certified (tonnes) in Nigeria, 2005–2009. Source: National Agricultural Seed Council.

| | | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <i>Maize hybrid</i> | ADPs | 0 | 0 | 0 | 0 | 0 |
| | Companies | 1,386 | 2,948 | 1,137 | 2,641 | 3,150 |
| | NGOs | 0 | 0 | 0 | 0 | 0 |
| | Total | 1,386 | 2,948 | 1,137 | 2,641 | 3,150 |
| <i>Maize OPV</i> | ADPs | 680 | 1,006 | 1,244 | 3,437 | 264 |
| | Companies | 372 | 1,319 | 942 | 1,130 | 1,429 |
| | NGOs | 0 | 0 | 0 | 0 | 89 |
| | Total | 1,052 | 2,325 | 2,186 | 4,567 | 1,782 |
| <i>Rice</i> | ADPs | 1,005 | 1,647 | 2,909 | 6,501 | 227 |
| | Companies | 415 | 1,108 | 2,591 | 1,806 | 936 |
| | NGOs | 0 | 0 | 0 | 0 | 21 |
| | Total | 1,421 | 2,756 | 5,501 | 8,314 | 1,184 |
| <i>Sorghum</i> | ADPs | 55 | 77 | 82 | 180 | 17 |
| | Companies | 241 | 642 | 117 | 2,186 | 492 |
| | Total | 296 | 718 | 199 | 2,366 | 509 |

(Continued)

Table 4.1. Continued.

| | | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------|--------------|------------|------------|------------|--------------|------------|
| <i>Pearl millet</i> | ADPs | 77 | 130 | 161 | 707 | 175 |
| | Companies | 0 | 0 | 0 | 295 | 764 |
| | Total | 77 | 130 | 161 | 1,002 | 939 |
| <i>Wheat</i> | ADPs | 22 | 40 | 70 | 250 | 0 |
| | NGOs | 0 | 0 | 0 | 0 | 93 |
| | Total | 22 | 40 | 70 | 250 | 93 |
| <i>Cowpea</i> | ADPs | 70 | 105 | 92 | 995 | 49 |
| | Companies | 24 | 37 | 62 | 84 | 49 |
| | NGOs | 0 | 0 | 0 | 0 | 17 |
| | Total | 94 | 142 | 154 | 1,078 | 114 |
| <i>Soybean</i> | ADPs | 41 | 257 | 277 | 417 | 15 |
| | Companies | 61 | 78 | 138 | 129 | 191 |
| | NGOs | 0 | 0 | 0 | 0 | 34 |
| | Total | 103 | 335 | 415 | 546 | 240 |
| <i>Groundnut</i> | ADPs | 47 | 122 | 121 | 392 | 26 |
| | Companies | 15 | 14 | 23 | 12 | 47 |
| | Total | 62 | 136 | 144 | 404 | 73 |
| <i>Cotton</i> | ADPs | 4 | 47 | 94 | 301 | 15 |
| | Total | 4 | 47 | 94 | 301 | 15 |
| <i>Sesame</i> | ADPs | 8 | 13 | 19 | 233 | 3 |
| | Companies | 0 | 0 | 0 | 12 | 0 |
| | Total | 8 | 13 | 19 | 245 | 3 |
| <i>Total</i> | | 4,525 | 9,589 | 10,079 | 21,715 | 8,101 |

There is a small organization of Nigerian private seed producers, the Seed Association of Nigeria (SEEDAN), with headquarters in Zaria. It has slight impact on policy or the industry. All seed companies are subscribed members.

Seed cluster. As seed expert Robert Tripp noted, several seed companies often locate near each other, to facilitate information flow (Tripp, 2001). Several seed companies are based in the small northern city of Zaria, in Kaduna state: including Premier Seed, Alheri Seed, Nagari Seed, Maslaha Seed and the ADP seed activities for Kaduna state.



The seed companies clustered around Zaria benefit from the existing packaging industry.

The seed companies are conveniently located near the National Agricultural Extension and Research Liaison Service (NAERLS) of Ahmadu Bello University (once the largest in Africa south of Cairo). The university is also home to the Institute for Agricultural Research, where companies may get breeder seed and foundation seed. The NAERLS is a competent media programme at the university, producing radio and television programmes as well as written material in five languages (English, Hausa, Yoruba, Igbo and Nigerian Creole). The north-west regional headquarters of the Seed Council are also in Zaria, where small seed companies can process their seed.

4.1.3 Policy

A change in policy on import tariffs for cereals may have affected seed enterprises. In 2004 the government imposed a 130% levy on rice imports to protect Nigerian rice farmers, which stimulated farmers to buy seed. The high import tariff was lifted during the 2008 food crisis for 6 months. After the crisis, the tariff was replaced with a much lower one (32.5%) (Ibrahim Bamba, personal communication). Table 4.1 shows a surge in seed produced in 2008, in response to rising grain prices, but it fell again in 2009, when the tariff on grain was much lower. High grain prices stimulate demand for seed (see Section 10.1.5). Certified seed production for all crops is still low in Nigeria, although it increased sharply from 4525 tonnes in 2005 to 21,715 tonnes in 2008, before plummeting to 8101 tonnes in 2009 (Table 4.1).

The changes in certified rice seed production were similar. The authors believe that the policy on import tariffs helped drive up seed production due to higher demand by farmers, as seed demand is driven by paddy profitability, supported by high tariffs. Unfortunately, increased production was not accompanied by improved processing facilities, which could discourage further increases in production and the use of certified seed.

There are no taxes on seed or on basic food production, although supermarkets and exports are taxed. The government supports the formal seed sector through the National Agricultural Seed Council (NASC), which provides seed producers with foundation seed and quality control (Section 4.3.2). The NASC is federal. The federal and state ministries of agriculture often buy seed from companies to give or sell at subsidized prices to farmers. This not only discourages companies from advertising and marketing, but late government payments, outstanding after 2 or 3 years, also tie up their operating capital.

It is government policy to encourage the production and use of certified seed of improved varieties. Each state funds agricultural extension through its agricultural development project (ADP), which also promotes formal seed.

The National Agricultural Seed Decree No. 72 of 1992 by the (then) military government established the NASC and created its board of directors. The law is vague regarding plant breeders' rights. The Crop Variety Registration and Release Committee is part of the Seed Council. The Committee may take 2 to 4 years of trials (on-station and at several locations on-farm) before releasing a variety in Nigeria. Under the Decree (now the Seed Act), only released crop varieties can be marketed. While certification is voluntary, all seed to be sold must be 'truthfully labelled' (i.e. name of the variety, moisture and germination percentage). Certification is compulsory for all breeder seed, foundation seed and hybrids.

Seed certification. The 1992 decree established the Seed Certification Department of the NASC as the seed certification agency. The NASC assigns a seed certification officer to each seed company (or sometimes one officer for a group of small companies) while one to three seed officers are assigned to each of the ADPs (state governments) that produce seed. There are few complaints from seed producers about the arrangement, which streamlines certification.

In spite of this, and for reasons not entirely clear, there are still some cases of seed contamination. Even some of the breeder seed, which should be pure, is contaminated with other varieties. Mixture gets worse as seed moves down the chain to foundation seed and certified seed.

Regional harmonization. In 2009, new agreements with ECOWAS (Economic Community of West African States) led to two changes. First, it will speed up the release of new varieties, as any variety released in one member country may be sold in others. Secondly, all seed must now be certified. Nigeria realized that it would be impossible to certify all seed and argued against it during negotiations, but it was outvoted. Companies can no longer sell uncertified but truthfully labelled seed, so the formal sector must decide what to do with legislation that is impossible to meet. The same is true for Uganda (see Chapter 10, this volume).

4.1.4 Seed use and demand

Certified seed use. Between 5 and 10% of the national seed requirement comes from certified seed, the rest from the informal sector or farmer-saved seed. Except for a few crops, most varieties being planted now are improved varieties, although many have been planted by farmers for a long time without renewing the seed.

In-between categories of seed. Until recently seed could be sold without being certified in Nigeria, as long as it was truthfully labelled. The ECOWAS agreement will make uncertified, truthfully labelled seed illegal for 11 major crops. The Seed Council no longer tolerates companies selling uncertified seed. Farmers, however, may continue selling seed to other farmers (Box 4.2), in small amounts.

Problems. There is little irrigation so almost all seed must be grown in the rainy season and stored for the next year. Bank loans are hard to get and expensive.

This is in sharp contrast to Mali, where the government has created favourable financial conditions to support the agricultural sector, including the seed sector (Section 5.1.3).

Demand and varieties. Most maize varieties come in a yellow version for animal feed and a white one for people to eat. There is both upland and lowland rice. Northern Nigerians prefer sticky rice, to pound into a thick ball (a bit like mashed potatoes), while southerners like grainy rice. The north produces white cowpeas to eat locally, and brown ones are preferred by the southern market. Northerners like sweet cassava, while southerners eat dishes made from cassava flour, which can use sweet or bitter cassava.

Seed exports. One Nigerian company (Premier Seed) exports maize seed (hybrids and open-pollinated varieties – OPVs) within West Africa. The Nigerian government encourages exports by placing no tariffs, duties or other restrictions on companies exporting seeds.

Reasons to buy seed. Most of the formal seed is hybrid maize, even though maize is not Nigeria's biggest crop. Demonstrations by seed companies, NGOs and ADPs have convinced farmers of the advantages of using certified seed. In the case of maize and sorghum, which are raw materials used in the brewing and confectionery industries, farmers get a premium price for certain varieties, which encourages the use of certified seed. The same is happening with some rice varieties which are supplied by farmers to rice processing companies. Farmers buy seeds because of perceived benefits of a secured market, higher yield and resistance to pests, especially the parasitic striga weed, and when they cannot maintain the viability of their own seed.

Case studies. The following case studies describe five of the 13 registered seed companies in Nigeria, one NGO (Share Foundation) and a government structure (the ADPs). We start with the NGO because it focuses on foundation seed production, the source of the seed for other enterprises producing certified seed.

4.2 The Share Foundation

4.2.1 History

In December 2005, the Share Foundation harvested some 240 tonnes of valuable foundation rice seed. On 2 January 2006, that seed was all destroyed in a fire. Share never recovered from the loss, but is still trying.

The head and founder of the Share Foundation is Dr Sam Fagade, a professional agronomist and former head of Nigeria's rice research programme, who has also worked at IITA (International Institute of Tropical Agriculture) and AfricaRice. The case of Faso Kaba in Mali (Section 5.2) describes another person with contacts with research who was able to become a seed entrepreneur.

In 2001, Fagade started an NGO dedicated to teaching farmers about rice growing in Oyo State, south-west Nigeria. But in 2005 Share Foundation got an opportunity to lease 100 hectares of irrigated land and to obtain a loan for 50 million Naira (\$333,000) to grow rice seed.

Fagade and his son Lekan, an agricultural engineer, bought two Indian tractors, took over a cluster of buildings on a state farm, and planted 100 hectares of rice seed.

Harvesting so much rice was a challenge. Irrigated rice is harvested at the end of a long dry season. The tonnes of rice were tinder dry. The Fagades took a break for Christmas. On the second of January Fagade got a phone call. The rice seed was on fire.

To his credit, Fagade never gave up. For one thing, he refrained from withdrawing the remaining 30 million Naira (\$200,000) of his loan. He still had the rest to pay off, but he would avoid getting deeper in debt.



Dr Sam Fagade and a sturdy, Chinese harvester-thresher.

4.2.2 Structure

Diesel to run the irrigation pumps was a major expense. So, after the fire, Fagade turned to growing foundation seed in the rainy season, on smaller amounts of land, 5 to 6 hectares, about 20 tonnes of seed. The Share Foundation is one of nine out-growers, producing foundation seed for the National Agricultural Seed Council. Sam Fagade's son, Lekan Fagade, is the farm manager, supervising two workers. They still have both tractors, a wagon, a boom sprayer, a newer, sturdier harvester-thresher, besides a small campus of shoddy, crumbling buildings, left over from the days when the land was a state farm.

Although the Share Foundation has close ties with IITA, AfricaRice and national research programmes, its closest link is with the Seed Council, which inspects the rice crop four times a year, provides the breeder seed and then buys the harvested foundation seed in bulk, hauls it to Ibadan (an hour's drive away) to have it cleaned, conditioned, packaged and distributed to producers of certified seed.

4.2.3 Cash flow

The Share Foundation has managed to get small grants of \$3000 to \$5000 each, from the FAO, and grow enough foundation seed to cover costs, but Share has still not repaid its loan and Fagade says he has not paid his staff in a year.

In 2009, it was awarded \$150,000 from AGRA (Alliance for a Green Revolution in Africa) to produce rice seed, hybrid maize and soybeans, and it is now looking forward to a better year.

4.2.4 Marketing

For now its only marketing is through the Seed Council, which buys all of the Share Foundation's seed.

4.3 The Agricultural Development Projects (ADPs)

4.3.1 History

The ADPs (agricultural development projects) started in six states in 1975 as a World Bank funded activity. Between 1981 and 1984, the ADPs expanded from six pilot projects to statewide projects in three states (Kano, Sokoto and Bauchi). By 1992 there was an ADP in each state of Nigeria (Cheema *et al.*, 1994). These were integrated rural development projects which did everything from road building to agricultural extension. As old states divided, the new, smaller states also added ADPs. Now each of Nigeria's 36 states has an ADP, as does the Federal Capital Territory.



Every state in Nigeria has its own agricultural development project, which often inherited infrastructure from donor and government projects. Most have continued producing subsidized seed, albeit not for all crops.

Just as the ADPs were starting, from 1975 to 1980, the FAO supported the National Seed Service (now the National Agricultural Seed Council) with a seed project funded by the UNDP. The second phase (1981 to 1985) was funded by the Nigerian federal government. This seed project created seed processing and testing facilities in the cities of Ibadan (south-west Nigeria) and Zaria, in the north. Many seed officers were trained and seed certification was upgraded with equipment and training of laboratory staff (Usman, 1994). At first the ADPs were asked to produce seed; after all, there were no private seed companies in Nigeria until AgSeed started in 1984 (see Section 4.4). By 1992 the ADPs were producing massive amounts of seed, enough to plant 8–15% of Nigeria's crops, and private companies were complaining of unfair competition; ADP seed was so heavily subsidized that sometimes it was cheaper than grain in the market (Joshua, 1994). In fact, ADPs produce no hybrid maize, which by government policy is the responsibility of the private sector. ADPs produce seed that is less profitable, including rice (Table 4.1).

In 2010 the 37 ADPs are still agencies of the state governments, only loosely connected to each other (i.e. there is no national head of the ADPs) (Madukwe *et al.*, 2002). Many ADPs still produce seed, but not all. We visited the ADPs in Oyo, Ondo, Ekiti, Kaduna and Kano states, which all produce seed, especially maize OPVs, rice, soybean, cowpea and groundnut.

The ADP buys foundation seed from the National Agricultural Seed Council, distributes it to outgrowers, buys back the harvest, conditions and packages the seed

and sells it to smallholder farmers for 120 to 150 Naira per kg (\$0.80 to \$1.00) for open-pollinated maize, while private companies sell their hybrid maize seed for about 200 Naira (\$1.33) per kg.

Not all ADPs were created equal. For example, the Kaduna ADP inherited massive administration buildings from the days when Kaduna was the British headquarters for all of northern Nigeria. The ADP there was one of the first pilot projects, endowed with road building equipment and a large seed processing plant. As a second example, Ondo State was divided into Ondo and Ekiti in 1991; Ondo got the old agricultural office buildings, but Ekiti got the biggest seed plant in Nigeria (perhaps in all of West Africa), which could process 3 tonnes of seed an hour, while other factories could handle no more than 2 tonnes (Shobowale, 1994).

Since the early days the ADPs have lost staff and funding. But they all survived, even after structural adjustment crippled the formal sector. For example, in Kaduna there were 3000 extension agents serving 400,000 farm families, but after 1997 there were just 300 extension agents for a growing population that soon reached 500,000 farm households. The Kano ADP nearly stopped producing seed for several years and only started again in 2004.

The ADP in Kaduna survived budget cuts by using its heavy road building machinery to win construction projects. Other ADPs got donor-funded development projects, allowing them to continue. For example, the Multinational Nerica Dissemination Project has been funded by the federal government and the African Development Bank since 2004 in six states. This allowed the six ADPs to increase the amount of Nerica rice seed they distributed. And all the ADPs had modest budget support from their states.

ADPs that had seed plants (Kano, Kaduna and Ekiti) were able to keep most of the equipment running, no small feat since by 2010 most of the machinery was 30 years old and too big, and spare parts were hard to find and expensive.

The ADPs were able to ride out political changes. For example, in 2003 the federal government started the Presidential Initiative for Increased Rice Production and Export (as well as initiatives on maize, oil crops and others), whose strategy included the sale of subsidized, certified seed to farmers. Seed was produced through private companies. The federal government bought the seed with a 50% down payment and distributed it to the ADPs, which were supposed to recover the other half of the price from the farmers and pay it to the seed companies. Most ADPs could not recover the money as the farmers complained that they did not have the money, or the seed arrived too late to plant or was not what they wanted. The ADPs simply gave it away, saddling the seed companies with bad debt, which was eventually settled by the federal government through the Seed Council, who had to pay the seed companies back the money that could not be recovered. Besides this federal programme, the ADPs kept producing and selling their own subsidized seed to farmers.

4.3.2 Structure

Management. The ADPs are well managed. When we visited them in Oyo, Ekiti, Kaduna and Kano states in February 2010, the staff would quickly arrange for us to meet their programme manager, a person who had held the post for 10 years. The manager would speak knowledgeably about seed issues in his ADP. Table 4.2 shows the amount of certified seed raised by the ADP outgrowers in Kaduna, a major maize-producing state. Kaduna farmers buy more hybrid maize seed from Premier Seed Company than any other state. Note that

most of the seed in the table is rice, suggesting that ADPs are an important source of rice seed, which may not be as profitable for private companies.

An ADP seed unit is typically managed by an assistant director of seeds, who answers to the director of technical services, who is under the programme manager (the head of the ADP).

Within the seed unit, the assistant director of seeds supervises an assistant seed officer, typically an agronomist, who oversees internal quality control.

The state ADPs are divided into three or four zones, which have one manager, technical officer and seed officer per zone. In each local government (municipality) ADP extensionists facilitate the seed work (e.g. finding outgrowers and training farmers) (Box 4.1).

Structure. The ADPs buy back the seed from outgrowers, although sometimes they may not buy it all. At least one ADP gives per diem to the inspectors from the Seed Council. This is not legal, but it does suggest that the ADPs want to be inspected, on a timely basis.

During the Presidential Rice Initiative (2003–2007), the Kaduna ADP had about 140 outgrowers. After the initiative ended, the ADP reduced it to 37, but they were still growing tonnes of rice, OPV maize, sorghum, cowpeas and soybeans. Outgrowers often sell uncertified seed to their neighbours (see Boxes 4.1 and 4.2).

The ADP hauls the seed to the seed factory, but if it does not have one it may use one of the Seed Council's factories. The ADP cleans the seed, bags it in 100 kg sacks and pays the outgrowers 150 Naira (\$1.00) per kg, usually within 3 months of harvest.

The ADP stores the seed and then near planting season conditions it, dusting it with fungicide and insecticide, and bags it in smaller plastic bags of 5 kg to sell to farmers at just 150 Naira per kg. The ADP pays for all of the processing and transaction costs.

Links and partnerships.

The National Agricultural Seed Council makes the whole system work. It holds an annual planning meeting in December–January, one in the north (Zaria) and one in the south (Ibadan), with the ADPs, seed companies, research institutes and some of the outgrowers. The ADPs and the companies submit 'indents' (estimates of foundation seed

Table 4.2. Certified seed produced (tonnes), Kaduna ADP outgrowers, 2008.

| | |
|------------------|-----|
| <i>Rice</i> | 236 |
| <i>OPV maize</i> | 102 |
| <i>Soybean</i> | 25 |
| <i>Sorghum</i> | 21 |
| <i>Cowpea</i> | 15 |
| <i>Total</i> | 399 |

Box 4.1 A Nerica seed grower in Kaduna.

Mallam Nasiru, in Kinkiba village, Kaduna state, started growing seed in 1992, to help other farmers. In 2000 he started growing Nerica 1 and 2 (rice). He also grows sorghum and maize seed. He started with less than 2 kg but in 2009 he sold 30 to 40 bags of rice (of about 80 kg each), 30 of maize and eight of Nerica 2 to the Kaduna State ADP.

The ADP pays the cost of inspections. Mallam Nasiru wasn't even aware there was a cost. He assumed that the certification officer was part of the ADP.

He is also in the PVS (participatory varietal selection) group sponsored by the ADP, where he tries new varieties and encourages his neighbours to see them. For example, he is now trying Nerica 8. Sometimes he also sells seed to his neighbours, for 150 Naira (\$1.00) a kg, the same price as the ADP. The seed the neighbours buy is not certified, but is excellent seed.

Box 4.2 Seed growers of Bida Bidi.

Matina John is a woman farmer in the village of Bida Bidi, on the highway east of Zaria. We met her by accident, looking for women who had seen rice seed videos. She had not seen the videos, but she did produce seed, even though her extension agent was unaware of it.

Mrs John started in 2000, producing about 15 bags of 100kg of maize and 25 bags of paddy rice. Encouraged by the high yields of improved varieties she began producing seed for sale. She buys the seed from ADP outgrowers who live nearby. Her outgrower neighbours are people like Mallam Nasiru (Box 4.1), who are selling seed that is good enough to be certified, although strictly speaking it is not certified. She pays them in cash and changes the seed every 2 years. She removes the off types.

She does get visits from extension staff, who advise her on growing crops. She sells the seed on her own. She stores the seed in new bags and sells it in those bags. In 2009 she sold five bags of rice, nine of soybean, 15 of maize, six of cowpea and ten of sorghum, at Naira 7000 each (\$47). That is, she is selling at about half the price of certified seed, and some farmers are buying fairly large amounts of seed from her. She sells the seed to friends and neighbours, advertising only by word of mouth and her good reputation.

Her neighbour, Bello Yarima, is 52 years old and started farming in 1975. In 1990 he started selling seed. Unlike Mrs John, Mr Yarima uses certified seed as his source seed; he buys it from agents of seed companies, who have shops in the city of Kano. He buys new seed every 2 years. He has done well enough to buy 4 hectares of land in 1995, and to rent 2 more hectares in 2009. He has a special room in his house for storing seed. He only sells to farmers, never to the ADP or institutions.

He taught himself to grow vegetable seed. He asked vegetable seed growers in the market how to grow the seed, and began reproducing it himself. He measures it in empty tins of condensed milk. In 2009 he sold ten bags of maize, six of soybean, four of sorghum, five of groundnut and 30 to 40 milk tins of tomato, 30 to 40 tins of pepper and ten to 20 tins of onion.

He generally does not package his seed. Buyers bring their own bags, or he will sell them one. Vegetable seed buyers bring their own tins.

Both of these villagers are producing seed of improved varieties which are relatively recent, but which are already known in the area. In other words, the neighbouring farmers who buy this seed do so to get a supply of good seed at an affordable price, not to acquire a variety that is new to the area.

needed) at these meetings. Based on these and seed used from the year before, the Seed Council determines how much foundation seed to distribute.

The National Agricultural Seed Council gets breeder seed from national and international research institutions like IITA and AfricaRice, and distributes it to its own network of outgrowers in each of its five zones, inspects the fields, collects the harvested foundation seed, cleans it, stores it and conditions it before distributing it to the ADPs, private companies, NGOs and other small seed enterprises. The Seed Council is thus the main channel for getting new varieties from research to Nigerian seed enterprises, which is key to maintaining demand for seed.

Quality control. The Seed Council has one to three seed certification officers seconded to each ADP. They have their office in the ADP and visit fields with the ADP's seed officers. This joint quality control team inspects outgrowers' fields and the ADP pays the Council some amount per hectare per year for inspections. Fields are rejected if they are too weedy, diseased or not adequately rogued or if they have mixtures of other varieties. The seed certification officer from the Seed Council works

with the ADP seed officers, inspecting each outgrower four or five times per year. At the last visit they collect samples of harvested seed for laboratory tests.

4.3.3 Cash flow

The ADPs pay cash for the foundation seed using funds from their state governments. The state budgets are supposed to be approved in December (for the following year) although sometimes there are lags and funds may still not be released in the early months of the year. But the ADPs are usually able to pay for foundation seed when they need it, sometime between March and June.

The ADPs advance their outgrowers fertilizer, foundation seed and herbicide, deducting these costs without interest from the amount paid at harvest.

Private companies complain of unfair competition with the ADPs. There is a bit of truth to that; perhaps companies would be able to produce more OPV maize and rice, for example, if the ADPs were not producing it. But the ADPs produce no hybrid maize seed, leaving that profitable product to the companies. And there is also collaboration between companies and ADPs that do promote modern varieties, driving up demand for the companies' products. The companies and the ADPs attend about three annual training courses from the National Agricultural Seed Council on seed production, quality control and postharvest management. We cannot put an exact figure on the profitability of the ADP seed enterprises, but they do receive several subsidies, e.g. equipment inherited from donor-funded projects, and an operating budget that comes from their state government. Because the ADPs have to turn over gross receipts from seed sales to their state treasury they pay little attention to profit as a motive.



Whereas the public sector produces most of the certified rice seed in Nigeria, private companies claim they could also cover this.

When seed companies receive big orders to deliver seed to the federal government or a donor-funded project, the companies may poach seed from outgrowers of the ADP, which is generally tolerant of it, telling farmers, 'We're just glad you sold your seed.'

4.3.4 Marketing

At the end of each year the ADP assesses its seed stocks, and leftover seed is sold as grain. Seed is fumigated in storage, to kill insect pests (especially weevils), but the seed is only dusted with fungicide and insecticide just before sale.

Almost all of the ADP's seed is sold directly to farmers. The ADP announces seed sales on the radio. The prices are posted on bulletin boards in ADP office compounds

and the seed is also sold there. Hundreds of farmers enter at the appointed day and pay cash for the low-cost seed.

ADPs keep trust by maintaining reasonable quality. The certified seed is grown by experienced, trusted outgrowers. Their biggest competition is not from seed companies, but from farm-saved seed and from informal seed bought in grain markets (Box 4.2).

As an enterprise which is decades old, and has never changed its name, the ADP is well known and needs little advertising, other than the radio announcement of sales. Any other advertising is through the extension agents.

4.4 Premier Seed Nigeria

4.4.1 History

Premier Seed Ltd in Zaria is Nigeria's largest seed company. It was founded in 1989 by Chief Olusegun Obasanjo, former president of Nigeria, as Parental Line Seed Limited, which merged with the Pioneer Hi-bred Seed Company of the USA in 1990. In 1992 Pioneer bought an older company, Agricultural Seed Nigeria Limited (AgSeed), founded in 1984 by the Leventis Foundation. In 1994 Pioneer pulled out of Nigeria, no doubt frustrated by low demand for seed by smallholder farmers and the collapse of large-scale farms, as well as the competition from ADP-subsidized seed, and Pioneer's Nigerian holdings became Premier Seeds, owned by Obasanjo, who has various other agricultural companies.

From the beginning Premier specialized in hybrid maize seed; one of the first directors was an IITA maize breeder. Premier produces its own inbred lines for hybrid maize. Premier also produces seed of OPV maize, rice, soybeans, cowpeas, groundnuts, sorghum, pearl millet, cotton, okra and various local leafy vegetables, such as *tete* (*Amaranthus hybridus*), *soko* (*Celosia argentea*) and *ewedu* (*Corchorus olitorius*). Premier imports seeds of tomato, watermelon, cucumber, carrot, onion, sweet pepper, cabbage and lettuce.

In 2003 Premier obtained release of two new hybrid maize varieties, Oba Super 1 and Oba Super 2, and in 2009 it obtained release of six more (three yellow and three white), all products of its own research. Premier has registered these hybrids with the Crop Variety Registration and Release Committee, and has sole possession of the parent lines. The law protects the right of Premier against others producing their hybrids. In 2008 the varietal release committee set up a 'Stakeholders' Committee on Access and Benefit Sharing' to discuss the IPR (intellectual property rights) period to be granted to institutions or private breeders for any developed crop varieties. The period is yet to be determined but will soon be. Premier is the only seed company in Nigeria to have developed and obtained release of any crop variety.

4.4.2 Structure

Management. Premier Seed sees itself as a modern, Nigerian corporation, doing solid research and breeding hybrid maize. Premier sells seeds of other crops, but hybrid maize is 75% of its field crop seed (Table 4.3).

Some years Premier buys some foundation seed from the Seed Council, but Premier uses 3000 outgrowers to produce most of its foundation seed (including inbred lines of maize) and certified seed. After cleaning the seed, Premier stores it in 100 kg bags in a

large, clean warehouse at company headquarters. The scent of phostoxin (insecticide) in the air suggests zero tolerance for weevils. Inbred lines and foundation seed are held in a separate warehouse to avoid mixing them with certified seed. Before sale, Premier conditions the seed with fungicides and insecticides, and packages it in 2 and 5 kg bags for the smallholder market.

Premier employs 66 people. The workforce is so stable that six were part of the old AgSeed

Company. Premier participates in training with the Seed Council and also encourages its employees to seek university degrees. The managing director, the head of research and two other staff have PhD degrees and other key people are university graduates.

Infrastructure. Premier is divided into administration, accounts, marketing, production, research, processing plant and laboratory. In 2009 Premier began building a new plant at its headquarters in Zaria. The buildings are now partially complete and the equipment is yet to be installed.

Equipment. Premier is still using the original equipment of AgSeed, including a seed cleaner (three storeys tall), an equally large seed conditioner and industrial-sized warehouses, all in excellent condition after nearly 30 years of use.

Links. Premier proudly claims links with IITA, AfricaRice, CIMMYT (International Maize and Wheat Improvement Center), the ‘universities of Nigeria’ and other research institutions, although its ties with IITA are indispensable as a source of new maize lines.

The managing director of Premier is also the President of the Seed Association of Nigeria (SEEDAN), and built a small office building for them at Premier’s headquarters. The managing director also represents the Seed Association on the Seed Council’s board of directors.

Premier resents the ADPs’ cheap prices (‘the ADPs are our number one enemy’) but the ADPs also promote hybrid maize throughout Nigeria, relieving Premier of having to invest in promoting its main product. Premier enjoys subsidized training and quality control from the Seed Council, and pays little or no tax on imports. But Premier complains that the government and ADPs should do much more. Premier is working on two projects with IITA and the Bill and Melinda Gates Foundation: drought tolerant maize for Africa, and the Tropical Legume Project.

Table 4.3. Seed produced (tonnes), Premier Seed.

| | 2005 | 2006 | 2007 | 2008 |
|---------------------|-------|-------|-------|-------|
| <i>Hybrid maize</i> | 928 | 1,048 | 943 | 1,191 |
| <i>OPV maize</i> | 101 | – | 25 | 78 |
| <i>Rice</i> | 259 | 187 | 178 | 172 |
| <i>Sorghum</i> | 4 | 7 | 5 | 29 |
| <i>Soybean</i> | 14 | 34 | 12 | 63 |
| <i>Cowpea</i> | 3 | 5 | 1 | 7 |
| <i>Total</i> | 1,341 | 1,818 | 1,159 | 1,540 |



Everything in order. Premier’s tidy seed germination test.

Quality control. Premier's laboratory is clean and with just the right amount of equipment (some scales, a germination chamber). Premier's laboratory has long trays of several hundred bowls, filled with soil, where the staff work, testing the germination rate of its seed.

There are Seed Council officers seconded to Premier. But Premier Seed thinks the national seed laws need to be revised, especially to strengthen varietal protection. No one else has copies of Premier's parental maize lines, which is a form of protection against the vague plant breeder's rights in Nigeria.



Ensuring quality is not enough. Counterfeited seed is put in fake bags (e.g. the one on the right with red label), as such undermining a company's reputation.

Premier also wants to see the law strengthened to make it easier to catch seed counterfeiters and to make their penalties stiffer. Premier loathes the seed counterfeiters. These crooks make fake bags that look almost exactly like the Premier bags. Counterfeiters also make bags of other companies, including imaginary ones. The counterfeiters fill the bags with any maize grain at hand, and coat it with a powder and sew the bag shut. They even add a fake certification label. With grain selling atw 60 Naira (\$0.40) and commercial certified seed at 200 Naira a kg (\$1.33), counterfeit seed is lucrative. In 2006 Premier prosecuted one group of counterfeiters but there are others still at large.

4.4.3 Cash flow

Government resources are important, but a double-edged sword. The federal government still owes Premier for seed purchased for the Food Security Programme.

In 2009 the government promised to pay 40% of the costs of the new seed plant being built at Premier, but has still not disbursed the funds.

Like other seed companies, Premier Seed pays for everything in cash, and sells on credit, months later. While we were visiting them, the managing director got a call promising to repay a 17 million Naira credit (\$113,000). There was an obvious feeling of relief around the table.

To finish building its seed factory, Premier spent the money it was keeping in savings to pay for its inputs. After months of negotiations for a bank loan, with no success, Premier had to seek funds from the company's owner, the ex-president.

At planting time, Premier loans fertilizer and seed, at cost, on credit, to its outgrowers. It then deducts these costs from the payments made after harvest. The outgrowers almost always honour their contracts with the private companies. This is probably because many of the ADPs encourage so many outgrowers that there is a surplus of outgrowers. The ADPs cannot always buy back all of the outgrowers' harvest. In Nigeria formal seed is a buyer's market and the farmers are the ones who worry that the company or the ADP may not buy back all of their harvest, and not the other way round.

Premier does not mind competition from respectable seed companies, and is proudly aware that over the years several multinational seed companies have come to Nigeria and failed. For example, Pioneer Seed left Nigeria for several reasons – because they got tired of the competition from the ADPs, due to the challenging economic situation in Nigeria at the time.

4.4.4 Marketing

Government agencies used to take most of the certified seed, but that has recently changed. Premier currently targets smallholder farmers and international NGOs, both of whom tend to pay for their seed on time. Premier sells large volumes to the government, especially up to the end of 2006, but payments are up to several years late and have led to devastating cash shortages; 2006 was a peak year for sales, after which government programmes began buying much less seed.

In the future Premier wants to concentrate on a dedicated network of seed dealers and is grooming three dealers in each of the 774 local government areas. By 2010 Premier hopes to have over 2000 seed dealers. Premier also has its own shops in some major cities, such as Kano, which sell seed directly to farmers and to dealers. Also in Uganda medium-sized companies increasingly focus on the dealer and retailer market (Section 10.2).

Like other Nigerian seed companies, Premier does almost no advertising through the media. This is partly out of a sense of false economy, partly out of habit from the days when government could be counted on to buy seed. Premier thinks that the ADPs should do more to promote hybrid seed. Most of the seed companies in Nigeria show an amazing lack of interest in advertising. Compare this with the aggressive advertising by an enthusiastic farmers' group in The Gambia (Section 7.3). Premier does set up some 50 demonstration plots per year, and holds a field day at each one, but only nearby farmers attend, a tiny fraction of their total market.

4.5 Nagari Seed Nigeria

4.5.1 History

Nagari Seed Nigeria Ltd, in Zaria, started in 2000, but its history really began in 1984 when the current managing director of Nagari, A. Boman, was the production manager of AgSeed, which became part of Premier Seed in 1992. In 1996 Mr Boman resigned and moved to Alheri Seed, which he managed until 2000, when he resigned and joined the newly formed Nagari Seed.

The small private company registered with the Corporate Affairs Commission in September 2000. Mr Boman had also previously worked with the Kaduna state government, which loaned him a small two-room office in an old ADP building in Zaria.

That same year, the company got its first four inbred lines of parent seed from IITA to produce hybrid seed. In 2001 the National Agricultural Seed Council gave it foundation seed for OPV maize. The company came out with its first hybrid maize seed in 2004.

In 2004 Nagari Seed rented a large farm, over 80 hectares, for producing seed. But it was not feasible. They were seed experts, not farmers. So the company shifted to outgrowers.

At first, it used the Kaduna state ADP seed processing plant at Magana (rented out to Alheri Seed), but later Nagari Seed switched to the NALCO plant (formerly used by the defunct UAC Seed Ltd) in Zaria. About 95% of its business is in maize (25% hybrid in 2005, increasing to 42% in 2009), but it also sells some rice. It offers some courses for its outgrowers, through WASA (West Africa Seed Alliance), a USAID-funded project.

4.5.2 Structure

Nagari Seed has a managing director, a secretary, a production manager, a marketing manager, a factory supervisor and an accounts person. It has 335 outgrowers, but does not use them all every year. In Nigeria the supply of outgrowers exceeds demand. In 2010 the company used 220 outgrowers, because in 2009 ‘the market was not encouraging, so this year we feel we need to cut down production’. The Seed Council has an officer assigned to Nagari Seed (whose salary and operating expenses are paid by the Council), who inspects seed in outgrowers’ fields and in the factory. The company stores its seed in a rented storehouse.

It buys its seed bags from a manufacturer in Kaduna (who must be paid in advance). Two kg bags are the most popular for this smallholder market, but Nagari Seed also makes 5 kg bags.

Mr Boman feels that government policy is inconsistent. He would like fertilizer prices to be subsidized, so farmers would use more and get bigger yield increases from hybrid maize. Actually, fertilizer is subsidized in Nigeria, but because of distribution problems many farmers never get it. Mr Boman would also like the government to stimulate seed demand more. He knew about Premier’s case with the seed counterfeiters and sympathizes with Premier. Fake seed hurts everyone producing certified seed.

4.5.3 Cash flow

The company advances foundation seed and fertilizer to its outgrowers. If it has the money, it pays the outgrowers 40% after cleaning their seed. ‘We only pay for clean seed. We need to see how much it is first before we pay.’ It pays the balance after processing. The price is agreed before planting. This seems risky, but it works most of the time in Nigeria; because there are so many outgrowers, the seed companies have the upper hand. Sometimes outgrowers need an advance to de-tassel the female parent line.

Nagari Seed has never sought a loan. Banks require collateral, which it doesn’t have. At the end of every year it saves money in a bank account, to buy inputs for the outgrowers the following season and ‘from our sales we pay the farmers’.

4.5.4 Marketing

The company markets through seed dealers, most of whom also sell agro-chemicals, but the bulk of sales is to individual farmers (Table 4.4). It also sells some seed through the ADPs. The seed dealers are unreliable customers, who take Nagari's seed on consignment and do not pay until they make a sale. Even then, some keep the money to run their business 'and we start fighting. One dealer still has N 400,000 (\$2670) of my money.' At the end of the season, some seed dealers want to keep the seed through the dry season, but after that the seed is often weevily and the germination rate is low. Since the dealer never paid for the seed, they simply return it to Nagari Seed, which salvages such seed by selling it to cattle ranchers to plant forage maize. In spite of troubles with the dealers, the company sells 80 to 85% of its seed through them, to avoid the government, 'which ties down your money for the next 5 years'.

Nagari Seed has some slots on the radio, through the ADP and the NAERLS, a national extension service, headquartered in Zaria. The NAERLS has two radio stations and allows the company to air spots at a low cost. Help like this from federal government agencies allows seed companies to survive in the face of subsidized seed production by the ADPs, which are state government agencies, not federal.

Table 4.4. Clients of Nagari Seed.

| | 2005 | 2009 | 2015 (predicted) |
|------------------------------|------|------|------------------|
| <i>Individual farmers</i> | 2 | 1 | 1 |
| <i>NGOs</i> | 1 | 2 | 2 |
| <i>Farmers' cooperatives</i> | 3 | 3 | 2 |
| <i>Agro-dealers</i> | 4 | 4 | 3 |
| <i>Government</i> | – | – | – |

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



Various seed companies are clustered around Zaria, where the government allows them to air spots on its state radio and TV at low cost.

4.6 Terratiga

4.6.1 History

Terratiga Ltd was formed in 2000, based in Kwanar Diwaki district, 16 km from Kano. Their main business is producing irrigated vegetables, herbs and spices for

upmarket hotels and supermarkets in Abuja and Lagos. Vegetables were Terratiga's original business. Seed is a much smaller activity, which started several years later.

4.6.2 Structure

Terratiga rents 116 hectares from individual farmers for seed production, of which it uses 8 hectares for irrigated rice, 2 hectares irrigated land for groundnut seed and 100 hectares for upland (unirrigated) sorghum seed.

Terratiga gets its foundation seed from the Institute for Agricultural Research, Zaria, grows its own certified sorghum seed, supervised by the NASC man in Kano, and sells it to farmers, who produce high-quality sorghum for Nigerian Brewery, to make maltina (a sweet, non-alcoholic brew). The growers are connected to the USAID MARKETS project. Terratiga advances the farmers the seed and provides technical support for farmers to ensure grain quality.

One of the strange things about Terratiga is that they have no seed plant in Kano. They truck their seed to their company's seed factory in Lagos, 1000 km away, and then haul it back to Kano to distribute it to the farmers. This does allow Terratiga to avoid buying seed processing equipment, although it adds to transportation costs.

4.6.3 Cash flow

Terratiga is a subsidiary of AfriAgri Products, a trading company dealing in cocoa, coffee, sesame seed, ginger, hibiscus and other products. AfriAgri Products gets bank loans, and makes funds available to Terratiga to pay for inputs and to pay farmers.

The cost of the seed advanced to the farmers is deducted at harvest. The company buys fertilizer in bulk and makes it available to farmers in cash, at cost. This ensures that the farmers have access to good fertilizer, and avoids problems with repayment later. Farmers bring the harvest to Terratiga's factory near Kano and are paid a week later.



Terratiga produces mainly certified seed for farmers who supply high-quality sorghum for Nigerian Brewery.

4.6.4 Marketing

The sorghum farmers are a niche market created by the MARKETS project. Rice and groundnut seed is produced by contract for special customers. Otherwise, Terratiga does little seed marketing.

4.7 The Seed Project Company

4.7.1 History

The Seed Project Company Ltd never was a project, but was started as a private company in Kano in 2005 by two Nigerians, Lawan Gwadabe and Stella Thomas. Mr Gwadabe had always been in seeds, first as the director of the Research Department for the ADP in Kano and then as the chargé of commercial crops for the Ministry of Agriculture. When he left the Ministry he wanted to start a seed company. With just 70,000 Naira (\$467) Gwadabe and Thomas began importing seed. They rented an office on the second floor of a commercial building. They still work in the same tidy, well-lit, two-room office.

The Seed Project soon began working with rice, cowpea and maize. They bought foundation seed from the Institute for Agricultural Research in Zaria and looked for outgrowers that Mr Gwadabe had known from his days at the ADP. Seed Project specializes in high yielding open-pollinated maize, with yields as much as 5 tonnes per hectare. Gwadabe and Thomas think OPV maize may open the way to selling hybrids in the future (see Section 10.2 for a similar line of thought by one of Uganda's leading seed companies, which, 15 years after its establishment, is producing over 2500 tonnes of seed). The Seed Project imports vegetable seeds by air, mainly from Italy and The Netherlands. The Seed Project claims that importing vegetable seed is still their biggest activity, although they are rapidly expanding into seed production (Table 4.5).

The Seed Project soon hired other staff, including 11 university graduates. The managers say that good short courses are unavailable, and that they do most of their staff training themselves. Their first few years were so successful they bought a 146-acre (58-hectare) farm to grow their own seed.

4.7.2 Structure

Management. The managers of Seed Project say they have many ideas they could put in

Table 4.5. Certified seed produced (tonnes), Seed Project.

| | 2005 | 2006 | 2007 | 2008 | 2009 |
|---------------------|------|------|------|------|------|
| <i>Maize OPV</i> | 70 | 100 | 250 | 280 | 400 |
| <i>Rice</i> | 20 | 40 | 100 | 70 | 80 |
| <i>Soybean</i> | – | – | – | 5 | 60 |
| <i>Cowpea</i> | 0.2 | 0.5 | 5 | 2 | 15 |
| <i>Sesame</i> | – | – | – | 5 | 20 |
| <i>Carrot</i> | – | – | – | – | 8 |
| <i>Groundnut</i> | 1 | 0.5 | 2 | 5 | 7 |
| <i>Watermelon</i> | – | – | – | – | 3 |
| <i>Onion</i> | – | – | – | – | 3 |
| <i>Tomato</i> | – | – | – | – | 1.5 |
| <i>Cucumber</i> | – | – | – | – | 1 |
| <i>Sweet pepper</i> | – | – | – | – | 0.7 |
| <i>Okra</i> | – | – | – | – | 0.2 |
| <i>Total</i> | 91 | 141 | 357 | 367 | 599 |

place if they only had more money, but they are happy to keep expanding on their own capital. 'Our goal was to reach a turnover of 150 million Naira this last year. We reached 143 million, so we were only off by seven.' Many small firms would be delighted to turn over nearly a million dollars.

There are 23 permanent staff members in three departments: marketing (seven), agronomy (four), which includes processing, production and research, and the rest in operations (office assistant, cashier, accountant, storekeeper, two drivers and four security guards). There are 50 day labourers, who work almost every day on the farm or in the factory.

The Seed Project imports watermelon seed from Senegal. They airfreight their other vegetable seed from Europe, often once a week, to make sure it is fresh. Seed Project has a person who clears the seed with customs in Lagos and puts it on the next flight to Kano. Most of the carrots in Kano are grown with seed imported by the Project.

Land. The 58-hectare seed farm includes 12 acres (4.8 hectares) of irrigated land, which the company plans to use soon to produce tomato seed. They are already producing onion seed, as well as maize and pearl millet, on the 58 hectares.

Outgrowers. The Seed Project uses 50 to 100 outgrowers to grow some 300 tonnes of maize (besides the 100 tonnes grown on the Seed Project farm) and 150 tonnes of rice seed. The Seed Project buys OPV maize seed from its outgrowers at 20% above the market price for grain. They are one of the few companies that pay flexible prices; most set a price at planting time. But, no matter how a company reaches a price, if it is high, farmers will be tempted to bring in grain from other fields to sell as seed. However, the certification officers estimate yield during inspection, so they know how much harvest to expect, to keep outgrowers honest.

Infrastructure. The Seed Project does not have a seed factory, but rents from the Kano ADP. The Project saves money by not treating most of its seed, claiming that the dusting of pesticides actually costs more than the seed.



Seed Project Ltd first imported and sold vegetable seed. It soon began growing rice, cowpea and maize seed and since 2009 expanded to vegetable seed.

4.7.3 Cash flow

About 30% of its business is with the government and 70% is with private farmers, because 'The government doesn't pay. You sell and you wait. That's why other companies are crumbling.'

Sometimes the Seed Project loans outgrowers money to weed their crops, but it tries to avoid loaning them too much. Mr Gwadabe has known some outgrowers for

many years. In the first year the outgrowers basically loaned money to the Seed Project, planting a crop on their own, even paying for the seed, just on the promise of buy-back later. ‘The farmers trust us.’

Mr Gwadabe says he manages finances by sheer discipline. ‘You make a plan and you reduce your overheads.’ Seed Project is prospering, but still owns very little, just one storeroom and the farm. They rent two other storerooms and everything else. They have never taken out a bank loan because ‘you waste so much energy looking for it’. The interest is 24%, but with fees it ends up being 30%. Unless you earn 50% on your investment you end up working for the bank.’

4.7.4 Marketing

Seed Project has increasingly focused on reaching out to individual farmers and agro-dealers (Table 4.6). The mobile phone really helps. Seed Project puts its mobile phone numbers on all its packages: a trust-building, customer-friendly innovation. ‘In the remotest villages they call with any problems,’ and if the company cannot help over the phone, they send one of their own extension agents to visit them. It is one of the only seed companies that has extension agents.

The Seed Project gives credit to its agro-dealers, and some pay half in advance. ‘You need to have a good strategy for collecting your money, and know how much credit to give them. They must pay off before taking more goods. After all, you prefer your goods to be with an agro-dealer than in your storeroom.’ The strategy is working, because over 98% of the agro-dealers pay back their loans, a record for Nigeria. Seed Project has less than 4 million Naira (\$26,600) in outstanding loans.

The Seed Project organizes field days for agro-dealers in three places in the state of Kano where they have planted their products. Project representatives also attend trade fairs to display their products.

The company also trains outgrowers and community organizations. Seed Project extension agents visit the local chapters (local, community-based groups) of RIFAN (Rice Farmers Association of Nigeria) one by one and give them training on planting density and fertilizer rates. They show farmers how to use a rope to calculate the land area and to figure out the amount of seed and fertilizer to use.

One year the Seed Project imported onion seed with a poor germination rate. Farmers complained and the company replaced the seed. It cost 1 million Naira (\$6600) but it was worth it to keep their customers’ trust. In another case, the Seed Project imported tomato seed from Top Harvest, an obscure Dutch company. Farmers and the ADP complained that the seed was of mixed varieties, so the Seed Project stopped importing that brand of seed.

Table 4.6. Clients of Seed Project.

| | 2005 | 2009 | 2015 (predicted) |
|--------------------------------|------|------|---------------------|
| <i>Agro-dealers</i> | – | 1 | 2 |
| <i>Individual farmers</i> | 3 | 2 | 1 |
| <i>Government</i> | 1 | 3 | 5 |
| <i>Groups and Cooperatives</i> | 2 | 4 | 3 |
| <i>Projects and NGOs</i> | – | – | 4 |

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

4.8 Maslaha Seeds Nigeria

4.8.1 History

In Hausa, Maslaha means ‘to ease, or to come to someone’s aid’. Maslaha Seeds Ltd was started in Gusau, north-west Nigeria, in 2006 by a former senator, who had been a large cotton and grain grower since the 1970s. The senator had long been interested in trying new varieties and often visited research institutes looking for good seed. The senator and several other business people support Maslaha Seeds and sit on the board of directors. It registered with the Corporate Affairs Commission in 2007.

Maslaha Seeds hired a person from IITA as head of production and turned one of the senator’s large farms into a seed farm. The first problem was finding a place to process the seed. The Seed Council suggested that it used their seed factory in Zaria, which required some minor repairs, which Maslaha fixed.

The first year, 2006, Maslaha Seeds produced over 600 tonnes of mostly rice and hybrid maize seed (Table 4.7).

It was ‘hell’ hauling hundreds of tonnes of seed from the farm 100 km to Gusau, then making the 4-hour trip to Zaria to process the seed and then bring it back. But results from the first year were encouraging; the company sold 80% of the seed (mostly hybrid maize and relatively new rice varieties like Nerica 1), and decided to buy its own seed processing plant. It chose a Chinese brand, which was less expensive than European makes. Chinese engineers came to the site to help install it and Maslaha has been satisfied with the machinery.

The second year, 2007, the company was glad to have reduced transportation costs, and more than doubled its output, to 1500 tonnes of seed. It began to produce significant amounts of pearl millet for the first time, in response to demand from farmers. That year it also started growing seed with outgrowers, having learned from the first year that it could not grow enough seed itself. Many of the outgrowers were farmers that the senator knew from his days in politics. The third year, Maslaha Seeds began conducting research, testing new varieties on its own farm.

Table 4.7. Seed produced (tonnes), Maslaha Seeds.

| | 2006 | 2007 | 2008 | 2009 |
|---------------------|------|-------|-------|-------|
| <i>Hybrid maize</i> | 196 | 446 | 540 | 784 |
| <i>OPV maize</i> | 135 | 418 | 255 | 959 |
| <i>Rice</i> | 255 | 469 | 412 | 487 |
| <i>Sorghum</i> | 2 | 6 | 149 | 369 |
| <i>Pearl millet</i> | 4 | 90 | 173 | 257 |
| <i>Soybean</i> | 35 | 53 | 87 | 85 |
| <i>Cowpea</i> | 3 | 51 | 1 | 45 |
| <i>Groundnut</i> | 2 | 3 | 0 | 5 |
| <i>Total</i> | 632 | 1,536 | 1,618 | 2,991 |

4.8.2 Structure

Management. Maslaha Seeds now has 35 employees, in four departments: operations (production, processing and storage), research, finance and accounts, and marketing.

It has an optimistic vision of Nigeria and the future. It figures that Nigeria has 32 million hectares of cropland, requiring hundreds of thousands of tonnes of seed, 100 times the current output of the formal sector. It has a 5-year plan to grow, package and sell more seed. By 2012 it wants to produce 7000 tonnes of seed, about triple its current output. It also wants to start importing vegetable seeds.

Land. Maslaha Seeds uses one of the senator's farms, at first for seed production, but now just for research.

Infrastructure. In 2009, it began building four new large seed plants, with the federal government contributing 40% of the cost under public-private partnership. The seed factory in Katsina (including warehouses and offices) is now being roofed (February 2010), as is the one in Gwagwalada, near Abuja in central Nigeria: from there Maslaha Seeds hopes to serve southern Nigeria.

In 2008 Maslaha had less than 100 outgrowers, but Maslaha is expanding so rapidly that it now has nearly 1000, and in the future will only work with fairly large outgrowers, those who can produce seed from at least 5 hectares, in order to lower supervision and transaction costs.

At the beginning of the season Maslaha Seeds signs a contract with each outgrower, specifying the quantity of fertilizer to be used. It gives them the parent lines (for hybrid maize) or the foundation seed for other crops. After harvest the farmers bring the seed to a collection point, where Maslaha deducts their loan and pays them the balance.

Quality control. The National Agricultural Seed Council assigned an inspector to work with Maslaha Seeds, as with the companies described in previous sections.

The Seed Council helps register and train outgrowers. New employees are trained on the job.

Linkages and learning. Maslaha has links with AfricaRice, IITA, CIMMYT, AGRA and other research organizations. In late 2009 the senator and the manager of the company went to India for a trade fair, and visited seed companies and researchers at ICRISAT, where they learned about high yielding hybrid pearl millet, which Maslaha Seeds wants to try in Nigeria.



Maslaha's affordable and functional Chinese seed factory.

4.8.3 Cash flow

Maslaha Seeds has obtained one loan, guaranteed by the UNDP at 8% interest, and is also interested in raising private capital. In most African countries, agricultural entrepreneurs struggle to obtain loans at an acceptable interest rate. Mali is one of the few countries where the government facilitated the creation of agricultural loans

at 8–12% interest rate, the interest being lowest for farmers’ associations and cooperatives (Sections 5.1.2 and 5.3.3). In Nigeria’s neighbouring country, Cameroon, farmer seed producer groups reduce financial hardship by avoiding loans and by setting up revolving funds (Section 3.1.4).

4.8.4 Marketing

Maslaha has sold seed to the government, even though their slow payment can ‘put you down on your knees’. Maslaha realizes that in the future they have to sell more to farmers (Table 4.8). They have agro-dealers, and also sell to farmers. Dealers ask for seed on credit. ‘If you ask them to pay 50% in advance, they won’t take the seed.’

In their second year Maslaha sold 50,000 Naira (\$333) worth of seed to farmers, and was encouraged that they came back the next year to buy 2 million Naira (\$13,300) worth. ‘With their own money!’ Maslaha seems to have the right mix of connections (political and research), land, qualified management and capital.

Table 4.8. Clients of Maslaha Seeds.

| | 2006 | 2009 | 2015 (predicted) |
|--------------------------------|------|------|---------------------|
| <i>Government</i> | 1 | 1 | 5 |
| <i>Individual farmers</i> | 2 | 2 | 1 |
| <i>Agro-dealers</i> | – | 3 | 3 |
| <i>Projects and NGOs</i> | – | 4 | 4 |
| <i>Groups and cooperatives</i> | – | 5 | 2 |

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

4.9 Challenges and Strengths of the Seed Enterprises

Small-scale and low capacity utilization. At the national level, Nigerian farmers are planting modern varieties, but saving their own seed whenever possible. The use of formal certified seed (including hybrids) is relatively low in Nigeria. All of the seed companies are small (none sell more than 2000 tonnes per year).

Varietal mixtures. There have been several complaints that seed, especially lowland rice, is mixed with other varieties, even weed seed (wild rice). For example, in 2009, the USAID Emergency Rice Initiative commissioned 150 tonnes of lowland rice seed from three Nigerian companies. The farmers who received this seed later complained that the seed was mixed with other varieties and with wild rice. Lowland rice is especially susceptible to this problem, because it is grown in small pockets of wetland, year after year. So seed banks build up in the soil. To get a pure crop of only one variety, one would have to either grow just one variety for several years in a row, or spray herbicides at least twice before planting, until the seed in the soil was exhausted.

Companies do take a few steps to keep outgrowers honest. First, they retrieve the seeds as soon as possible after harvest from the outgrowers into the company’s store. Second, they report the offending outgrowers to their community leader. And, third, if outgrowers continue to default they are blacklisted.

Foundation seed. There are some complaints from companies that foundation seed is of mixed varieties; sometimes even breeder seed is mixed. One company said

it received such mixed foundation seed and had to rogue it nine times to keep the variety pure.

Equipment. Most of the enterprises (especially the ADPs) have ageing equipment.

Counterfeiters damage the whole seed industry, not just the companies targeted.

Plant breeders' rights need to be clarified.

Cash flow is a problem that all enterprises have to solve. The ADPs do not have a revolving fund for buying seed. Each year they must seek fresh funds from the state government. After selling seed at the planting season the receipts go back to the state treasury. Fortunately fresh money is usually available but there are occasional problems. For example, Ondo state was not able to grow rice seed in 2009 because funds were distributed too late.

Most companies find it almost impossible to get bank loans, and must save money to buy inputs and pay farmers. A few companies have owners with deep pockets.

Terratiga is able to manage cash flow by growing seed as a fraction of its activities, by growing it in the dry season and by belonging to a larger company with access to bank credit.

Alheri does get bank loans, although at a high cost. Nagari Seed has been able to avoid capital expense. They use an old, cramped office for free, and they rent their storage and processing facilities. Their only expenses are for labour, seed, fertilizer and bags.

The ADPs work because they are stable and local. The staff have been at their jobs for years. They are either from the state or have spent their adult lives there. They speak the local language(s), know the local people, identify with them, eat with them, pray with them and communicate. The state funds their seed activities every year both to boost the agricultural productivity of the state and to keep in the good graces of the farmers.

Through military and civil governments, peace and war, political dramas and the shifting support of international donors, for 35 years the ADPs have managed to continue selling seed at affordable prices to the farmers.

Businesslike. At Premier Seed everything from the offices to the factory floor is clean and in good working order. The machinery hums, the laboratory is appropriately used and everyone in the company is quietly at work. Terratiga, Maslaha and the Seed Project have a similar feel of competence and craftsmanship.

Marketing. This is the weak link. Nigerian seed experts are exasperated with companies that do not advertise, pay little or no attention to customer demand and expect the government to promote their seed. The seed companies do not always relate well with their agro-dealers, who complain of seed quality problems with certified seed (e.g. many immature or broken seeds and varietal mixture and mislabelling). The trend is for companies to try harder to make direct sales to farmers, with less interest in selling through agro-dealers.

The long seed chain. This starts when breeder seed leaves research institutes, goes to the Seed Council, which parcels it out to outgrowers, who produce foundation seed, send it back to the Council, which then distributes it to seed enterprises, who send it to more outgrowers, who send it back to the seed enterprises, who distribute it (often indirectly) to farmers. It is remarkable that such a long supply chain works at all. One is reminded of the old line about stunts on television (don't try this at home). We hesitate to recommend a chain with so many links to any other country;

yet, for the record, it is working in Nigeria. And it is a wonder that seed companies can even survive under competition with ADP-subsidized seed and a debt load created by government seed procurement programmes. But they do.

Among the various factors, successful seed enterprises all seem to: keep their overheads low; have a good product; be honest with outgrowers; and advertise their product. Nigeria's private seed companies are clustered around key research centres and are locked in a rivalry with the ADPs that has lasted for over 30 years. The seed system wasn't designed to work this way, but it is working.

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