Making fertiliser markets work for the poor in Nigeria

A PrOpCom case study
“We need fertilisers and other farming inputs to boost yield."

“I have heard from neighbours that fertiliser is very good and I want to start using it too, but I am constrained by finance.”

—Farmers in Chanchaga village, Niger state, Nigeria

In advanced and competitive markets, commercial companies develop elaborate marketing plans that segment their customer base. The companies then approach target customers with products and services to match their particular needs. In Nigeria, however, poor farmers were never targeted as end customers of fertiliser companies’ sales efforts, in essence disenfranchising them from the market. Ill-aligned incentives among actors in the fertiliser market to serve these customers were created by the subsidies, direct procurement and distribution provided by the Nigerian government. As a result, poor farmers lacked access to fertiliser; those who had access struggled to pay the price tag for a 50-kg bag; and those who could buy it often didn’t know how to use it properly.

From 2008–2011 PrOpCom facilitated interventions aimed at improving the commercial marketing and distribution of fertiliser to the poor in Nigeria. When PrOpCom first contemplated whether or not to intervene in the fertiliser market, industry experts cautioned against it, warning that fertiliser in Nigeria is a politically arrested system with little or no private market potential. However, PrOpCom worked with two large fertiliser companies to change the status quo. By providing advice on how to target a previously underserved market segment and redesign the product to meet that segment’s needs, PrOpCom helped these companies set up ‘last mile’ distribution networks and training to reach the poor, and more importantly, to value the poor as a relevant customer base.

This case study was written near the end of PrOpCom’s three-year intervention in the fertiliser market, and is accurate as of 30th June 2011. The pilot stimulated the commercial supply of over 2,000 metric tons of fertiliser in small packs to 570,000 farmers in 25 states across Nigeria. These farmers also received training on appropriate application techniques of agricultural inputs from a dedicated network of rural sales agents.

About PrOpCom

PrOpCom (Promoting Pro-Poor Opportunities in Commodity and Service Markets) is an innovative programme funded by the UK’s Department for International Development (DFID) to facilitate functionality and efficiency of Nigerian commodity and service markets in such a way as to assure these markets benefit the poor. The programme is mandated by DFID to employ the market development (M4P) approach. This approach has allowed programme staff the conceptual and operational space to design and implement pro-poor interventions that embed change in local systems, and are crucially market player (or stakeholder) -owned and -led. Using a facilitation model that adheres to the principles of sustainability, M4P programmes are oriented toward more than simply delivering impact for the lifetime of the programme. They instead aim to ensure that programme outcomes result in the ability for outreach to expand, and impact to deepen, even when programme activities have ended.

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1. Why are fertiliser markets relevant for the poor?

Nigeria has a land area of 91 million hectares (ha), of which 86% (or 78.5 million ha) is cultivable; of this cultivable land, only about 33 million ha are currently being utilised for farming activities. However, in the World Bank’s World Development Report 2008, Nigeria is classified as an “agriculture-based country”, due to the significant contribution agriculture makes to Nigeria’s gross domestic product (GDP)—over 40%—and the high proportion (roughly 55%) of rural poor to total poor (2002). The significance of this classification for Nigeria is that improvement of the country’s agricultural productivity holds enormous potential to reduce poverty. Why is this so?

1.1. Agriculture and poverty reduction

Agricultural sector growth has been shown to be typically 2–3 times more effective in reducing poverty than growth in other sectors, due to two factors: (1) Income. Given the importance of agricultural output to Nigeria’s GDP, the sizeable number of poor living in rural areas, and the proportion of the labour force—70%—employed in the sector, agriculture remains a significant source of income for the poor, and the nation overall. (2) Food prices. Poor households spend the majority of their income on food—sometimes up to three-quarters of a family’s budget. Higher food prices can translate into less food for the family, reduced nutrition, and overall deleterious consequences on the poor’s health.

Box 1: But aren’t surplus agricultural outputs harmful to farmers?

In the development of Western economies, increases in agricultural productivity led to food surpluses, which then reduced food prices. While low food prices reduce the income farmers receive per bag of produce, the yield increases result in higher volumes of produce sold, and hence greater profits. Furthermore, rises in agricultural productivity and low food prices allow for other social changes that foster greater economic development, including the diversification and specialisation of family labour into other income generating areas, social mobility and urbanisation.

Stagnant yields

If agricultural growth has so much potential to relieve poverty, what prevents this growth from taking place? Nigeria’s 16 million smallholder farm families own an average of 1–2 ha of land each. With such small plots of land, the harvest yields and corresponding profits become vital to the livelihood of farmers, their families and the labourers they hire. Most of Nigeria’s farmers have inherited the traditional low input-low output farming methods that have been in use for countless generations. In farms where they have learned new techniques, many have not been able to apply their knowledge appropriately due to poor access to agricultural inputs such as improved seed varieties and fertiliser. The majority of Nigerian farmers plant their annual crops using saved seeds from previous harvests.

While the agricultural productivity of other developing countries has increased, yields across most of Sub-Saharan Africa have remained stagnant (Figure 1). Even within Africa the differences are pronounced: cereal yields in South Africa average 4.4 metric tons per ha (MT/ha), whereas Nigeria’s average cereal yield hovers around 1.6 MT/ha. While Nigeria’s crop outputs from small farm plots remain low, costs of farm labour continue to rise as youth labour migrates to the cities in search of better job opportunities and overall prosperity. As such, the majority of Nigerian farmers are finding it difficult to make ends meet.
Poor soil conditions

One reason for the poor yields in Nigeria is the condition of the soil, which is deficient in nutrients such as nitrogen, phosphorus, potassium, and sulphur, as well as the micronutrients that support healthy crops. A nutrient-deficient and improperly prepared soil-bed leads to stunted plant growth and makes crops more vulnerable to disease. Fertiliser use is one way to combat this problem and improve yields, but Nigeria's fertiliser use is among the lowest in the world at 5–10 kg/ha, as compared to roughly 50 kg/ha in South Africa. Looking even further to Brazil, farmers use an average of 165 kg/ha. This persistent lack of fertiliser use in Nigeria means agricultural soils are being continuously depleted of precious nutrients. For example, in the period from 2002–2004, Nigerian soils were measured as losing 30–60 kg/ha of nutrients due to insufficient soil repletion. Increasing fertiliser use is therefore important for boosting farmers’ productivity—and incomes.

Traditionally, Nigeria's smallholders have responded to the deteriorating soil conditions by burning bushes and scattering the ashes over their croplands, thus adding sulphur and other nutrients to the soil. Alternatively, farmers use manure or other organic waste if they have it, or purchase whichever inorganic fertilisers they find in the market (e.g. NPK or urea). However, the small quantities of fertiliser used are typically incorrect applied, leading to further complications and, in some cases, even destruction of crops. Generally speaking, farmers are not aware of correct fertiliser dosages, nor do they understand the effects of different types of fertiliser mixes on soil productivity. The result is erratic and dissatisfactory crop yields.

1.2. What are the potential benefits of fertiliser use to farmers?

By increasing the use and correct application of fertiliser, poor farmers surveyed in Nigeria were able to improve their yields by approximately 30–55%. In turn, they benefited economically (making an additional 30–40% profit) through the sale of greater harvest volumes. The Projects Coordinating Unit of Nigeria’s Federal Ministry of Agriculture and Rural Development conducted a cost-benefit analysis of maize farm budgets between a smallholder farm that used no fertiliser (Farm 1) and a smallholder farm that used a moderate amount of fertiliser (Farm 2). Farm 1 showed a benefit-to-cost ratio of 1.21, whereas Farm 2 showed an increased benefit-to-cost ratio of 1.52 with the addition of just ₦6,080 (£24.74) worth of fertiliser. This meant that the net profit of Farm 2 was higher than that of Farm 1 by ₦8,845 (£35.98) per ha. Other smallholder crops were shown to have even higher benefit-to-cost ratios with moderate application of fertiliser: millet (2.87), rice (1.61), cassava (2.66) and yam (3.85).

Increased fertiliser use has the potential to create scaled benefits to both farmers and fertiliser companies. Of course, the scaled benefits are only applicable for farmers when coupled with proper application and farming techniques. For example, a study conducted in three West African countries (Burkina Faso, Mali and Niger) showed that when farmers used fertiliser ‘micro-dosing’ techniques, their grain yields of millet and sorghum increased by 43%–120%.

2. What is the nature of the fertiliser market problem?

While farmers in Nigeria recognise the potential of fertiliser to improve theircrop yields and profits, actual fertiliser use remains low. Why are farmers not using more fertiliser? The answer lies in the complex misalignment of incentives and needs of farmers, fertiliser companies and distributors, and government actors.

2.1. The farmers’ perspective

In one northern state, among farmers surveyed who were not using fertiliser, the three most commonly cited reasons for non-use included: lack of money (79.5%), lack of access (19%) and lack of knowledge on proper application (1.5%).

- **Lack of funds.** Fertilisers are commonly sold in 50-kg bags for ₦3,500–5,500 (£14–22). Most smallholders earn an average of ₦300,000–50,000 from their annual farming activities (or £0.33–0.55 per day) and are unable to save much. The investment for a 50-kg bag of fertiliser is too high for these smallholders, hence the disincentive for its use.

- **Lack of access to supply.** Smallholders have problems accessing fertiliser supply in Nigeria. Publicly subsidised fertiliser supplies oftentimes arrive late, after the planting season has passed. An internal study conducted by the International Fertilizer Development Center (IFDC) in 2010 showed over 90% of farmers surveyed in three northern states agreed with the statement that getting fertiliser in time for the planting season is more important than the price paid for it. Between 67–99% of those farmers also agreed that you need a “godfather” to access fertiliser if the local government is in charge of distribution. Retail markets for fertiliser are located in urban centres, far from the rural farming communities, thereby significantly increasing acquisition costs for farmers.

- **Ineffective fertiliser application.** Many farmers lack knowledge on correct dosages and application techniques. According to the IFDC, approximately 50% of farmers apply fertiliser using skilled micro-dosage techniques, whereas the other half broadcast. In the south, the dense tropical vegetation provides farmers with greater organic fertiliser sources than in the arid regions of the north. The areas surrounding Kano and Kaduna therefore serve as the traditional hubs for inorganic fertiliser production and sale. Here farmers tend on the whole to be savvier about the need for chemical fertiliser than their counterparts in the south. However, as the improper use of chemical fertilisers
can lead to lower yields or even crop destruction, farmers in both regions tend to be wary of its use and are keen for reliable information on how to avoid its misuse. Over 90% of farmers surveyed in three northern states\textsuperscript{14} agreed with the statement that they need more training on how to use fertiliser; but widespread formal knowledge services for farmers are largely lacking.

2.2. The fertiliser market gap

Digging deeper into the cause of farmers’ low rate of fertiliser usage, the fertiliser market does not adequately meet farmers’ demand. In fact, the total potential demand for fertiliser among farmers in Nigeria is currently estimated at 3.5 million MT per year.\textsuperscript{13} However, supply of fertiliser to farmers is estimated at only a fraction of this potential (0.6 million MT in 2010, or 17% of demand),\textsuperscript{16} leaving a market gap of 2.9 million MT per year. Why are fertiliser companies not taking advantage of this market opportunity?

The Federal Government of Nigeria (FGN), recognising poor farmers’ lack of funds and corresponding low fertiliser use, procures and subsidises fertiliser for distribution to Nigeria’s rural areas. Fertiliser companies, aware of this public procurement policy, focus their sales efforts on a single buyer—the government—effectively ignoring the market gap mentioned above. For example, in 2008, TAK Agro, the owner of the largest blending plant in Nigeria, sold roughly 20% of its supply on the open market and 80% to the government.\textsuperscript{17} In 2009, Notore, also a leading fertiliser company, sold only 16% of its supply through retail markets in Nigeria, and exported another 6% to Cameroon. The remaining 78% was sold to the government. With such an easy, one-stop buyer of large volumes at hand, these major suppliers have jostled for public contracts, thereby avoiding the relative hassle of developing relationships with multiple distributors who sell to the retail market.

Why are other entrepreneurs not competing to enter the market for private sales? The Nigerian fertiliser market comprises about five large companies that produce and/or import fertiliser, plus another roughly 25 companies that opportunistically import fertiliser to fulfil government contracts as part of a diversified product portfolio. New entrants into the private fertiliser market would face significant barriers to entry. First, given the limited production facilities in Nigeria, a company seeking to import a vessel of fertiliser faces a 10,000–30,000 MT investment, as opposed to investing in only a 30 MT truckload were supply available locally. For such a costly investment, companies prefer the security of a government contract to ensure profit. Second, anecdotes exist of wealthy individuals who looked to import and distribute on the private market receiving death threats—essentially creating a system that resembles a trade cartel.

Box 2: Collecting market data in Nigeria.

A key challenge to doing business or running a programme in Nigeria is getting reliable baseline information. To illustrate the difficulty, consider the following data discrepancies: recently, the International Food Policy Research Institute (IFPRI) cited fertiliser use at 10–15 kg/ha, which puts total fertiliser use at 0.33–0.5 million MT,\textsuperscript{18} whereas the World Bank cited consumption at 2.4 kg/ha (2007) for a total market of 0.19 MT. The Federal Ministry of Agriculture and Rural Development in 2010 released purchase orders of fertiliser at 0.9 million MT, and the Fertilizer Producers and Suppliers Association of Nigeria (FEPSAN) cites current consumption of 0.6 million MT, or 17% of potential market demand. Questioning data provided by stakeholders and official sources is a key tool of the seasoned practitioner in Nigeria. One must attempt to understand the stakeholder’s perceived relationship to the programme and evaluate whether data has been under- or over-reported through cross-checking with alternative sources and looking for physical proof.

2.3. Getting to the root of the problem: nobody serves the poor

The root cause of farmers’ inadequate fertiliser use lies in the disenfranchisement of poor farmers from the fertiliser market. There is a fundamental lack of relationship between the fertiliser suppliers (both public and private) and the farmers who constitute the end-user demand (Figure 2).

In an ineffective environment, the actors—(1) government, (2) service providers and (3) citizens—enjoy clarity of roles and responsibilities, interacting and transacting with one another in a way that not only ensures an equitable flow of resources and information, but also balances reliance on one another with accountability to one another. The combination of reliance plus accountability creates a secure relationship with transactional boundaries. In Nigeria, however, poor citizens have become completely side-lined from the market. The government, service providers and business agents closely serve each other’s needs in transactions based on informal relationships. The government has allocated official budgets for fertiliser subsidies to ‘formally’ support the poor people, but there are more gaps in this relationship than substantive support.

Farmers’ disenfranchisement from the fertiliser market is caused by the inability of three market-supporting functions to serve them: (1) public and private distribution systems, (2) fertiliser companies’ marketing services and (3) information services for farmers’ effective application of fertiliser.

2.3.1. Distribution systems

Poor farmers in Nigeria obtain fertiliser through two possible distribution systems: the subsidised fertiliser sold through the
public distribution system, or the market rate fertiliser sold through the private channels. However, the formal public subsidy system has created a set of informal incentives that undermine a well-functioning distribution system and contribute to an inefficient and unresponsive market environment.

‘Formal’ distribution system of public subsidies

Every year the FGN’s National Council on Agriculture (NCA) allocates a portion of its annual agricultural budget (16% in 2010) to subsidise fertiliser. Since 1999, this rate has remained constant at 25% of the acquisition price. The Federal Ministry of Agriculture solicits tenders from private fertiliser companies to procure urea and NPK-blend fertilisers. The FGN screens the companies’ bids and composes a list of large contract orders (30 companies in total in 2010). Once the FGN places the orders, the fertiliser is then sold at the subsidised rate to the state governments and distributed to states’ agricultural warehouses. States then augment the federal subsidy with an additional subsidy—generally also around 25% depending on individual states’ budgetary decisions. Some states also procure fertiliser directly from the fertiliser companies to increase the volume of fertiliser they provide to farmers. Upon arrival in the state warehouses, the bags await pickup from the state Agricultural Development Programs (ADPs); or from the local government area officers who then distribute the fertiliser through their respective ward councillors. The ‘official’ stated end price of subsidised fertiliser through state-controlled distribution runs roughly 60% cheaper than the market price.19

‘Informal’ rules of social patronage

While the above process describes the formal plan for public fertiliser distribution, the actual path of fertiliser distribution is more complex due to informal cultural norms and incentives in the system. Industry experts contend that the federal government orders involve inflated official purchase prices and kickbacks to the public agents who signed the contract orders. Some orders do not even result in the physical transfer of fertiliser—just in the signing of receipts and transfer of funds. Of course these claims are not verifiable on record, but tend to be accepted in practice by public and business elites due to the Nigerian cultural norm of social patronage.

Furthermore, the states’ protracted and bureaucratic processes for releasing funds to pay for the fertiliser often cause delays in the transfer of the goods to the state. Politicians at both federal and state level divert much of the fertiliser away from the formal channels (in some cases up to 90%), selling it instead to political patrons, wealthy citizens or businessmen in a further set of mutually beneficial transactions. These private buyers, in turn, sell the fertiliser for a profit to private traders and/or distributors inside or outside the country. As a result of the channel inefficiencies, fertiliser typically does not reach the intended poor farmers at the subsidised rate. Many farmers therefore end up buying ‘subsidised’ fertiliser at near-market rates in the open markets.

Incentives founded in the cultural norm of short-term thinking

What are the incentives that keep the formal subsidies and diverted distribution systems alive in the Nigerian market? For government actors, there are three main forces at play. First, some politicians have little understanding of the actual level of waste occurring through the channel inefficiencies and truly believe that the subsidised fertiliser is helping the poor farmers (Section 4 provides further details). Second, political figures use subsidised fertiliser as a campaign tool to woo public votes. For example, in an article in The Guardian of Nigeria, the president of The Nigeria Cooperative Women Alliance (NICOWA) states, “If the governors can subsidise fertiliser sale, farmers will not only vote for them in their political aspiration, but also ask God to bless them”20 [italics inserted]. Politicians then promise the arrival of subsidised fertiliser, and farmers wait for it to come. Due to the inefficiencies in the distribution chain, however, it arrives too late in the season, or it does not arrive at all. Farmers who wait miss the window of opportunity to procure fertiliser on the open markets (albeit at higher market prices) in time for planting season. When farmers do not receive the promised subsidies, they make loud appeals to politicians for improved supply of subsidised fertiliser. This then feeds the cycle of politicians promising greater supply in order to “respond to
the people” and increase their popular backing during their current electoral period. Third, and perhaps most importantly, politicians have incentive to maintain market-distorting subsidies due to their focus on short-term personal gain. Their ability to profit from their public positions of authority in turn results from a political system that lacks established checks and balances of public finance, and processes of personal accountability.

Distributors of fertiliser also have strong incentives to maintain the system of subsidies. In the current market structure, they buy subsidised fertiliser from politicians or businessmen at a lower cost than the fertiliser companies’ wholesale price; they can then tack on a significant margin and still sell the fertiliser at a lower-than-retail-market price (see Figure 3 below). Furthermore, distributors have a strong disincentive to purchase additional supply from fertiliser companies at market rates. Those who stock supplies both directly from the fertiliser companies and through the subsidised channel are faced with the problem of having the exact same product to sell, but at two different prices: the market price and the subsidised price, which differ by anywhere from ₦1,000 to ₦2,000 (£4–8) per 50-kg bag. This amounts to a total difference for a distributor of ₦600,000 to ₦1.2 million (£2,400–4,800) per truckload. Distributors can quickly and easily sell their entire stocks of low-priced subsidised fertiliser, but then find it difficult to sell the higher-priced fertiliser purchased directly from the company. Lastly, distributors prefer to supply those market segments where they can make a profit most easily: (1) large-scale, commercial agricultural producers in accessible areas, (2) buyers in urban markets, and (3) international buyers for export; this means distributors’ market preferences do not coincide with or respond to the needs and locations of poor people, particularly the rural poor. Distributors have not recognised the value of investing in remote regions in order to build long-term distribution networks and markets.

As Figure 3 illustrates, farmers and distributors win in the current subsidised fertiliser channel: farmers save over ₦1,000–2000 (£4–8) per 50-kg bag, depending on where they buy the fertiliser, and distributors significantly increase their margins. As a result, there is little public outcry or insistence upon removal of the subsidies.

Fertiliser companies also benefit from the government procurements, because institutional buyers serve as an ‘easy’ market. As such, fertiliser companies compete to get large, bulk orders from one big buyer, and do not have to invest in marketing, sales and distribution functions to sell to a more diverse consumer base. Like the distributors, fertiliser companies seek easy profit—but they fail to recognise that this short-term-profit thinking can backfire on them, in that a lack

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**Fig. 3.** Illustrative cost pathway of 50 kg of subsidised versus market-rate urea.
of diversified buyers increases sales risk for fertiliser companies. If a relationship with a government contact goes sour, the whole contract order dries up.

2.3.2. Marketing strategies: lack of placement, packaging and price tactics

For farmers living in remote rural areas who are unable to purchase subsidised fertiliser from the local government sales points, the only other option remaining is the open market in more distant urban centres. In order to afford a 50-kg bag at the open market price, poor farmers may pool their money together with neighbouring farmers or seek money from extended family members. Some traders and retailers have filled this market gap by opening up 50-kg bags and selling smaller quantities of fertiliser, scooped out manually. However, this market-responsive action introduces a further inefficiency into the system: when the bag is opened, fertiliser quality is reduced.21 Some traders or sellers may also adulterate the products, which reduces the efficacy of the fertiliser on farmer yields. The low quality assurance of open-bag fertiliser and the distance to market serve as disincentives to farmers. Furthermore, mixes of fertiliser available on the open market are standard NPK blends, not the specific mixes of micronutrients matched to farmers’ needs for their soil or crop types.

Why are fertiliser companies not reaching remote rural markets with quality products, packaged to suit consumers’ needs? Focusing in the short-term on politicians and wealthy buyers, fertiliser companies have not developed long-term plans for exploiting business opportunities in serving the real end users—the masses of farmers. They are sometimes referred to as ‘peasant farmers’, a term that relegates them within Nigerian culture to a lower status, one less worthy of attention and respect, because it connotes that they are recipients of hand-outs. There is a misconception that those farmers can only afford subsidised fertiliser. While they may indeed be too poor to buy large bags at market rates, this perception belies the facts that (1) these very farmers can afford smaller volumes of product at unsubsidised prices, and (2) the farmers who do not access the subsidised fertiliser need and want to buy at least some quantity of market-priced fertiliser.

Fertiliser companies tend to be unaware of what happens to the fertiliser after it leaves the company stockroom. The primary concern of the fertiliser companies is that the distributors are buying it—not the placement or promotion tactics of the distributors. Furthermore, because institutional buyers and traders prefer large, easy-to-handle 50-kg packaging, fertiliser companies have met only these buyers’ packaging needs rather than develop consumer-friendly packaging. Fertiliser companies do not perform the market research needed to become aware of what poor farmers need or buy, and retailers and distributors do not feed market information back up the value chain to the fertiliser companies.

Box 3: A farmer describes the challenge.

Sidi Bweta is a young farmer from a northern state, who came from a family of farmers. Sidi’s mother had always purchased fertiliser for their small family farm from one of the local households that had access to the government-subsidised and -distributed fertiliser. In his local government area, he said, the government provided subsidised fertiliser to the ward councillor of the community, who would then redistribute it to the community elders. These elders would then resell fertiliser to those households that had provided political patronage over the course of the year. These households would either use the fertiliser on their own farms or resell it, e.g. to close friends, relatives or neighbouring farmers who had coordinated themselves to purchase fertiliser supply. The retail channel was not a reliable source of fertiliser, explained Sidi, as any supply was usually aggregated by traders and sold off at larger markets in the cities. “Government controls the fertiliser in our state,” he explained. “If you are not connected to one of the households, then you can’t get access.”

2.3.3. Farmer training systems: inadequate and inappropriate farm usage

The state-funded Agricultural Development Programs (ADPs) in Nigeria have established public extension services to not only distribute the fertiliser, but also educate farmers in proper application and usage. Currently the village extension agent (VEA) is the only service provider in the market from whom farmers formally receive information about farming techniques. This information service is also critical in helping drive farmers’ demand for fertiliser.

Although the state ADPs pay rural extension agents to provide farmer training, the efficacy of this public service is terribly low. For example, in Bayelsa state, given the number of extension agents on payroll, the estimated number of farmers an agent would need to meet in a given year in order to reach all farmers in the state was 46,196. The actual number met by an average extension agent was 260.22 The upshot is that farmers do not know where to turn in order to improve their farming knowledge.

In one study conducted by IFPRI,23 however, it was shown that public management of the extension services was insufficient to reach all farmers. Due to a lack of public accountability, it said, poor farmers do not actually get the inputs or the information they need from the VEAs. There are not enough VEAs to go around, and extension agents view their advisory services as second priority to distribution of inputs. It was discovered that despite this prioritisation, VEAs spend, on average, less than 15%23 of their time distributing inputs. Furthermore, they don’t even view fertiliser technology as the top priority; rather,
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3.1. Identifying a suitable partner
PrOpCom’s initial impetus to catalyse change in the fertiliser
market was sparked by discussions on how to get around the
issue of channel corruption. At the same time, Notore Chemical
Industries Ltd. was also seeking innovative ways to improve
its fertiliser distribution. While PrOpCom was investigating
the fertiliser market, Notore was also seeking support. This
mutual interest allowed PrOpCom’s intervention to take on a
concrete form. However, what made Notore the right partner
for PrOpCom was first of all the organisation’s ability to spark
change in the market—but more importantly their desire for
change.

Part of Notore’s vision statement said that the company wanted
“to be a significant contributor to the development of Africa”,
which made it an ideal partner for PrOpCom. Notore’s two key
contacts to PrOpCom, the head of agricultural services and
the chief marketing officer, were enthusiastic about working
with PrOpCom because they needed to grow the business to
achieve the other part of Notore’s vision statement: “To be
No. 1 in market share and profitability in our chosen business.”
Furthermore, the head of agricultural services had previously
worked on another donor-funded agricultural value chain
project and had recently transitioned to Notore, which lent
a strong level of mutual understanding between the two
partners.

However, the risks of failure for a development-oriented
change programme set up by these two executives were
high—and the consequences to their business potentially dire.
Since PrOpCom was able to help defray a portion of the risk
involved for them in piloting a new model, they were keen
for the support. Furthermore, these executives were also ideal
influencers within Notore in that they were senior enough to
garner the respect of Notore’s managing director. Yet they
were not so senior that they lacked the time to oversee the
implementation. As such, they were able to throw themselves
fully into the task of designing and testing a new sales model.
Together Notore and PrOpCom entered into an investigation
of pro-poor innovations in fertiliser. The actual process of
exploring the market together helped build both organisations’
feelings of mutual partnership.

3.2. Selecting a change model
Through DFID’s suggestion, PrOpCom then identified Farm
Input Promotions Africa (FIPS-Africa), an East African non-profit
organisation founded in 2003. FIPS-Africa had successfully
catalysed pro-poor changes in the private agro-input retailing
sector by working closely with private sector companies and
smallholder farmers in Kenya. Its innovative methodology
involved developing more appropriate fertiliser blends suitable
to African soil conditions, and packaging fertiliser into small,
affordable bag sizes to encourage farmers to experiment with
its use with little risk. FIPS-Africa had also developed networks
of rural agents to promote the small packages of new fertiliser
blends and educate farmers on proper farming techniques.
FIPS’ work had proven that farmers who try out new practices
with small fertiliser volumes would return to their local agents
to purchase ever-larger quantities of inputs. In this way, farmers
were able to improve their incomes independently without the
need for credit or hand-outs.
Box 5: Building trust and learning together.

In July 2009, representatives from Notore and PrOpCom together visited FIPS-Africa’s project areas in Kenya to learn more about FIPS-Africa’s approach. A representative from FIPS then visited Nigeria to learn more about Notore’s activities and methodology. It was agreed that FIPS would advise Notore on developing a fertiliser distribution and sales programme to rapidly increase demand for its products amongst smallholder farmers. Key to this trip was that it formed the basis for a trusted business relationship between Notore and PrOpCom. Particularly in the Nigerian cultural context, a business partner must provide something substantial and tangible in order to reveal his/her commitment to another market actor.

On the trip to visit FIPS-Africa in Kenya, Notore’s head of agricultural services also learned to embrace the concept of setting up a rural sales network. He met a distributor who was supplying household consumables like sugar, ice cream, etc., to small rural shops. When asked if he would be willing to also supply fertiliser in consumable packages, the distributor agreed, noting that the products he sold were all the same to him. This proved the business case for Notore around a rural distribution model. Furthermore, the Notore executive also observed farmers learning on demonstration plots, showing him that demonstration plots are an effective way to show farmers how to change their farming practices.

The final step in PrOpCom’s strategy was to influence its private sector partner to articulate a new business model to meet the needs of poor farmers. In recent years, business strategy discussion has focused on developing innovative business models that target the Bottom-of-the-Pyramid (BOP) market. These models encourage market inclusion and choice for the poor by first developing small unit packages that are more affordable to those with extremely limited disposable incomes, and second by setting up distribution structures to reach them. When the poor are considered as consumers, they gain more than access to products and services. They acquire the pride and privilege of increased choice.

PrOpCom’s goal was not just for Notore to develop a new BOP business model, but rather for Notore’s new practices to serve as a model for change in the overall fertiliser sector. If this model gained traction among other fertiliser companies and the supporting functions, the dominant logic of public subsidy and distribution would be challenged. An alternate model would demonstrate to government actors that private service providers can and should serve poor farmers. A simplified impact logic demonstrating how PrOpCom’s support of this pilot would ultimately reduce poverty is illustrated in Annex 2.

Box 6: What about fertiliser vouchers?

In its initial stages of strategy development, PrOpCom sought out advice from the International Fertilizer Development Center (IFDC), an INGO that had been working in the Nigerian fertiliser sector for years to support poor farmers’ access. Their experience had taught them that market actors had become so accustomed to the idea of fertiliser as a publicly procured and subsidised good that it would be extraordinarily difficult to change their collective mind-set. Therefore, IFDC’s approach at the time revolved around improving, to the greatest extent possible, the systems through which subsidies were distributed. This involved implementing a fertiliser voucher scheme for the distribution of fertiliser subsidies. The scheme involved identifying needy farmers in remote areas, delivering subsidy vouchers to them, and then organising days on which they could pay the fertiliser companies directly for the fertiliser using the vouchers and cash. The scheme was highly successful in reducing the informal and corruptive distortions of the middlemen in the distribution channel. This system also helped ensure a market for participating fertiliser companies who came to the remote towns where vouchers were being distributed.

PrOpCom, on the other hand, decided to test out a different approach. PrOpCom wanted to demonstrate to the government that the existing subsidy, procurement and distribution system was an inefficient use of public funds—extension agents were in short supply, product diversions were causing delays in supply and losses of public funds, and even the voucher scheme—intended to reduce the inefficiencies—was adding an additional donor-public coordination cost into the system. PrOpCom’s model (company-to-farmer direct) would open the door for every farmer in Nigeria to access the fertiliser that they need, when they need it. And private sector distribution structures would be long-term, due to investment and profit timelines—whereas public systems are subject to change based on political election cycles and interference.

3.3. Defining the strategic intervention objectives

PrOpCom worked closely together with Notore to design its intervention strategy for the fertiliser market. PrOpCom would support Notore by furnishing the latter with a grant and management advice that would help reduce its risk in piloting a new model; for its part, Notore would then develop new product, sales and service models targeted at the poor. Based on this partnership agreement, the following four intervention objectives were mutually defined:
1. **Affordability**: Increase affordability of good quality fertiliser on the market through smaller unit package sizes. The prevailing notion that farmers were too poor to afford fertiliser was due to the fact that the only option available to them was the 50-kg bag. Notore decided to package and sell 1-kg bags of its NPK and urea fertilisers, based on the 1-kg packs they had seen for sale through FIPS in Kenya. These bags would serve initially as promotional trial-size bags for farmers. Later, the company could explore the option of packaging in mid-size bags for returning customers.

2. **Availability**: Establish reliable supply of privately retailed fertiliser at the village level through a rural distribution and sales network, helping counter farmers’ vulnerability to untimely and erratic supply of subsidised fertiliser. This would give farmers more choice over when they plant their crops, rather than helplessly waiting for subsidised fertiliser supplies to arrive at government sales points. Notore aimed to set up a rural distribution network for selling the small packs in targeted village sites. It was planned that four new ‘Distribution Partners’ (DPs) would each buy 20,000 of the 1-kg bags from Notore, and in turn sell them to a mobile, rural sales-force of ‘Village Promoters’ (VPs). The VPs selected were to be entrepreneurial types of people living in or around target market villages who would sell the small-pack fertilisers to smallholders.

3. **Education**: Increase farmer information on farming techniques by embedding farmer education into agro-input retailing. This would reduce farmers’ risk of improper fertiliser application and reductions in yield, and would reduce farmers’ dependency on the lacking public extension services. Notore planned to train VPs on how to educate farmers on proper application of fertilisers by setting up demonstration plots in the farmers’ localities. These education tactics were anticipated to significantly increase the effectiveness of the Notore fertilisers, which would spur future demand.

4. **Chemical mix**: Introduce new blends of fertiliser that would be more effective given prevailing soil conditions, and easier to use for farmers. This would further increase productivity of farmers’ crops. Unfortunately, however, since Notore had been acquired from the previously government-owned NAFCON, the production facilities were only set up to produce the standard NPK that the government had been buying for years, and not a blend that included sulphur or micronutrients. Furthermore, the NPK production assets acquired at the time of Notore’s purchase were corroded and had to be destroyed. As a result, Notore imported its entire NPK product, and also owned no blending equipment that could incorporate sulphur into an imported NPK product. Therefore, while Notore agreed with PrOpCom that this would be a good long-term objective, it knew that it would not be able to achieve this objective in the pilot.

PrOpCom valued these four objectives because they would resolve some of the key systemic constraints that excluded poor farmers from the fertiliser market. Notore stood behind these objectives because they saw them as a way to increase sales potential and gain market share. The critical aspect here for Notore was not to compete with the government on price, but rather to provide an innovation in the market through improved products and services that would make farmers want to choose Notore’s product over the poor-quality subsidised fertiliser and public extension training services.

### 4. Facilitating change in the market system

While PrOpCom’s strategy formulation and approach to market system change are described in a linear fashion (as depicted in Figure 4 below), the actual intervention activities occurred in response to challenges and successes experienced in the field. PrOpCom was entrepreneurial in its approach to facilitating fertiliser sector change: rather than enter into the market with a clearly defined strategy, PrOpCom developed impromptu strategies and objectives. The programme continuously reassessed its own programmatic strengths and available resources in order to respond innovatively to market contingencies. Constant to PrOpCom’s strategy, however, was its relentless focus on sustainably improving profits for Nigeria’s poor farmers.

As the intervention progressed over time, four distinct phases of facilitation emerged:

1. **Piloting a new private sector rural sales model.**
2. **Learning and redefining of the intervention approach.**
3. **Scaling up outreach and encouraging market competition.**
4. **Deepening impact.**

#### 4.1. Piloting a new private sector rural sales model (Phase 1)

Notore’s pilot project (called ‘Fast Track’) was conducted in parts of Katsina and Niger states from November 2009 to March 2010. As the pilot progressed, PrOpCom facilitators began to establish a closer working relationship with the key executives in charge of the project. As with nearly all pilot projects, the process of operationalising a pilot was as much about learning more about the market as it was about achieving results—both for PrOpCom and for Notore. The following four sections discuss how the pilot approached PrOpCom’s identified intervention objectives, and the results achieved.

#### 4.1.1. Affordability of high quality fertiliser through small package sizes

Notore decided to brand and sell 1-kg packages of NPK and urea to farmers in rural areas. Since Notore only had nitrogen production facilities, whereas it was able to produce and package the urea, it had to import its NPK blends. Notore
then hired manual labourers to repackage both fertiliser types into small bags. They used sheets of plastic printed with the Notore logo and small sealing machines. Notore began its first production run by packaging roughly 50 MT of the 1-kg bags. The additional targeted 30 MT would be packaged on demand, based on new orders from the distributors.

Notore initially wanted to sell the 1-kg packs to farmers at a target price of ₦100 (£0.40). The actual prices charged were ₦120 (£0.48) and ₦150 (£0.61) per kg of urea and NPK, respectively. Farmers reached through this intervention purchased an average of 3.5 kg of packaged fertiliser, spending ₦473 (£1.93) each (roughly 10% of the cost of a traditional 50-kg bag). This provided initial validation to the hypothesis that a market existed for smaller volumes.

4.1.2. Improved rural availability of privately distributed fertiliser

Notore initially wanted to recruit four distributors for the pilot (two from Katsina and two from Niger) who would be willing to accept the smaller margins of the 1-kg bags (or the opportunity to inflate the margins on Notore’s subsidised fertiliser distributions). However, in the end they only recruited two, due to lack of distributor interest. Notore’s existing DPs in Niger state declined to participate in the pilot programme, so Notore tried out a new person who had previously expressed some interest in working as a distributor for the company.

In Katsina, Notore was able to recruit one of its existing distributors to participate in the programme.

Next Notore decided on hiring and training 20 VPs to work underneath each DP. To achieve this, PrOpCom hired FIPS to lead the process. First FIPS guided Notore in the recruitment of staff to serve as agricultural executives. Second, FIPS trained Notore’s selected group of potential agricultural executives on how to recruit and manage a cadre of VPs in the field. Notore then hired two of the trained agricultural executives, and PrOpCom hired another two for its own field staff. Lastly, FIPS provided Notore’s hired agricultural executives with a list of criteria for selecting VPs to be trained as rural field sales agents.

The initial plan was that the four DPs and 80 VPs would sell a total volume of 80,000 kg to 40,000 farmers. The end result was that the sales plan was grossly underachieved, with Notore only reaching 9% of its targeted 80 MT in sales volume, or 7,168 kg.

4.1.3. Farmer education

Together PrOpCom and Notore developed a plan for training VPs, so that they could in turn educate farmers through demonstration plots. First, the new Notore agricultural executives recruited the VPs for the training, sourcing them through various referrals. Next, PrOpCom agreed to pay for the training of the VPs by hiring FIPS to conduct the content

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**Fig. 4.** The pathway to crowding-in. Source: DFID and SDC (2008)
Notore only reached 20% of its targeted 800 demonstration plots due to (1) poor VP understanding of the process of setting up demonstration plots, and (2) the fact that the pilot programme started too late for VPs to actually take advantage of the proper planting timeline.

4.1.4. New blends of fertiliser

Due to the defunct state of its blending machine, Notore did not have the proper assets at the start of the pilot to produce new blends that included sulphur or micronutrients. PrOpCom and FIPS therefore brokered an introduction between Notore and Office Cherifien des Phosphates (OCP) in Morocco, the world’s biggest phosphates exporter. The initial negotiations revolved around mutual interests: Notore was hoping to utilise OCP’s state-of-the-art laboratory to engineer a better blend and import the requisite nutrients. OCP for its part was hoping to barter an exchange agreement for Notore’s ammonia. However, due to the parties’ inability to reach an agreement on the terms, the negotiations eventually stalled.

It is worth noting that at the time of the pilot, Notore still sold the bulk of its NPK to the government and, while it agreed in principle with the idea of improving its product mix, it had no initial market-based incentive to invest in changes. Notore did not actively pursue continued negotiations with OCP. Furthermore, the failed negotiations with OCP caused Notore to concede that it lacked the financial capital to invest in product changes.

Box 7: Minimising the threat of initial failures.

An organisation’s influencers should prepare well in order to ensure a pilot’s success. Do all key staff properly understand the business model? Are the capacity building measures and incentive structures in place to align field staff around the objectives? Is there a proper selection model to recruit new employees? When initial results are not as successful as hoped, for example, as was the case with Notore’s low sales performance in its pilot, it can be disheartening to both the organisation and the facilitator. The rationale underlying Notore’s ‘aim high’ approach was that they wanted to position themselves well, and to grab attention—but PrOpCom believed that they did it too soon, and felt disappointed by the results. PrOpCom’s opinion was that Notore should ‘under-promise and over-deliver’. One lesson PrOpCom learned, however, is that as a facilitator you cannot push your own operating style onto the partner.

4.2. Critical appraisal of intervention pilot (Phase 2)

Overall, the results of the Fast Track pilot activity were mixed (a tabular breakdown of the pilot’s target vs. actual key business metrics is provided in Annex 3). From PrOpCom’s programmatic indicator perspective, the pilot project achieved a minor success by improving the access of a couple thousand smallholders to training and fertiliser. However, from a market systems change perspective, the few sales made were only a drop in the bucket compared to the millions of poor Nigerian farmers whose demand for fertiliser remained unmet.

Despite the best planning and target setting, it is nearly inevitable in developing country contexts that initial failures will occur due to the multiple challenges of doing business. Therefore, when targets are not achieved, as in the case of Notore’s dismal sales performance in the pilot, PrOpCom’s role as a facilitator was twofold: First PrOpCom managed the emotions and motivation of the partner by accompanying Notore through a process of reflection, so that the latter could reaffirm its own motivation and commitment. Second PrOpCom helped Notore clearly articulate the causes of failure. Here it was important for the facilitator to maintain focus on the core issue and not succumb to ‘mission creep’. (For example, some stakeholders suggested that PrOpCom focus instead on distribution of improved seeds, not fertiliser.) After these two key steps, improvements were required before the change model could be taken any further.

The reflection process

One way that reflection and learning can be achieved is by taking people out of their comfort zones. Toward the end of the Fast Track pilot, PrOpCom accompanied Notore’s chief marketing officer (CMO) on a site visit to a VP’s area to observe and understand some of the constraints. During this trip, the CMO experienced a pivotal moment of enlightenment, which reaffirmed his commitment to the business model: in Katsina, he saw a farmer purchasing a 1-kg bag of fertiliser from a VP. As he observed the transaction, it became apparent to him exactly how poor the farmer was, and the difference that organisations such as Notore could make in the life of this farmer and others like him. The CMO’s field experience, albeit emotional, had a huge impact on the future of Notore’s business, and both PrOpCom and Notore learned, through this visit, how essential it is for top decision-makers to get out into the field and gain a deep understanding of who their customers are.

Evaluating the further problems and risks

In order to advise Notore on its next steps, PrOpCom identified specific issues from its monitoring of the Fast Track pilot that signalled critical risks to Notore’s ability to scale up along the initial three intervention objectives. The fourth intervention objective did not apply for the scale-up due to the above-mentioned constraints at Notore.
Box 8: Listening and learning.

PrOpCom’s facilitation of Notore’s reflection process involved not only a one-off site visit, but also teaching the latter to systematically monitor and respond to their market. Through PrOpCom’s documentation of farmers’ and village promoters’ responses to the Fast Track intervention, PrOpCom modelled to Notore the process of methodically listening and learning from market participants. Below are some of the impressions collected:

Farmer voices:
- “It is a good fertiliser and we are happy about the outcome. We urge for price reduction.”
- “The fertiliser is good but the price is too high. ₦130 is our preferred price.”
- “I need more visits from the VPs so as to improve training on current innovation and methods of farming.”

Village promoter voices:
- “I’d like to make sure there is more supply of the fertiliser.”
- “I like having more variety in the types of demonstrations.”
- “I think I could double my sales of NPK if the price were reduced to ₦100.”

Learning how to be responsive to these voices was a critical step for Notore. It helped the company take ownership over its own strategic direction, i.e., not to view PrOpCom or FIPS as the authority on what to do and how to do it, but rather the market itself as well as the VPs who supply it.

1. Affordability. The initially targeted sales price was not based on market or pricing analysis—it was simply a guess made during the proposal phase. Comments from farmers in the Fast Track pilot indicated that a more appropriate market price for the 1-kg pack must be established. Since the open-bag fertiliser did exist as competition on the market, Notore needed to find a price point at which farmers would view the quality packaging and training services as a justified, value-added expenditure.

2. Availability. The considerable discrepancy between the target sales of 80 MT and actual sales of 7.2 MT had to do with a number of challenges at both the DP and VP levels. For the DPs, the challenges arose from their lack of clarity and commitment to the programme: First, at the time of distribution Notore shipped the truckloads of 1-kg fertiliser packs mixed with bags of 50 kg to the selected DPs. Seeking to promote the new 1-kg packs, Notore shipped the small packs to the DPs on credit, which had the effect of reducing the DPs’ vested interest in selling them to VPs. Second, DPs did not have an established working relationship with the VPs recruited and trained by Notore, which inhibited the cooperation between the two parties. In some instances VPs who had travelled long distances to restock their supplies were unable to obtain access to DP warehouses when they arrived. This meant that VPs with greater proximity to the DP warehouse were more able to frequently replenish their product supplies with fewer transport expenditures. Lastly, the DPs were not initially clear on the amount of margin they would be getting from the 1-kg packs, which was an incentive for them to first sell their 50-kg shipments. Additionally, the late arrival of the product to the rural locations after planting season had passed also cut down the potential sales volumes.

Many VPs in the pilot lacked the incentive to sell heavy volumes of product. This was due to three factors. (1) Many of the VPs felt that the margins provided on the product sales were insufficient. The extra effort to sell was not rewarded by sufficient profit. (2) VPs received payments to set up demonstration plots, which satisfied them financially. VPs didn’t view demonstration plots as a prime promotion and sales opportunity. Many even showed up to the plot sites without stocks of fertiliser to sell. (3) Despite FIPS training, the selection process for VPs was somewhat arbitrary, and not all VPs had entrepreneurial experience or inclinations. As such, many VPs had no cash to invest as working capital, so their ability to buy significant volumes of stock was limited, except for those who were able to negotiate a stock-on-credit arrangement with the DP.

3. Farmer education. Farmers’ successful replication of demo training practices met with mixed results. Some farmers mixed Notore’s NPK with other cheaper products in the market. Other farmers did not apply the fertiliser properly, despite the demonstrations. It was also unclear whether these ‘trained’ farmers were actually influenced to change their fertiliser purchase or application behaviours, again signalling the need for improved VP training and service delivery, as well as the need for better follow-up and impact assessment. In short, all parties in the channel needed a better understanding of the process.

4.3. Scaling up outreach and encouraging market competition (Phase 3)

After the evaluation was conducted and lessons had been digested, PrOpCom then worked with Notore to improve its rural distribution model and achieve greater scale. This scale-up project (entitled ‘On-Track’) would help Notore to grow its sales through village-level entrepreneurship, including improved incentives and a more decentralised management structure. Second, PrOpCom agreed to support another private fertiliser company, TAK Agro (a subsidiary of the TAK Group of companies), in launching its own rural sales pilot (called ‘Tak Aminchi’). ‘Crowding-in’ TAK Agro to this nascent private sales market would allow PrOpCom to extend its intervention outreach and to stabilise private sector supply.
4.3.1. Scaling up Notore’s distribution

To support Notore’s improved rural entrepreneurship model and counter the issues identified in Phase 2, PrOpCom advised Notore on incorporating the following changes into the On-Track project:

1. **Affordability.** The price was reduced from the pilot price of ₦150 (£0.61) per pack of NPK and ₦120 (£0.48) for urea to ₦130 (£0.53) and ₦110 (£0.45), respectively. These prices were more aligned with the prevailing market prices of ₦111 (£0.45) and ₦91 (£0.37), respectively, for the per kilogram price of fertiliser sold in 50-kg bags.

2. **Distribution structure.** A clear organisational structure was designed for the distribution network (Annex 5) that was scalable yet more manageable due to a reduced span of control for DPs. The number of VPs per DP would be kept to 10, with only three DPs supplying to 20 VPs (two of these three DPs were the seasoned participants of the Fast Track pilot). This step was critical to alleviating the logistical challenges of supply experienced in the pilot. The incentive structure was also revised to ensure that VPs would achieve increasingly desirable rewards for greater sales (Annex 4). Furthermore, DP and VP sales margins were increased.

3. **Farmer education.** To ensure the success of this key information service component of the business model, micro-demonstrations were added to the sales repertoires of the VPs. Here the VPs would either set up mini-plots in more locations or accompany farmers to their own plots to help them apply the fertiliser in the correct manner.

In addition to the above changes, PrOpCom also helped Notore think strategically using a market-led approach to select appropriate target markets for the intervention. Key locations identified were those where fertiliser penetration was limited and farmers were poor. Based on these parameters, Notore selected 15 sites in 12 states as target locations for the rollout (see Annex 6 for a map of sites). The On-Track project was anticipated to produce significant pro-poor results (through the sales of over 600 MT of 1-kg fertiliser packs and educating 180,000 farmers) while at the same time supporting the commercial viability and business continuity of Notore. A diagram of the targeted distribution network is depicted in Annex 5.

While Notore again did not achieve its target sales objectives in On-Track, achieving only 217 MT in sales, the company did show an improvement in its rate of achievement. A comparison of Notore’s improvement in target metric achievement from Fast Track to On-Track is illustrated in Annex 7. The detailed results and impact of this scale-up effort are discussed in Section 5 of this case study.

**PrOpCom strategy shift**

Upon completion of the On-Track programme, Notore decided to again scale up its distribution and outlined its 2011 plans for the rural sales model. The plans included a massive effort to train 750 new VPs and roll out the target sales areas to 25 states across Nigeria. Notore aimed to sell 7,500 MT of 1-kg packs through the DP/VP channels.

In February 2011, PrOpCom held a strategy meeting with Notore about the extent to which the programme’s support of this company was still required. PrOpCom was no longer interested in helping Notore minimise the risk of trying a new model—Notore was fully convinced of the model. Now PrOpCom wanted to see the company reach scale and stand on its own two feet. Significant to the new agreement was that PrOpCom shifted its funding strategy. Rather than providing money in order to pay for Notore’s inputs (i.e., for demonstration plots and sales incentives), PrOpCom and Notore agreed that PrOpCom would only provide stratified cash payments for achieved results. This would act as incentive for Notore to actually reach its sales targets using its own budgets—which would ensure that Notore achieved cost sustainability of the rural distribution model.
Also notable to PrOpCom’s strategy shift with Notore was how the amount of funding changed over time. While a diminishing level of partner funding over time might indicate that the partner is sustainably embedding the new processes within its own organisational structure, PrOpCom’s total level of proposed funding actually increased in 2011. However, if you compare the year-on-year funds versus the scale of change, it is seen that the unit cost of PrOpCom’s funding was indeed declining (see Figure 5).

One key capacity challenge that remained for Notore to achieve full scale, however, was its financial position. At the beginning of 2011, the company found itself in a dire cash position due to a Central Bank of Nigeria decision to force loan collection on debtors, as well as Notore management decisions regarding the release of equity shareholdings. The company was therefore uncertain of its ability to deliver on the final target sales volume due to lack of working capital, without which they could not import and deliver the agreed volumes of NPK to the DP’s in the field. Notore was seeking investors, but investors were reticent to invest due to past management practices and the general investment climate in agriculture in Nigeria. This weakened capacity of the firm—both financial and management—posed a risk for PrOpCom’s intervention success.

4.3.2. Crowding-in other competitors: TAK Aminchi

After the completion of the Fast Track pilot, PrOpCom looked to develop a new relationship with TAK Agro, maintaining FIPS-Africa as the advisory services provider. Through its linkage to FIPS-Africa, TAK Agro identified the need to formulate more appropriate fertiliser varieties to be supplied in Nigeria, and decided to produce a new chemical blend of NPKSCa. This was an important addition to PrOpCom’s fertiliser intervention, because this partner was better equipped than Notore to meet PrOpCom’s fourth strategic objective of supplying improved fertiliser nutrient mixes to the market.

PrOpCom helped TAK Agro design a similar rural sales model with its four strategic intervention objectives (affordability, availability, farmer education and chemical mix) to be piloted in Kaduna state. The implementation model of TAK’s pilot differed from Notore’s approach based on TAK’s operating structure. Two key differences were salient. First, TAK Agro implemented a slightly more complex distribution model. Rather than distributors selling directly to the field agents, TAK’s distributors sold to their existing agro-retailers, who then sold to 150 newly-hired TAK rural promoters (TRPs). While this mitigated Notore’s challenges with VP proximity to DP warehouses, this introduced another middleman into the supply chain, who would need to collect his respective margin (the agro-retailer). Second, TAK Agro decided to provide a flat-rate margin of ₦5 (£0.02) per sales transaction to each actor in the chain: distributor, agro-retailer and TRP (not taking into consideration the varying volumes and costs of each of these actors).

A few challenges during implementation of the pilot occurred that were caused by skewed incentives and lack of enforcement of the model. First, TAK agro-retailers were selling Aminchi small packs directly to farmers in urban markets (i.e. not using the TRPs) and were collecting N10 (£0.04) per bag rather than the ₦5 (£0.02) they were supposed to earn. Second, while the margin per 1-kg pack was an attractive value proposition for the distributors and retailers due to their large volume throughputs, TRP sales volumes were not high enough to motivate them to push TAK Aminchi product sales. Rather, they were motivated by the fees they received to set up the demonstration plots, and were not supplying products to the rural areas. The result was that TAK sold less in its pilot (5,800 kg) than Notore sold in its Fast Track pilot (7,168 kg)—and this despite a higher original sales target.

A second challenge emerged in the partner relationship between PrOpCom and TAK. In the MoU, PrOpCom agreed to pay the fees for the TRPs to set up demonstration plots. The agreement was such that TAK would pay the TRPs, and then PrOpCom would reimburse TAK. In the first demonstration round (planting and NPK application), the payment of ₦1,500 (£6.11) per demonstration to TRPs worked as agreed. In the second demonstration round (urea application), however, farmer turnout at the demonstrations was exceedingly low, averaging only five to seven farmers per site. TAK paid the TRPs, but PrOpCom did not reimburse TAK, because PrOpCom felt that TAK had not fulfilled its responsibilities in line with the grant agreement, which included instructions for inviting farmers to demonstrations. In the third demonstration round (harvest), targets for farmer attendance were again not reached, and this time TAK refused to pay the TRPs, and also never even asked PrOpCom for the money. As the reasons for failure of the pilot were assessed, PrOpCom and TAK’s relationship stalled.

A final challenge that TAK faced was the lack of communication between PrOpCom’s lead contact person (TAK Group’s managing director) and the TAK-designated Aminchi programme manager. Because the latter was not engaged with PrOpCom from the beginning of the partnership, he did not participate in the key strategy sessions, and therefore found it difficult to properly plan and communicate the required changes. Furthermore, he was too junior to act as an influencer and decision-maker in the organisation. He had to pass all decisions through the MD, who did not dedicate time to make critical decisions.

Despite the pilot failings with TAK Agro, PrOpCom wanted to continue its work with TAK Agro. For PrOpCom, boosting TAK (or other competitors) would help build up a healthy competition base to Notore. It would also be good for market dynamics in that each company possessed a unique competitive advantage: while Notore had a head-start over TAK in terms of implementing a distribution structure, TAK’s advantage lay in its size (it produced more volume than Notore) and the fact that its chemical blend of NPKSCa was superior to Notore’s NPK mix.
Box 9: Structures are hard to change.
Attitude matters.

Changing the fertiliser market system requires changing the ways that fertiliser companies operate. In turn, getting a large, established company to change its organisational systems is a challenge in itself. After Notore’s recent privatisation the company’s internal organisational dynamic was a work in progress, which made it relatively easy for the management team to redefine their processes and structures to meet the needs of the pilot business model. TAK, on the other hand, had an organisational structure and processes that were firmly embedded, and hence difficult to influence and change. As a result, TAK did not significantly change its existing distribution model. Instead they hired a lead distributor who did not have an innovative marketing mind-set, and preferred the established trading behaviours. TAK set up a supply chain based on its existing structure with too many middlemen and too few incentives.

When the partner firm is in a state of flux or is more able to adapt its internal structures and processes to meet shifting market needs, it is more likely to succeed. But more important is the partner’s attitude: Does the partner have the vision to change?

Box 10: Partner, parent, lover or saint?
Programme facilitators run the danger of becoming too enamoured with a partner firm. PrOpCom recognised that it would eventually have to act like a parent, by pulling back from Notore and allowing the company to ‘mature’ into an independent entity. But in the case of TAK, PrOpCom needed to consider adopting a different stance, given that TAK did not submit a new proposal for a scaled up rural sales project—despite claims of continued interest from the managing director. What happens when the firm appears destined to fail? Does the facilitator rush in to rescue the firm, like a saint? Or does the facilitator prescribe punishing measures, like a parent? The interpersonal tactics of the facilitator are critical in terms of knowing when to give support, when to withhold support and how to negotiate the space in between.

TAK for its part had also stated its commitment to continue with the Aminchi project. For its part, PrOpCom needed TAK to clearly agree on a strategy it would pursue in order to tackle the challenges that had arisen during the pilot. However, the company neither followed through with the level of communication required for a partnership, nor submitted a proposal for further assistance. At the time this case study was written, TAK was unable to furnish this, and hence PrOpCom’s partnership with TAK had lapsed.

4.4. Deepening impact (Phase 4)

In its final year of implementation, some prevailing market risks still existed that could potentially undermine the intervention’s success. The key risk involved the powerful role that the Nigerian government played in the market system: If the Nigerian government improved its own fertiliser distribution systems to reach the new rural areas being served by Notore, this action could destroy Notore’s market; since Notore was PrOpCom’s only remaining partner, if Notore failed, PrOpCom’s efforts in the sector would not gain the desired traction and proliferation.

PrOpCom therefore committed to activities that would deepen the systemic impact in the fertiliser sector. This entailed, first, providing further inputs that would help Notore become more resilient and help other fertiliser companies to build their collective strength to influence the government subsidy and procurement actions. Second, PrOpCom worked more intensively with public sector actors to change the rules of the market system and improve the business environment for the fertiliser companies.

Private sector inputs

Based on Notore’s plans submitted in the February 2011 strategy meeting, PrOpCom engaged FIPS-Africa in May 2011 to provide further management consultation services. This included an evaluative visit of Notore’s DP and VP sites, which culminated in an advisory meeting with Notore’s senior management. PrOpCom also helped Notore look for seed companies with whom the latter could partner to supply small packages of seeds together with the 1-kg fertiliser packs. To implement this new plan, Notore planned to train the VPs on how to sell seeds together with fertiliser.

To help strengthen the collective fertiliser private sector, PrOpCom began working with the Fertilizer Producers and Suppliers Association of Nigeria (FEPSAN). PrOpCom’s support included helping FEPSAN member companies think strategically about how they should be interacting with the government as a buyer. Furthermore, PrOpCom partnered with DFID’s ENABLE programme to improve the organisational and advocacy capacities of FEPSAN. PrOpCom supported FEPSAN’s advocacy messaging by providing communications materials for FEPSAN to use in its media relations and political campaigns. Key to PrOpCom’s advocacy messaging was that the fertiliser companies needed to ask the government to partner with the private sector in ways that would not compete with the private sector’s own sales efforts. This would help prevent unwanted situations, such as one that happened to Notore in one state, where an entire warehouse full of market-rate fertiliser went unsold, because subsidised fertiliser was also being sold in the same location.
5. Market system changes: business solutions that impact the poor

The results achieved through PrOpCom’s intervention activities will be described using the M4P Strategic Framework (Figure 6). Section 5.1 describes changes to the market system, focusing on the differences seen in the provision of goods and services. Section 5.2 describes changes in the core fertiliser market, showing how farmers have vigorously taken up these goods and services due to their improved access. Finally, the poverty reduction impact is discussed in Section 5.3.

5.1. Evidence of market system change

Both Notore and TAK underwent some organisational changes by the very fact of having worked with PrOpCom to implement small-pack fertiliser distribution projects. Systemic changes, however, are evidenced by changes embedded within the organisations across a sector, rather than one-time project changes that may later revert to previous models.

Changing attitudes: overcoming initial reluctance to change

Notore’s senior management showed a clear attitude shift throughout the life of the intervention. For example, after the On-Track project, the CMO said, “it was something we were always planning on doing.” When contrasted against his initially doubtful stance toward the small-pack, rural sales model prior to the trip to Kenya, this comment shows he has not only internalised the business model, but has done so to such an extent that he had forgotten that it was not Notore’s idea from the start. Attitudes of Notore’s DPs have also changed: At first they did not fully understand or trust the new sales model. After testing the process in action with initial small sales volumes, they understood how the model worked and that it had potential for success. At this point DPs renewed their orders for small-pack supplies and improved their cooperation with VPs.

Product and service innovations for the poor

Product. The introduction of fertiliser small-packs into the Nigerian market was a system-changing event, which proved that a market existed for smaller volumes of a product. Furthermore, TAK Agro’s introduction of a new chemical product mix also demonstrated a farmer-friendly product improvement. Despite the cessation of TAK’s partnership with PrOpCom, TAK continued to produce only the Aminchi improved blend, also for its 50-kg bags. At the time the case study was written, TAK had sold some stocks of 1-kg packs to a distributor, but was not pursuing its TRP model. Notore, on the other hand, was expanding its packaging selection to include 10-kg bag sizes.

Services. The provision of training with fertiliser sales represents an innovation in the fertiliser support market. By February 2011, over 843 demonstration plots had been established by Notore’s On-Track programme and 849 were established by TAK Agro. By July 2011, Notore’s VPs had set up a total of 703 demonstration plots across all 25 targeted states, reaching a total of 16,955 farmers (or an average of 24 farmers per demonstration).

By virtue of having targeted such product and service innovations to the rural poor, an initial shift occurred in the market system, in that poor farmers were being enfranchised as end customers in the private sector mind-set. No longer was the government considered as the only viable sales target. The government may still be the easiest market for fertiliser, but it was no longer the only market.
**Establishment of a rural distribution and sales network**

In February 2011, Notore’s 12 distribution partners had collective stock-on-hand of 386 MT of 1-kg packs. Furthermore, 56 VPs had reached the first incentive stage (received a phone) and seven had reached the second (access to a motorbike). By March 2011 one VP reached the final incentive stage of owning a Notore motorbike by selling 15 MT of fertiliser. DPs and VPs interviewed were interested in continuing their work with Notore. DPs were agreeing to the terms of trade and margins provided by Notore, and some were investing in warehouses. Results from On-Track versus the Fast Track pilot showed that the distribution and sales network was improving its sales performance with a 34% sales target achievement rate compared to the 9% achieved in the pilot (see Annex 7). By July 2011, Notore had invoiced DPs for 2,500 MT of fertiliser in 1-kg packs—evidence of significant improvements of the company’s attempts to scale up its distribution model. At this time, Notore had also packaged 500 MT of urea in 10-kg bags, which it was considering distributing through its DP/VP channels in 12 target states.

An assessment of On-Track showed that 65% of VPs surveyed viewed the objective of their own recruitment training as learning how to set up demonstration plots and teach farmers. The remaining 35% thought that in addition to learning how to teach farmers, they also learned how to promote the Notore product. However, all Notore VPs were supposed to sell the product. In the case of TAK, the results are worse, with 64% of the TRPs never even selling the product, but rather only organising demonstration plots. This indicates that VP training must focus more on sales techniques.

**Strengthened capacity: self-awareness**

A signal of embedded change within Notore’s mind-set was management’s pledge near the end of 2010 to dedicate 20% of its total 2011 sales to 1-kg package sales. This was an extremely ambitious goal, considering Notore’s inability to deliver on its earlier—much smaller—sales targets. Interestingly, Notore showed signs of self-awareness and came back in its February 2011 proposal with a revised target of only 3% of domestic sales—a much more reasonable target. Setting realistic targets is evidence of an improved ability to plan based on the firm’s capacity rather than idealised, fabricated numbers. Furthermore, at the time this case study was written, Notore was beginning to see that as it scaled up its own operations, a small programme like PrOpCom would no longer be able to conduct monitoring assessments across its sites, and began to define processes on how to capture its own market data.

**Achievement of geographic scale**

Through Notore’s On-Track project, one-third of Nigeria’s states were being reached (12). Notore’s February 2011 proposal aimed to reach over two-thirds of Nigeria’s states (25). By April 2011 Notore had recruited and trained 750 new VPs. Broad geographic reach, as opposed to highly penetrated regional coverage (like TAK’s pilot model), is a powerful lever for market system change. This broad-based scale is significant for two reasons. (1) Conducting a change programme across a variety of locations provides a level of visibility that gets broadly noticed. Politicians, the media, and other private sector companies are more likely to see a change sweeping across the entire nation, as opposed to hearing about a programme being conducted in an isolated region. (2) The momentum of such large-scale change serves as a strong motivator for competitors to penetrate the fertiliser market. No competitor wants to see Notore sweep up the entire market base across Nigeria, and the competitive threat is pushing other companies to crowd in.

**Crowding-in**

PrOpCom’s work with TAK Agro at first gave strong indications that crowding-in was occurring, since it was TAK Agro that initiated the relationship with PrOpCom, and not vice versa. In February 2011, TAK Agro declared its on-going commitment to continue private sales of the TAK Aminchi product—but had

**Box 11: Measuring sustainability of change.**

Sustainable change is evidenced in an intervention when market players energetically take up market functions with a clear understanding of their roles and responsibilities (who will do what?) and financial implications (who will pay for it?). PrOpCom’s interventions produced sustainable change in the market system, evidenced through the commercial ownership of the process and the cost.

**Process ownership:** Right from the beginning, PrOpCom attempted to maintain a distance from Notore’s processes. For example, rather than advising Notore on the new sales model, it allowed FIPS to take over the advisory role on issues such as the distribution model and the VP training. However, it was Notore that actually implemented the programme. The critical area of PrOpCom involvement was in the area of monitoring. While Notore succeeded in monitoring its sales during the On-Track project, it was still uncertain whether Notore would conduct the evaluative surveys required in order to develop a critical appraisal system for continuous process improvement.

**Cost ownership:** PrOpCom’s initial stages of the intervention assumed the input cost of Notore’s embedded ‘farmer education + sales’ business model by paying for the farmer demonstration plots. PrOpCom’s shifted approach in 2011 to providing funding support for Notore (i.e. cash for results) forced Notore to provide all of its input costs. It was an all-or-nothing model, in which Notore would either succeed in achieving the sales target through its own funds and processes, or it would miss its target, in which case no support would be given at all.
allowed the TRP channel to lapse. PrOpCom also discussed the potential for Afcott Nigeria, a subsidiary of the Kewalram Chanrai Group, to try to copy this programme. However, by June 2011, no progress had been made with TAK Agro or Afcott in pursuing further partnership arrangements for the final six months of the programme. There was, therefore, no conclusive evidence of crowding-in taking place of the rural distribution model, but the hope remained that other competitors would seek to emulate Notore’s model—particularly given the media attention awarded to the company, including a high-profile newspaper photo of Notore’s managing director shaking hands with the governor of the Central Bank of Nigeria, while holding a 1-kg bag of Notore fertiliser.

Box 12: Predation vs. Healthy Competition.

On 8th November 2010, after the end of the Notore On-Track programme, a major Nigerian newspaper, The Guardian, ran an article citing a major competitor’s entrance into the fertiliser market. Here it was announced that Dangote Group, one of Nigeria’s largest industrial conglomerates, would enter the market to “fill in the gap and supply quality fertiliser that will meet the needs of the farmers.” Whether Dangote’s market entry is a positive sign of competitive crowding-in or a threat to the nascent private sales channels of Notore remains to be seen in the sales approach they adopt. Dangote’s entrance into the market could signal an unhealthy predation of the business model introduced by Notore, which may not ultimately benefit the poor.

On the other hand, Notore’s interpretation of competition is positive. Notore’s head of agricultural services talks of “If this small pack strategy creates the opening that pushes the consumption [higher than its current level], then we are creating demand and we actually need competition to join us to fill [the demand]. Really what we want as an organisation is to champion a green revolution . . . and we would not be able to do it alone.”

5.2. Evidence of improved access or growth

The changes evidenced above show that the support market is altering its provision of goods and services. However, changes in access or growth in the core market are evidenced through farmers actually accessing and taking up these new products and services. Farmer productivity must also change as a result of their uptake in order for the impact to be significant.

Farmer uptake of new model

By the end of On-Track (end-January 2011) over 230,222 kg of fertiliser in total had been sold in 1-kg packs through Notore and TAK Agro’s private sales channels to over 63,390 farmers. While this averaged out to 3.6 kg per farmer, the median purchase size lay lower at 1–2 kg of NPK and 2–3 kg of urea per farmer. This was due to selected instances of commercial farmers buying higher volumes of fertiliser from the VPs (e.g. 30 or 40 kg). For these farmers, the cost of buying such volumes of individually packaged 1-kg bags was higher than the purchase price of a 50-kg bag, but the cost was offset by the availability and ease of purchase of fertiliser in their village locations. FIPS-Africa advised that farmers need an average of 62.5 kg per ha of fertiliser for their crops—which means that taking the simple average of 3.6 kg purchased per farmer, the average plot size being covered with fertiliser is only 0.05ha.28 Given the average smallholder plot size of 1–2 ha, this indicated a strong potential for farmers to increase their volumes of purchase. By July 2011, Notore had sold approximately 1,820 MT of urea in 1-kg packs as part of its 2011 scale-up programme to 25 states. Among farmers surveyed who were repeat-purchasers of Notore’s 1-kg bags, the reported average purchase size had doubled year over year—indicating that a market for larger bag sizes (e.g. 10–20 kg) would exist.

By the end of the On-Track project, a total of 1,692 full-size demonstration plots had been set up. An assessment of farmer learnings revealed that 75% of farmers interviewed were receiving their first exposure to all three key topics: (1) seed and fertiliser spacing, (2) correct fertiliser dosage, and (3) proper seed and fertiliser burying techniques. It is in the nature of human beings to share new information through informal communication. In the On-Track assessments, 32% of farmers stated that their new farming techniques were copied by close friends or neighbours—in some cases word-of-mouth learning reached more farmers than the original demonstration plots. Farmers stated that they felt comfortable teaching others because they saw the improvement in their own crops within few weeks of application of the Notore fertiliser.

“I was broadcasting fertilisers and now have stopped it and started applying fertilisers correctly as I was taught. I have seen increases in yield. Small bags made it easy to get fertilisers unlike when politicians used to hoard them.”

—Farmer in Badegi Community, Katcha LGA, Niger state

Farm-level productivity growth

PrOpCom’s preliminary qualitative assessments from the Fast Track pilot indicated that farmer yields were indeed increasing. Assessments showed a 10% rise in the yield of maize among farmers using Notore fertiliser and proper application techniques versus the control group that used other fertilisers and did not have the benefit of the demonstration training. An assessment of TAK fertiliser yields over other fertiliser use revealed a 28% increase. An assessment from the On-Track
programme of 50 farmers across five states who used the Notore 1-kg fertiliser showed yield increases in maize of 39%, in sorghum of 60% and in rice of 13%. One farmer interviewed made the following claim: “Thank God I [participated]. Now my yields are better than I have ever seen since I started growing vegetables, my yields this year are about three times more.” While the farmer’s perception may be exaggerated over his actual yield figures, what is important is farmers’ belief that yields are much higher, which will spur further demand.

5.3. Poverty reduction

In an M4P programme, impact at the poverty level is measured through three key indicators: (1) growth in income, (2) growth in employment, and (3) increased wellbeing. While the third indicator is difficult to quantitatively measure, PrOpCom did see evidence of increases in social capital at the rural level, which can be used as a proxy for wellbeing.

**Net income growth and rural job creation**

**Core market:** As of February 2011, assessments of farmers’ additional income were showing an aggregate net income growth of N124 million (£0.5 million). The additional estimated net income growth at the time of reporting for this case study was N162 million (£0.66 million), providing a total farmer net income growth of N286 million (£1.16 million). The On-Track assessment showed an average increase in net income per farmer of N1,326 (£5.40) (while aggregate intervention net income growth is N1,540 (£6.27) per farmer). It can be assumed that most of the farmers reached were poor (in accordance with PrOpCom’s mandate) because farmers who purchase less than 300 kg in total in a season will be smallholders with landholdings of two ha or less.

**Support market:** From the On-Track assessment, the average change in net income of VPs was N24,829 (£102). The aggregate profit generated for Notore VPs was N3.8 million (£15,469). The VPs’ income growth did count toward PrOpCom’s aggregate programmatic indicator of income growth, but the programme did not collect monitoring data on how many of the VPs were poor, as they were not part of the core market. By the end of On-Track, 150 new jobs were created for VPs. Through TAK Agro’s intervention, 150 new TAK rural promoter (TRP) jobs were created. While the TRPs were not successful from an intervention objective perspective of selling the product in the rural villages, they were successful in setting up demonstration plots for a fee. Furthermore, after the intervention pilot ended, there was evidence that the agro-input dealers continued to use the TRPs as local distribution assistants.

**Table 2.** Reported figures on poverty reduction.

<table>
<thead>
<tr>
<th></th>
<th>FTE jobs created</th>
<th>No. of farmers buying 1-kg packs</th>
<th>Net income growth per farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Track</td>
<td>n/a</td>
<td>2,084</td>
<td>N36,857,624</td>
</tr>
<tr>
<td>On-Track</td>
<td>137</td>
<td>60,589</td>
<td>N84,145,422</td>
</tr>
<tr>
<td>TAK Agro</td>
<td>155</td>
<td>1,000</td>
<td>N3,231,020</td>
</tr>
<tr>
<td>2011 Scale up</td>
<td>750</td>
<td>505,833</td>
<td>N670,735,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,042</td>
<td>569,506</td>
<td>N794,969,066 (£3,191,643)</td>
</tr>
</tbody>
</table>

**Table 1.** Reported figures on market system inputs and farmer uptake.

<table>
<thead>
<tr>
<th></th>
<th>No. of demonstrations</th>
<th>No. of states covered</th>
<th>Sales (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Track</td>
<td>~100</td>
<td>2</td>
<td>7,168</td>
</tr>
<tr>
<td>On-Track</td>
<td>843</td>
<td>12</td>
<td>217,254</td>
</tr>
<tr>
<td>TAK Agro</td>
<td>849</td>
<td>1</td>
<td>10,700</td>
</tr>
<tr>
<td>2011 Scale up</td>
<td>703</td>
<td>25</td>
<td>1,821,000</td>
</tr>
</tbody>
</table>
Annex 1: M4P diagnostic cone

The M4P diagnostic cone illustrates the process M4P practitioners follow in defining the focus of an intervention. The structure of this case study mirrored this process: Section 1 described the context of market dysfunction by highlighting the relevance of fertiliser markets for reducing poverty and for increasing access of the poor to such markets. Section 2 analysed the market constraints by discussing first the symptoms of dysfunction from the perspective of the poor and moving down to the root causes of constraint in the market system. Lastly, Section 3 defined the focus of the intervention strategy.
Annex 2: Impact logic of Notore’s Fast Track pilot

As shown in the impact logic framework for the Fast Track pilot, the objective was to generate over ₦36 million in additional income for poor farmers through sales of 80,000 1-kg bags of fertiliser. As this framework also illustrates, Notore was unable to develop a new blend of sulphur-containing fertiliser due to organisational constraints in production and working capital.
Annex 3: Target vs. actual performance of Notore’s Fast Track pilot

As the table shows, the performance of Notore in realising its fertiliser sales and revenue targets for this pilot was less than optimal. The four key levers for Notore’s low numbers were (1) the 50% achievement of the DP target, which cut the programme’s potential for success immediately in half; (2) inefficient DP supply logistics to VPs; (3) the 20% achievement of the demonstration plot target by VPs.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Target</th>
<th>Actual</th>
<th>Performance over target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of states</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Avg. number of DPs per state</td>
<td>2</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Avg. number of VPs per DP</td>
<td>20</td>
<td>25</td>
<td>125%</td>
</tr>
<tr>
<td>Avg. number of demos per VP</td>
<td>10</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Avg. farmers reached per VP</td>
<td>50</td>
<td>30</td>
<td>60%</td>
</tr>
<tr>
<td>Avg. purchase per farmer (kg)</td>
<td>2</td>
<td>3.5</td>
<td>175%</td>
</tr>
<tr>
<td>Total fertiliser sales (kg)</td>
<td>80,000</td>
<td>7,500</td>
<td>9%</td>
</tr>
<tr>
<td>Price per kg (Urea)</td>
<td>100</td>
<td>120</td>
<td>120%</td>
</tr>
<tr>
<td>Price per kg (NPK)</td>
<td>100</td>
<td>150</td>
<td>150%</td>
</tr>
<tr>
<td>Total revenue (Naira)</td>
<td>8,000,000</td>
<td>675,000</td>
<td>8%</td>
</tr>
</tbody>
</table>

Annex 4: Incentive structure for Notore’s On-Track VPs

<table>
<thead>
<tr>
<th>Who</th>
<th>Target</th>
<th>Reward</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial reward</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village Promoter</td>
<td>Sell 0.5 metric tons</td>
<td>Notore-branded SIM-locked mobile phone</td>
</tr>
<tr>
<td></td>
<td>Organise 5 demo plots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organise 3 market storms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reach 200 farmers</td>
<td></td>
</tr>
<tr>
<td>Distribution Partner</td>
<td>Attend FIPS-Africa training</td>
<td></td>
</tr>
<tr>
<td><strong>Mid-term reward</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village Promoter</td>
<td>Sell 3.5 metric tons</td>
<td>Have access to a Notore motorbike to facilitate supply logistics</td>
</tr>
<tr>
<td></td>
<td>Organise 8 demo plots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organise 5 market storms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reach 500 farmers</td>
<td></td>
</tr>
<tr>
<td><strong>End-term reward</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village Promoter</td>
<td>Sell 15 metric tons</td>
<td>Own the Notore motorbike he had used</td>
</tr>
<tr>
<td></td>
<td>Organise 15 demo plots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organise 15 market storms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reach 1,000 farmers</td>
<td></td>
</tr>
</tbody>
</table>
Annex 5: On-Track distribution model—achieving scale through decentralised rural entrepreneurship

Notore sells small packs to 12 selected Distribution Partners (DPs)

Each DP sells his small packs to 10–20 Village Promoters (VPs)

Each VP is required to organise demonstration plots. Minimum required level is five demonstrations per VP. Target is 10.

Each demonstration plot is expected to reach a minimum of 50 farmers. Target is 100 farmers.

Result: Education of 2,500–20,000 farmers per Distribution Partner.
Total target impact: 180,000 farmers reached.
Annex 6: Locations in Nigeria for On-Track intervention rollout

On-Track
1) 12 states and 15 locations by May ‘10
2) Represents target area
Annex 7: Comparison of final Fast Track vs. On-Track metrics

The diagram shows that Notore improved its level of target achievement from the Fast Track pilot to the On-Track project. While the average number of VPs per DPs metric declined, this gave most DPs more manageable spans of control. Furthermore, two key metrics improved: number of demonstrations per VP, and total fertiliser sales.
Notes

9 PrOpCom assessment showed an average increase in yield of 32% by using high-quality fertiliser with the proper application and spacing techniques compared to the control group’s use of other fertiliser, and an increase of 53% over non-use of fertiliser (maintaining constant other variables such as crop, planting techniques, location, irrigation, etc.). FEPSAN cited an increase in yield of 30% (presentation at Africa Fertilizer Summit, 2006, Abuja, Nigeria).
18 Alhaji Ashafa, a Fast Track demonstration participant and fertiliser buyer.
19 See figure 6 (unpublished report).
20 Figures reported are based on 26 July 2011 interim data as provided by Notore and do not reflect the full scale of anticipated impact for the 2011 scale-up.
21 The 50 VPs hired for the Fast Track pilot also worked for On-Track, and are represented the portions of land upon which Notore fertiliser was applied—not the whole farm plot.
22 The Operational Market System so that it works better for the poor”, p 6.
23 In addition to the 150 TRPs hired by TAK, five Promotion Coordinators were hired to manage the TRPs in the field.
24 Figures reported are based on 26 July 2011 interim data as provided by Notore and do not reflect the full scale of anticipated impact for the 2011 scale-up.
25 Estimate based on the On-Track sales average of 3.6 kg per farmer and reported sales volume of 1,821 MT as of 26 July 2011.
26 This is an estimate based on the On-Track average income increase per farmer of ₦1,326 (33.4%).