Assessment of Sustainable Agro-dealer Networks

*Full Engagement Materials from Studies in Tanzania and Nigeria*

This report was prepared for the African Fertilizer and Agribusiness Partnership in collaboration with Monitor Deloitte, with funding from the Bill & Melinda Gates Foundation.

For more information, contact Jason Scarpone at jscarpone@afap-partnership.org or Pradeep Prabhala at pprabhala@deloitte.com
# Table of Contents

- **Summary of Hub Development Intervention**
  - Defining Agro-dealer Networks in sub-Saharan Africa
  - Market Insights: Tanzania
  - Market Insights: Nigeria
  - Assessment of Agro-Dealer Interventions
• Rural agro-dealers across sub-Saharan Africa face a number of challenges when selling and distributing agricultural inputs to smallholder farmers; these include: weak end consumer demand, high transaction costs, stock-outs, and working capital constraints

• Similarly, leading input suppliers face a number of challenges when distributing inputs to rural agro-dealers and smallholder farmers, which create sources of financial risk for the input suppliers

• These factors limit the sustainability of agro-dealers and their ability to scale, which hinders the development of robust agro-dealer networks, and therefore the efficient distribution of agro-inputs

• “Hub” agro-dealers (or wholesalers) have proven to be able to alleviate many of the challenges that both suppliers and rural agro-dealers face in supply and distribution; hubs build and aggregate consumer demand, enable fewer points of sale, have storage capacity, and reduce bad debts & improve the investment cycle

• Rural agro-dealers that link with hubs typically experience volume increases (~20-40%) as well as improvements in profit margins (from ~1- 1.5 pp); similarly, by linking with hubs, agro-dealers are better able to manage inventory and gain access to favourable credit terms, which assists with better working capital management and significantly improving their ROI (~2X)

• However, not all rural agro-dealers experience these benefits; many rural agro-dealers cannot be economically reached due to prohibitive transport costs (which vary by region)

• Based on our analysis, approximately ~80% of existing rural agro-dealers are located within an economically viable distance from urban and peri-urban centers (where hubs would be located)
• **Hubs may not invest in their own growth** (i.e., bank loan to purchase supplies in bulk) principally because of the perceived and real risks of such investments, these risks include inventory holding risk, market risk, default risk and perception risk

• In the face of these risks, there is **limited incentive for hub agro-dealers to invest in purchasing large quantities of inputs or to invest in capital improvements** because of the uncertainty as to whether they will be able to sell inventory at scale, and therefore will typically not access bank credit

• As a result, **external support is required to lower the investment risk** that hub agro-dealers face when considering serving rural agro-dealers at a greater scale

• However, the **value of a hub intervention is not limited to direct benefits**; a hub intervention **provides the platform for future investments**, including interventions that further **reduce the selling price** of inputs, that facilitate **increased access** to inputs, and **drive demand for inputs through extension services**

• Although there are some **potential risks associated with hub intervention** (e.g., subsidy policy change risk and currency risk), **none appear to be limiting** in the long term

• A **similar approach could be taken elsewhere in SSA as long as a number of similar factors are in place**; in other markets, the policy environment and other variables may lower investment effectiveness

• In Nigeria, the current **GES policy represents significant progress** in terms of encouraging private sector investment in agro-input distribution; by placing **farmers at the centre of the subsidy scheme** and limiting federal government involvement in agro-input distribution, FMARD has made substantial progress in creating an enabling environment

• With **continued reform** to address selected areas where agro-dealers have been negatively impacted, that leverages progress achieved by GES, a **hub intervention model that leverages significant private sector interest** may be **successful in catalysing further change in the Nigerian agro-dealer network**
An agro-dealer is generally an owner-operated retail store that distributes agricultural inputs (primarily fertilizer, seed, and agro-chemicals) to smallholder farmers in sub-Saharan Africa

A typical agro-dealer is a rural or peri-urban shop owner who distributes farm supplies to smallholder farmers.

The size of, and linkages between, agro-dealer businesses varies widely by region, and within regions.

Ideally, agro-dealers play four key roles for SHFs:

1. **Access**: Provide farmers with affordable, convenient, and timely access to quality agro-inputs to enhance yields.
2. **Education**: Provide basic extension services on the best way to apply agro-inputs (e.g., proper usage, safe handling) to achieve favorable economic returns.
3. **Finance**: Provide credit to farmers, often based on relationships not collateral.
4. **Output Markets**: Provide SHFs and consumers with a central location to buy and sell produce.

However, in underdeveloped agricultural markets, the role of agro-dealers is usually limited to distribution and logistics, simply bridging the gap between suppliers and farmers.

Note: For further detail on the variability that exists across agro-dealer networks, see the “Defining Agro-dealer Networks in sub-Saharan Africa” section of this document.
Rural agro-dealers across sub-Saharan Africa face a number of challenges when selling and distributing agricultural inputs to smallholder farmers

**Limited Consumer Demand**
- **Demand-generation activities are costly** (e.g., ~$180 to set up and maintain a demo plot) and agro-dealers often do not have sufficient capital or support from local extension agents, resulting in lower sales
- **Outdated soil maps lead to purchase of inappropriate products** for specific soils or crop types, resulting in weaker than expected yields and discouraging continued purchase of inputs
- **Limited output markets** contribute to postharvest losses (~30-40%), which can negate benefits of input use

**High Transport & Transaction Costs**
- **Poorly maintained or non-existent arterial and feeder road infrastructure** increases transport costs
  - An estimated 90% of district and feeder roads are inaccessible to most vehicles during the rainy season, largely due to lack of bridges and culverts; poor infrastructure causes delays and ~10-15% additional costs
- **Long transport distances drive costs and erode agro-dealer profit margins**
  - A farmer in TZ is on average located ~>50km away from suppliers and 5-10km away from agro-dealers; increased costs are passed to SHFs, who buy less when prices become prohibitive

**Stock-outs & Weak Inventory Mgmt.**
- Rural agro-dealers are typically unable to optimize inventory levels in line with consumer demand, due to poor storage facilities, stock-outs, and inadequate demand management
  - In East Africa, 53% of SHFs report that seed is ‘sometimes available’ or ‘never available’, and similarly for fertilizer (48%) and agro-chemicals (40%)

**Working Capital Constraints**
- Agro-dealers require working capital to manage the seasonal, low margin, nature of their business; however, the **cost of finance is high and qualification conditions are prohibitive**
  - Rural agro-dealers have to put up significant collateral (i.e., fixed assets or houses amounting to 125% of the value of the loan amount) before qualifying for a loan and may face interest rates as high as ~25% on loans
  - **Volatile exchange rates** drives prices for imported inputs and further constrain finances of SHFs & RADs
  - SHFs require inputs at start of planting season, but can only settle payment at harvest time

Sources: 1) In-country interviews with input suppliers and agro-dealers; 2) American Society of Agricultural and Biological Engineers, 2015; 3) World Bank; 4) AGRA PASS Farmer Survey, 2013; Monitor Deloitte Analysis
Similarly, leading input suppliers face a number of challenges when distributing inputs to rural agro-dealers and smallholder farmers, which create sources of financial risk.

**Limited Consumer Demand**

- Limited understanding of the proper usage / benefits of agricultural inputs by farmers constrains demand
  - Fertilizer consumption in SSA is ~13.6 kg/h compared to 120 kg/h in the USA and 154 kg/h in the EU\(^1\)
  - As a result, **significant investment in market development and demand generation is required** to drive sales

**High Transport & Transaction Costs**

- End-consumers are dispersed and located in remote areas, resulting in **high transport costs**
  - Port charges and transport costs increase COGS and subsequently, selling prices; the ICA estimates a 30-40% increase in the cost of traded goods due to poor road, rail and harbor infrastructure\(^2\)
  - Customer dispersion results in **more transactions of smaller volumes driving up selling and administrative costs**
    - Suppliers do not have capacity to manage orders and contracts with many agro-dealers (e.g., one seed company cited 1 sales person needed per 10 agro-dealers)\(^1\)

**High Default Risk & Low ROI**

- High risk of default by agro-dealers; as a result, many input companies only sell on consignment to agro-dealers with whom they have developed good relationships
  - Credit defaults move along the inputs supply chain from the farmer to the agro-dealers and eventually impact the supplier’s working capital and drives up bad debt provisions
  - **Realized bad debt expense was as high as 50% of the working capital provision** made by a leading fertilizer supplier in Tanzania for the 2013/14 financial year (~5-10% of sales)\(^1\)
- **Payment lags from government subsidies** further constrain the working capital of suppliers
  - Most governments do not have adequate funding levels to maintain subsidy payments; in both Nigeria and Tanzania delays in subsidy payments have impacted suppliers

Sources: 1) In-country interviews with input suppliers and agro-dealers; 2) Infrastructure Consortium of Africa; Monitor Deloitte Analysis
The Advantage of Wholesale Agro-dealers (“Hubs”)

“Hub” agro-dealers (or wholesalers) have proven to be able to alleviate many of the challenges that both suppliers and rural agro-dealers face in supply and distribution.

The Value of the “Hub” Model

1. **Build Consumer Demand**
   - Hub agro-dealers serve a larger market, have greater working capital flexibility, and often have an agronomist on staff, driving consumer demand for both suppliers and rural agro-dealers.

2. **Aggregate Demand**
   - Hubs demand much higher volumes than rural agro-dealers, lowering per unit distribution and transaction costs for suppliers; higher volume orders enable volume discounts which are passed on to rural agro-dealers.

3. **Enable Fewer Points of Sales**
   - There are much fewer hubs (i.e. ~100 hubs in TZ), lowering transaction costs and enabling sale on credit, which often enables rural agro-dealers to also buy on credit.

4. **Have Storage Capacity**
   - Hub agro-dealers (often) have storage capacity, which facilitates large purchases from multiple suppliers, lowering transaction costs, and helps rural agro-dealers minimize risk of stock-outs of a variety of products.

5. **Reduce Bad Debts and Improve Investment Cycle**
   - Hubs have a better track record of paying back their debt; additionally, through facilitating improvements in the working capital and investment cycle, hubs drive a 20-40% increase in volume sales and facilitate a ~2.1X increase in ROI.

Sources: Monitor Deloitte Analysis; AFAP; In-country interviews with input suppliers and agro-dealers.
Based on our analysis, rural agro-dealer revenues generally increase by 20 – 40% when working with hub agro-dealers (as opposed to buying from suppliers).

**Growth in Quantity Sold per Rural Agro-Dealer**

- By linking with hubs, this could drive volume increase of approximately 3 MT of fertilizer, 0.1 MT of seed, and 0.2 MT of CPP on average, per rural agro-dealer (based on average increases across rural agro-dealers assessed).

**Revenue Growth per Rural Agro-Dealer**

- These volumes represent an average increase in sales revenue of ~$4K per rural agro-dealer, which represents a ~31% increase in the business of each rural agro-dealer (using the midpoint estimate).

Interventions to strengthen hub agro-dealers not only improve revenues for hub agro-dealers and rural agro-dealers, but also drive increased volumes of agricultural inputs sold in the market.

Sources: IFPRI, 2012; Interviews with Input Stakeholders and Agro-dealers in Tanzania; Monitor Deloitte Analysis
*“Hub” Advantage for Rural Agro-Dealers (2 of 4) Profitability (Absolute & Net Margin)*

Furthermore, when rural agro-dealers are connected to hubs, they experience ~70% improvement in absolute profitability and higher margins

<table>
<thead>
<tr>
<th>Illustrative Rural Agro-Dealer Annual Income Statement (USD)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$14,000</td>
<td>$18,500</td>
</tr>
<tr>
<td>− Cost of Sales</td>
<td>$11,500</td>
<td>$15,000</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>$2,500</td>
<td>$3,500</td>
</tr>
<tr>
<td>− Transport</td>
<td>$1,000</td>
<td>↓ $500</td>
</tr>
<tr>
<td>− Storage</td>
<td>$300</td>
<td>↑ $600</td>
</tr>
<tr>
<td>− Marketing</td>
<td>–</td>
<td>↑ $300</td>
</tr>
<tr>
<td>− Other OPEX</td>
<td>$200</td>
<td>$200</td>
</tr>
<tr>
<td>Net Profit Before Tax</td>
<td>$1,000</td>
<td>$1,900</td>
</tr>
<tr>
<td>− Taxes</td>
<td>$300</td>
<td>$600</td>
</tr>
<tr>
<td>Net Profit After Tax</td>
<td>$700</td>
<td>$1,300</td>
</tr>
<tr>
<td>Net Margin</td>
<td>~5%</td>
<td>~7%</td>
</tr>
</tbody>
</table>

### Hub Impact on Agro-Dealers

**Drives demand, enables timely purchase and distribution of larger volumes**

- Hubs improve transport efficiency and have storage to ensure timely delivery of inputs / minimize stock-out risk
- Extension from hubs builds customer demand
- Higher volume orders enable volume discounts which are passed on to rural agro-dealers, reducing per unit cost of sales; however, hubs also enable rural agro-dealers to buy greater volumes on credit

**Reduces transport costs and enables storage and marketing spend, while still improving net margin**

- Without hubs, rural agro-dealers have to travel far distances to reach supplier depots in urban centers; costs are exacerbated by frequent trips for small quantities under poor road conditions; regional and district level hubs alleviate this cost by reducing distance
- Given lower transaction and transport costs, rural agro-dealers can lower prices to SHFs and still make profit; they can also rent storage space to store greater volumes and invest in demand generation activities (e.g., demo plots)

<table>
<thead>
<tr>
<th>Per Unit Breakdown (per 50kg fertilizer bag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Sales</td>
</tr>
<tr>
<td>Transport</td>
</tr>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>Marketing</td>
</tr>
<tr>
<td>Other Costs</td>
</tr>
<tr>
<td>Net Margin</td>
</tr>
</tbody>
</table>

Notes: Figures and assumptions based on interviews with agro-dealers in Tanzania and actual 2012 hub agro-dealer income statements provided to AFAP; Monitor Deloitte Analysis
Similarly, by linking with hubs, agro-dealers are able to better manage inventory and gain access to favourable credit terms, which assists with better working capital management.

<table>
<thead>
<tr>
<th>Illustrative Rural Agro-Dealer Investment Cycle (Days)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Cycle</td>
<td>164</td>
<td>102</td>
</tr>
<tr>
<td>Days Sale of Inventory</td>
<td>66</td>
<td>38</td>
</tr>
<tr>
<td>Days Sale Outstanding</td>
<td>105</td>
<td>83</td>
</tr>
<tr>
<td>– Days Payable Outstanding</td>
<td>(7)</td>
<td>(18)</td>
</tr>
<tr>
<td>Net Margin</td>
<td>5.4%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

**Hub Impact on Rural Agro-Dealers**

- **Improves inventory management over the year through improved supply management, minimizing stock-outs**
  - By linking with hubs, rural agro-dealers are able to ensure consistency of supply, which helps minimize stock-outs and ensure demanded products are stocked on agro-dealer shelves, leading to efficient inventory management.
  - Hubs facilitate demand generation, which facilitates more efficient inventory turn and minimizes the time that products remain on agro-dealer shelves.

- **Increases credit sales through freeing up working capital and facilitating larger, consolidated purchases**
  - Hubs help to drive revenue, while the shorter inventory turn cycle frees up working capital; both factors facilitate increased credit sales by rural agro-dealers to larger customers, improving days sale outstanding.

- **Improved (longer) payment terms with suppliers**
  - Smaller agro-dealers typically benefit from improved supplier terms when they link with hubs as opposed to dealing directly with suppliers, therefore allowing agro-dealers more time to pay suppliers.

**ROI (%)**

<table>
<thead>
<tr>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>~12%</td>
</tr>
</tbody>
</table>

Notes: Figures based on annual reports and interviews with hub agro-dealers and agro-dealers in Tanzania; Africa Fertilizer Historical Prices; Analysis assumes investment funded by equity as rural agro-dealers typically do not have access to credit due to a lack of collateral and high cost of credit; Monitor Deloitte Analysis.

Up to ~2.1X
These improvements in the time that cash remains in the investment cycle translate into significant improvements in ROI for rural agro-dealers.

<table>
<thead>
<tr>
<th>Rural Agro-Dealer Investment Cycle (Days)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Cycle</td>
<td>164</td>
<td>102</td>
</tr>
<tr>
<td>Days Sale of Inventory</td>
<td>66</td>
<td>38</td>
</tr>
<tr>
<td>Days Sale Outstanding</td>
<td>105</td>
<td>83</td>
</tr>
<tr>
<td>- Days Payable Outstanding</td>
<td>(7)</td>
<td>(18)</td>
</tr>
</tbody>
</table>

![Diagram showing Days Sale of Inventory, Days Sale Outstanding, Days Payable Outstanding, and Working Capital Turn per annum.]

<table>
<thead>
<tr>
<th>ROI (%)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>~12%</td>
<td>~25%</td>
</tr>
</tbody>
</table>

**Investment Cycle**
Time it takes for a company to turn cash over in its operating cycle

**Days Sale of Inventory**
Average no. days it takes to turn inventory into sales
\[(\text{Inventory/cost of sales})\times365\]

**Days Sale Outstanding**
Average no. days it takes to collect revenue after sale made
\[(\text{Receivables/credit sales})\times365\]

**Days Payable Outstanding**
Average no. days it takes to pay suppliers after purchase
\[
\text{Payables}/(\text{cost of sales/365})
\]

Notes: Figures based on annual reports and interviews with hub agro-dealers and agro-dealers in Tanzania; Africa Fertilizer Historical Prices; Analysis assumes investment funded by equity; Monitor Deloitte Analysis
Distribution of Rural Agro-Dealers, Cost of Transport (1 of 2)

However, not all rural agro-dealers will experience the described benefits by connecting to hubs; many cannot be economically reached due to prohibitive transport costs (which vary by region)

- Reach radius varies by region due to infrastructural and operational constraints; areas near Dar es Salaam and along the Southern Corridor generally have better infrastructure than remote inland areas
- The reach radius represents the furthest transport distance between a hub and a rural agro-dealer that a hub is willing to travel to distribute inputs (past this radius, the per unit transport costs become prohibitive and margin is not sufficient)

Note: 1) The analysis assumes a hub hurdle rate when transport costs comprise ~80% of the margin; text in black = city names and locations; text in grey = region name
Source: Previous BMGF agro-dealer mapping (incl. some hubs), n=891; AfricaFertilizer.org and IFDC, 2014; Interviews with Agro-dealers in Tanzania; Monitor Deloitte Analysis
Based on our analysis, approximately 80% of existing rural agro-dealers are located within an economically viable distance from urban and peri-urban centers (where hubs would be located).

**Hub Agro-Dealer Reach by Region, Tanzania**

**80% of current agro-dealers (~1,900 of 2,400) could be reached by hubs based in urban and peri-urban areas**

<table>
<thead>
<tr>
<th>Major Distribution Center</th>
<th>Approx. Reach Radius (km)</th>
<th>Map Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iringa</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Kibaha (Pwani)</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Morogoro</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Tanga</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Makambako (Njombe)</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Moshi (Kilimanjaro)</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Arusha</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Singida</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Mbeya</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Songea (Ruvuma)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Bukoba (Kagera)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Geita</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Katavi</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Kigoma</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Musoma (Mara)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Mwanza</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Shiayanga</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Sumbawanga (Katavi)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Tabora</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on previous BMGF mapping of agro-dealers (includes some hubs), n=891; AfricaFertilizer.org and IFDC, 2014; Interviews with Agro-dealers in Tanzania; Monitor Deloitte Analysis
Risks of Investment for Hub Agro-Dealers

**Hubs don’t exist today, or they do exist but do not invest in their own growth (i.e. bank loan to purchase supplies in bulk), principally because of the perceived and real risks of such investments**

- **INVENTORY HOLDING RISK**
  Hubs do not have an assurance that held inventory will be sold and risk holding expensive stock for extended periods of time.

- **MARKETING RISK**
  Demand for inputs is typically low, requiring investments in demand generating activities, however it is uncertain that investments will yield sufficient improvements in demand.

- **DEFAULT RISK**
  Should hubs not be able to move inventory, the hub may be faced with prohibitive costs of servicing debt and risks defaulting on loans.

- **PERCEPTION RISK**
  Risk of not being able to execute as a larger operation without some form of technical assistance, business management training, or operational support.

*In the face of these risks, there is limited incentive for hub agro-dealers to invest in purchasing large quantities of inputs or to invest in capital improvements e.g., for storage capacity because of the uncertainty as to whether they will be able to sell inventory at scale.*

Hub agro-dealers therefore will typically not access bank loans or invest their own capital into their businesses due to these key risks.

As a result, agro-dealers require catalytic capital to improve the risk adjusted return on investment to scale their businesses.

Source: In-country interviews with agro-dealers and hub agro-dealers; AFAP; AGRA Market Access; Monitor Deloitte Analysis
Types of External Support Required

As a result, external support is required to lower the investment risk that hub agro-dealers face when considering serving rural agro-dealers at a greater scale.

<table>
<thead>
<tr>
<th>Type of Support</th>
<th>Risks Addressed</th>
<th>Investment Duration</th>
<th>Investment Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUARANTEE FACILITY</td>
<td><strong>Credit Guarantee</strong> • Agreement to share initial credit losses with supplier form transacting with hubs – Input supplier commits to provide trade credit to hubs, in return, guarantor agrees to share credit losses (up to a pre-determined amount) on a 50/50 basis</td>
<td>• Mitigates inventory holding risk and default risk as guarantor will pay supplier in the event of default</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRANT FUNDING</td>
<td><strong>Matching Grants</strong> • 50% contribution to the cost of construction of storage facilities (or other construction projects) whereby hubs raise remaining capital through retained earnings or external loans</td>
<td>• Mitigates investment risk for hubs through reducing capital requirements necessary for scale • Reduces inventory holding risk by facilitating greater inventory flexibility (through storage)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Capacity Building</strong> • Business management training to improve business operations and financial acumen • Technical assistance on input usage to improve efficacy of marketing activities and extension, e.g., through provisions to hire an agronomist</td>
<td></td>
<td>• Mitigates perception risk associated with dealing with hub agro-dealers e.g., through facilitating improved financial reporting and implementing financial controls • Mitigates marketing risk by facilitating demand-generating activities</td>
</tr>
</tbody>
</table>

**Inventory Holding Risk** • Default Risk • Marketing Risk • Perception Risk
### Path Forward: Potential Risks

There are some potential risks associated with the hub intervention in Tanzania; none appear to be limiting.

#### Factors Potentially Impacting Intervention Model

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subsidy Policy Changes</strong></td>
<td>Changes to Tanzania’s fertilizer subsidy policy in 2014/15 resulted in farmers paying up to 30% more for fertilizer, which resulted in a large drop in volumes sold.</td>
</tr>
<tr>
<td><strong>Regulatory Bottlenecks</strong></td>
<td>Import taxes and quotas affecting suppliers’ ability to procure raw material for blending operations can negatively affect ability to service demand profitably.</td>
</tr>
<tr>
<td><strong>Output Market Conditions</strong></td>
<td>Under-developed or insufficient output markets for crops could result in farmers being unable to recoup investment in inputs from sales of improved yields, negatively affecting input demand in future.</td>
</tr>
<tr>
<td><strong>Ineffective Government Procurement</strong></td>
<td>Government’s inability to make timely payments to suppliers (in the case of the subsidy program) has led to some suppliers being left at the brink of insolvency.</td>
</tr>
<tr>
<td><strong>Currency Fluctuations</strong></td>
<td>Many inputs are imported and prices are subject to exchange rate fluctuations which inhibit agro-dealers’ ability to manage COGs and adequately forecast demand.</td>
</tr>
<tr>
<td><strong>Constrained Working Capital</strong></td>
<td>Agro-dealers who raise capital for warehouse construction with loan-funding (to pay 50% contribution) may face working capital constraints which limited their ability to buy and sell larger product volumes.</td>
</tr>
</tbody>
</table>

Source: In-country interviews with agro-dealers and hub agro-dealers; AFAP; AGRA Market Access; Monitor Deloitte Analysis
Catalyzing Change Beyond Tanzania

A hub development approach could be taken elsewhere in SSA and drive similar improvements in access, price, and sales volumes for agro-dealers as long as the agro-inputs market is sufficiently developed.

Considerations of Agro-dealer “Hub” Investments Beyond Tanzania

The inputs market has sufficiently evolved when the following factors are present to some extent:

- **SHF Demand for Inputs**: Nascent but growing demand for higher quality agricultural inputs; investments have been made by external parties in demand-generation activities.

- **Role of Government**: Limited government distortion within the distribution network of agricultural inputs; gov’t may be involved in inputs sector (through for example subsidies) but enables private sector to control distribution.

- **Private Sector Presence**: Private sector players (suppliers, distributors, etc.) are located in the market, and potentially making investments in their distribution channels.

- **Infrastructure**: The country has a strong highway and feeder road system such that rural agro-dealers are accessible by larger trucks and can be effectively reached by hub agro-dealers.

- **Agro-Dealer Networks**: A high percent of inputs sold to smallholder farmers are purchased via agro-dealers; robust agro-dealer association (and other enabling factors); opportunity for coordination.

Intervention in Nigeria may have significant potential given recent shift in policy direction.

Note: Countries highlighted are based on high-level desktop research, and not in-country analysis.

Should these factors not be present, then investing in hubs to improve access is unlikely to result in improved sales volumes and price reductions from more efficient distribution; exogenous market factors such as the policy environment and inadequate infrastructure may lower investment effectiveness.
In Nigeria, the GES policy represents significant progress to encourage private sector involvement in agro-input distribution, however there have been some unintended consequences for agro-dealers.

<table>
<thead>
<tr>
<th>SHFs were placed at the centre of the subsidy scheme</th>
<th>Suppliers received the subsidy directly under previous subsidy schemes, under the GES farmers were the recipients of subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov’t involvement in procurement and distribution was reduced</td>
<td>Federal gov’t involvement in procurement and distribution was reduced (and de-centralised) to state level, which improved incentives for private sector distribution</td>
</tr>
<tr>
<td>Gov’t intention to support GES, but reduce importance</td>
<td>Gov’t’s stated intention is to continue to support the GES scheme, but to reduce the policy’s importance over time, and government involvement in the sector</td>
</tr>
</tbody>
</table>

The Nigerian government has made significant progress in developing an enabling environment for private sector players in agro-input distribution; future policy iterations should seek to address some of the factors constraining the private sector in distribution.
Furthermore, indications of market potential, private sector investment and government policy direction provide may provide support for private and donor investment.

### Case for Change

**Significant Market Potential**
- 60% of Nigeria’s ~170 million people are farmers
- Demand for inputs in Nigeria is significantly greater than current supply
  - Current fertilizer usage is 17.8 kg/ha, below the 50 kg/ha Abuja Declaration
  - Potential demand for fertilizer is 3.5 million MT, while actual sales are ~1 million MT (29%)

**Private Sector Investment**
- While government dominates inputs distribution (60-70% of fertilizer sold), local companies (e.g., Notore, Golden Fertilizer, Dangote, Indorama) and large international players (e.g., Syngenta) are investing in farmer education and developing innovative models to integrate agro-dealers into their supply chains
- 30 companies have committed to invest $3.8 billion in Nigeria’s agricultural sector (through Grow Africa); however, limited infrastructure, supply security, and poor financing / access to capital have stalled progress; as of 2014, total realized investment has only been $680 million

**Policy Outlook of New Government**
- President Buhari has committed to diversifying the Nigerian economy away from oil into agriculture
- Government aims to have Nigeria become a net exporter of grains by 2019 and has placed emphasis on increasing productivity of sector

“At’s time to go back to the land. We must face the reality that the petroleum we had depended on for so long will no longer suffice...we are ready to assist as many want to go into agricultural ventures...”

– President Muhammadu Buhari

### Sources:
1. World Bank
2. FEPSAN, 2010
3. Grow Africa
4. Interviews with inputs stakeholders and company reports
5. NAIJ News, 2015; Monitor Deloitte Analysis
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Summary of Hub Development Intervention</td>
</tr>
<tr>
<td>▪ <strong>Defining Agro-dealer Networks in sub-Saharan Africa</strong></td>
</tr>
<tr>
<td>▪ Market Insights: Tanzania</td>
</tr>
<tr>
<td>▪ Market Insights: Nigeria</td>
</tr>
<tr>
<td>▪ Assessment of Agro-Dealer Interventions</td>
</tr>
</tbody>
</table>
Overview of Agricultural Input Distribution in SSA

Agro-dealers play a critical role in ensuring smallholder farmers have access to high quality agricultural inputs in sub-Saharan Africa.

Input Distribution in Sub-Saharan Africa
(Variations Exist Across Countries; Illustrative)

There are ~50,000 agro-dealers across SSA, selling inputs and providing services to farmers. In countries with relatively strong private sectors, they are the primary distribution channel for agricultural inputs.

In order to sell agricultural inputs in most countries, one needs to register the business and apply for certification with the regulatory authority (usually under the Ministry of Ag.) to distribute chemicals & fertilizer.

Most countries in SSA have agro-dealer associations which provide various degrees of support and services for agro-dealers, and enable lobbying and advocacy for the industry.

Notes: 1) Approximate based on distribution of fertilizer across distribution channels, averaged across countries (Source: AGRA PASS Final Reports); (2) Estimate based on actual figures from AGRA-PASS ADP; for countries not represented, estimated based on fertilizer/chemical consumption in markets (Source: FAO, AGRA-PASS, MD Analysis)
... but agro-dealers vary across a number of different dimensions, including what they sell, services they provide, how distribution occurs, method of sale, and how they’re organized

**PRODUCT OFFERINGS**

Products sold vary across country, but generally include crop protection products, fertilizers, and seeds. Sometimes storage products and equipment are sold.

**SERVICES PROVIDED**

Services provided by agro-dealers may include education & extension services, offtake & output purchase, finance & credit support, or storage support.

**METHOD OF SALE**

Generally product is sold via a small retail store front, but variability exists, especially when the farmer population is more disperse – in which case forms of mobile selling are leveraged.

**DISTRIBUTION MODEL**

Distribution models vary across geographies, and are usually dependent on farmer concentration in rural areas. Higher concentration usually means less intermediation.

**OWNERSHIP STRUCTURE**

Many agro-dealers are owner-operated, in which one retail store front is owned; variability does exist, and new models are emerging (although nascent) such as franchise models.
The majority of agro-dealers across sub-Saharan Africa sell three product lines: agro-chemicals, fertilisers, and certified seed; some larger and more established dealers sell other agricultural products.

<table>
<thead>
<tr>
<th>Product Offerings</th>
<th>Services Provided</th>
<th>Method of Sale</th>
<th>Distribution Model</th>
<th>Ownership Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERTIFIED SEEDS</strong></td>
<td>Almost all agro-dealers in SSA sell various varieties of certified seed – from grains, to improved varieties, to local or imported hybrids. Seeds sold span the mix of crops grown in the respective country.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FERTILIZERS</strong></td>
<td>Fertilizer is the most commonly sold agricultural input by agro-dealers across SSA (driving up to 60-70% of input sales in many instances); inorganic blends are more frequently sold than organic varieties; a variety of blends are sold based on region or country-specific soil characteristics.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AGRICULTURAL TOOLS &amp; MACHINERY</strong></td>
<td>Some agro-dealers carry various tools such as rakes, hoses, water cans, and crop sprayers; small agro-dealers (less than $20K in sales) usually don’t carry, but medium sized dealers will. Large hub agro-dealers often carry light machinery such as tractors, power tillers, slashers, etc. but it is uncommon.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CROP PROTECTION / AGROCHEMICALS</strong></td>
<td>The majority of agro-dealers in SSA sell agrochemicals; products sold vary based on the country / region and bugs, diseases, etc. faced but glyphosate is most commonly sold chemical in SSA. Chemicals command high margin for agro-dealers but less volume sales.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STORAGE &amp; HANDLING PRODUCTS</strong></td>
<td>Some agro-dealers carry products for storing &amp; handling agricultural output for post-harvest storage &amp; handling; may include plastic crates for high-value crops, insecticide treated bags (i.e. Super Grain or ZeroFly bags), etc. Less common driver of agro-dealer sales.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VETERINARY PRODUCTS</strong></td>
<td>A very small number of agro-dealers sell veterinary products, but more common in regions where livestock is raised; revenue drivers may include animal feeds, disease prevention &amp; control products, branding products, etc. Generally, larger and more sophisticated dealers carry such products.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the majority of sub-Saharan African countries, certified agro-dealers – or distributors of agricultural products – are restricted from carrying any food items or other consumer products.

Most significant drive of agro-dealer sales across relevant market in SSA; among ~30 agro-dealers surveyed, over 90% exclusively carry seed, fertilizer, and chemicals.
**Services Provided**

While most agro-dealers sell various agricultural inputs, their service to smallholder farmers goes beyond simply providing access to inputs.

<table>
<thead>
<tr>
<th>Product Offerings</th>
<th>Services Provided</th>
<th>Method of Sale</th>
<th>Distribution Model</th>
<th>Ownership Structure</th>
</tr>
</thead>
</table>

### Education & Extension Services

- **Agro-dealers provide educational information to SHFs** on seed quality, seed dressing, method of planting, rate & method of chemical or fertilizer application, choice of chemical/fertilizer, appropriate handling, safety, and risks.
- **Generally more trusted than gov’t extension officers**; agro-dealers live and work in the communities they serve, and have longstanding relationships with the farmers they sell to.
- **High prevalence among agro-dealers in SSA**; most agro-dealers across SSA provide some degree of educational and extension support.

### Offtake Services

- Many agro-dealers recognize the importance of creating strong purchasing power among their customer base for the next planting season, and thus purchase or support the sale of agricultural output from farmers after bumper harvests. Models typically include: (1) buy, store, and look for a buyer needing higher volumes, or (2) buy, process, and develop value-added services, or (3) create linkages to buyers.
- **Very uncommon among smaller agro-dealers**, but becoming more common among hub agro-dealers; less than 10% involved in offtake activities though to a limited extent given working capital constraints.

### Finance Services & Support

- Agro-dealers build close relationships with the farmers they serve, and often sell on credit to farmers they trust and who have proven to timely pay for inputs; in East Africa, 20-50% of purchase price is often required to be paid upfront, and the remaining 50-80% when the output is sold after harvest.
- Among ~40 interviews conducted in previous engagements in Ghana, Nigeria, Uganda, Tanzania, and Kenya, over 85% of agro-dealers sell inputs to farmers on credit without any collateral.

### Offtake Services

- **Agro-dealers with warehouse facilities or access to metal or plastic siloes offer storage support to smallholder farmers**; generally, the terms are a leasing arrangement in which the agro-dealer is paid upon the sale of the output.
- **Very uncommon among smaller agro-dealers**, but becoming more common among hub agro-dealers with greater working capital flexibility, or who have access to donor services. For example, AFAP in Tanzania has provided matching grants to 13 agro-dealers for the build or expansion of storage facilities (mainly for their own products).
There are different methods that agro-dealers leverage to sell agricultural inputs to smallholder farmers; however, the most common is a small retail storefront located in peri-urban and rural areas.

### Method of Sale

<table>
<thead>
<tr>
<th>Product Offerings</th>
<th>Services Provided</th>
<th>Method of Sale</th>
<th>Distribution Model</th>
<th>Ownership Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Hub” Agro-Dealers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Location: Urban Centers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hub agro-dealers primarily sell to smaller rural agro-dealers; generally located near urban centers; SHFs located close to these dealers do buy direct from hub dealers, but it’s infrequent; sales generally above $1 million (USD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>~5-10% OF AGRO-DEALER INPUT SALES TO FARMERS ACROSS SSA(^1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Small Retail Storefront** | | | | |
| Retail storefronts are the primary point-of-sale for agro-inputs to SHFs across SSA; generally, a license to sell and certification to distribute are required; usually part of agro-dealer associations; sales generally between $50,000 - $750,000 (USD) | | | | |
| ~70-80% OF AGRO-DEALER INPUT SALES TO FARMERS ACROSS SSA\(^2\) | | | | |

| **Mobile Retailers** | | | | |
| Mobile retailers typically buy from retail store fronts (sometimes from “hubs”) and sell out of the back of vehicles to SHFs; usually they are unlicensed and not certified to distribute; often counterfeits sold via mobile retailers; sales generally less than $50,000 (USD) | | | | |
| ~10% OF AGRO-DEALER INPUT SALES TO FARMERS ACROSS SSA\(^3\) | | | | |

| **“Last Mile” Distributors** | | | | |
| Last mile distributors are typically opportunistic farmers looking to sell a small selection of popular agricultural inputs (often by bike/scooter); often unlicensed and not certified and usually less familiar with proper application; sales minimal and variable | | | | |
| ~5% OF AGRO-DEALER INPUT SALES TO FARMERS ACROSS SSA\(^3\) | | | | |

Note: Approximate breakdown based on Monitor Deloitte’s work with agro-dealers across sub-Saharan Africa (~40 agro-dealers interviewed)
Distribution Model Employed

The most common distribution model employed by agro-dealers involves a high degree of intermediation between input suppliers and SHFs, although new promising models are emerging.

### INTERMEDIATED MODEL

- This model is the most common distribution model across markets in SSA; agro-dealers buy inputs from suppliers based locally or from other agro-dealers, depending on their location, size, relationships, and working capital; they sell to other smaller agro-dealers, or direct to farmer.
- Generally the model is defined by high degrees of intermediation along the supply chain, making the model vulnerable to counterfeit inputs, higher price points charged to farmers, less coordinated distribution, and disaggregated demand.

### HUB & SPOKE MODEL

- Typically, this model is employed in areas where the agro-dealer networks are more mature and/or have experienced some form of external intervention/support; it's less common than #1.
- Large hub agro-dealers buy from suppliers based locally in urban centres, and have a network of smaller rural agro-dealers that they serve (sometimes as many as 200-300 served).
- Usually these hubs have close relationships with rural agro-dealers and sell on consignment; agro-dealers are less working capital constrained than those in the intermediated model.

### DIRECT IMPORT MODEL

- Similar to “hub & spoke”, but in this model, large agro-dealers import directly from India, China, and other global markets, and do not buy from local suppliers or importers (who typically add ~20% margin on import price); once product is imported, they sell directly to rural agro-dealers.
- This model is very rarely employed by agro-dealers, and requires significantly more working capital (typically volume orders need to be 35-50x the amount that most hub agro-dealers buy from suppliers); lack of storage facilities also constrain agro-dealers from employing model.
Ownership Structure

The vast majority of agro-dealers in sub-Saharan Africa are owner-operated retail stores; however, there are new models emerging although they are nascent and one-off

**Owner-Operated Model**

- The **vast majority of agro-dealers in SSA are owner-operated**; usually, the owners are former farmers who have begun selling inputs based on small capital investments after bumper harvests.
- Most **owners have completed secondary education**, as this is often a requirement for becoming certified to sell agro-inputs (e.g., Kenya, Tanzania, Uganda).
- In some cases, **agro-dealers will expand by opening a second or third shop** that is operated usually by another family member; however, **usual growth strategy is expand same-store sales through increased storage capacity**.

**Emerging Ownership Structure: Franchise Model**

**Case Study of Farm Shop, Kenya**

*Farm Shop is a franchise network of 25 agro-dealer outlets operating in Kenya, with retail sales of ~$1Mn USD*

- **Model**: Farm Shop operates as a social enterprise; it identifies entrepreneurs already running an agro-dealer shop, takes them through business & management training course, redesigns and expands their retail location, and provides credit to stock the shelves.
- **Results**: Growth from 10 shops in 2013 to 25 in 2014 (plans for 75 in 2015); net margin of agro-dealer franchise is ~10%, compared to ~6-7% for owner-operated model.
- **Value to Agro-dealer Franchisees**: Lower wholesale prices due to aggregated demand, central relationship with suppliers, test and validate product authenticity and quality at central level, branding / marketing support, credit provision for stocking inputs, and host field days & farmer trainings.
- **Services Provided**: Field days & farmer training workshops, product promotion events & demonstration plots (~7,000 farmers reached)

---

1) **Note**: In a survey of 50 agro-dealers in Kwara State, Nigeria, 94% of agro-dealers had completed secondary education and 46% had completed tertiary education (Source: "Capacity of Agro-input Dealers in Advisory Service Delivery"; International Research Journals; 2012)
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary of Hub Development Intervention</td>
</tr>
<tr>
<td>Defining Agro-dealer Networks in sub-Saharan Africa</td>
</tr>
<tr>
<td><strong>Market Insights: Tanzania</strong></td>
</tr>
<tr>
<td>Market Insights: Nigeria</td>
</tr>
<tr>
<td>Assessment of Agro-Dealer Interventions</td>
</tr>
</tbody>
</table>
Subsidies and donor support have driven agro-dealer development; Tanzania has ~2,500 agro-dealers, the majority of whom have annual sales less than $25K USD and profit margins less than 10%
Challenges Faced by Rural Agro-dealers

Rural agro-dealers across sub-Saharan Africa face a number of challenges when selling and distributing agricultural inputs to smallholder farmers.

- **Limited Consumer Demand**
  - Demand-generation activities are costly (e.g., $180 to set up and maintain) and agro-dealers often do not have sufficient capital or support from local extension agents, resulting in lower sales.

- **Outdated soil maps lead to purchase of inappropriate products** for specific soils or crop types, resulting in weaker than expected yields and discouraging continued purchase of inputs.

- **Limited output markets** contribute to postharvest losses (~30-40%), which can negate benefits of input use.

- **High Transport & Transaction Costs**
  - Poorly maintained or non-existent arterial and feeder road infrastructure increase transport costs.
    - An estimated 90% of district and feeder roads are inaccessible to most vehicles during the rainy season, largely due to lack of bridges and culverts; poor infrastructure causes delays and ~10-15% additional costs.
  - Long transport distances drive costs and erode agro-dealer profit margins.
    - A farmer in TZ is on average located ~50km away from suppliers and 5-10km away from agro-dealers; increased costs are passed to SHFs, who buy less when prices become prohibitive.

- **Stock-outs & Weak Inventory Mgmt.**
  - Rural agro-dealers are typically unable to optimize inventory levels in line with consumer demand, due to poor storage facilities, stock-outs, and inadequate demand management.
    - In East Africa, 45% of SHFs report that seed is ‘sometimes available’ or ‘never available’, and similarly for fertilizer (63%) and agro-chemicals (47%).

- **Working Capital Constraints**
  - Agro-dealers require working capital to manage the seasonal, low margin, nature of their business; however, the cost of finance is high and qualification conditions are prohibitive.
    - Rural agro-dealers have to put up significant collateral (i.e., fixed assets or houses amounting to 125% of the value of the loan amount) before qualifying for a loan and may face interest rates as high as ~25% on loans.
    - Volatile exchange rates drives prices for imported input and further constrain finances for SHFs & RADs.
    - SHFs require inputs at start of planting season, but can only settle payment at harvest time.

Sources: 1) In-country interviews with input suppliers and agro-dealers; 2) American Society of Agricultural and Biological Engineers, 2015; 3) World Bank; 4) AGRA PASS Farmer Survey, 2013; Monitor Deloitte Analysis
Challenges Faced by Suppliers of Inputs

Similarly, leading input suppliers face a number of challenges when distributing inputs to rural agro-dealers and smallholder farmers, which create sources of financial risk

- **Limited Consumer Demand**
  - Limited understanding of the proper usage / benefits of agricultural inputs by farmers constrains demand
    - Fertilizer consumption in SSA is ~13.6 kg/h compared to 120 kg/h in the USA and 154 kg/h in the EU¹
    - As a result, **significant investment in market development and demand generation is required** to drive sales

- **High Transport & Transaction Costs**
  - End-consumers are dispersed and located in remote areas, resulting in high transport costs
    - Port charges and transport costs increase COGS and subsequently, selling prices; the ICA estimates a 30-40% increase in the cost of traded goods due to poor road, rail and harbor infrastructure²
    - Customer dispersion results in **more transactions of smaller volumes driving up selling and administrative costs**
      - Suppliers do not have capacity to manage orders and contracts with many agro-dealers (e.g., one seed company cited 1 sales person needed per 10 agro-dealers)¹

- **High Default Risk & Low ROI**
  - High risk of default by agro-dealers; as a result, many input companies only sell on consignment to agro-dealers with whom they have developed good relationships
    - Credit defaults move along the inputs supply chain from the farmer to the agro-dealers and eventually impact the supplier’s working capital and drives up bad debt provisions
    - **Realized bad debt expense was as high as 50% of the working capital provision** made by a leading fertilizer supplier in Tanzania for the 2013/14 financial year (~5-10% of sales)¹
  - **Payment lags from government subsidies** further constrain the working capital of suppliers
    - Most governments do not have adequate funding levels to maintain subsidy payments; in both Nigeria and Tanzania delays in significantly subsidy payments have impacted suppliers

Sources: 1) In-country interviews with input suppliers and agro-dealers; 2) Infrastructure Consortium of Africa; Monitor Deloitte Analysis
**The Advantage of Wholesale Agro-dealers (“Hubs”)**

“Hub” agro-dealers (or wholesalers) have proven to be able to alleviate many of the challenges that both suppliers and rural agro-dealers face in supply and distribution.

### The Value of the “Hub” Model

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | **Build Consumer Demand**  
Hub agro-dealers serve a larger market, have greater working capital flexibility, and often have an agronomist on staff, driving consumer demand for both suppliers and rural agro-dealers. |
| 2    | **Aggregate Demand**  
Hubs demand much higher volumes than rural agro-dealers, lowering per unit distribution and transaction costs for suppliers; higher volume orders enable volume discounts which are passed on to rural agro-dealers. |
| 3    | **Enable Fewer Points of Sales**  
There are much fewer hubs (i.e. ~100 hubs in TZ), lowering transaction costs and enabling sale on credit, which often enables rural agro-dealers to also buy on credit. |
| 4    | **Have Storage Capacity**  
Hub agro-dealers (often) have storage capacity, which facilitates large purchases from multiple suppliers, lowering transaction costs, and helps rural agro-dealers minimize risk of stock-outs of a variety of products. |
| 5    | **Reduce Bad Debts and Improve Investment Cycle**  
Hubs have a better track record of paying back their debt; additionally, through facilitating improvements in the working capital and investment cycle, hubs drive a 20-40% increase in volume sales and facilitate a ~2.5X increase in ROI. |

### Limited Consumer Demand
- Hub agro-dealers serve a larger market, have greater working capital flexibility, and often have an agronomist on staff, driving consumer demand for both suppliers and rural agro-dealers.

### High Transport & Transaction Costs
- Hubs demand much higher volumes than rural agro-dealers, lowering per unit distribution and transaction costs for suppliers; higher volume orders enable volume discounts which are passed on to rural agro-dealers.

### Stock-outs & Weak Inventory Mgmt.
- There are much fewer hubs (i.e. ~100 hubs in TZ), lowering transaction costs and enabling sale on credit, which often enables rural agro-dealers to also buy on credit.

### High Default Risk, Low ROI & Working Capital Constraints
- Hubs have a better track record of paying back their debt; additionally, through facilitating improvements in the working capital and investment cycle, hubs drive a 20-40% increase in volume sales and facilitate a ~2.5X increase in ROI.

**Sources:** Monitor Deloitte Analysis; AFAP; In-country interviews with input suppliers and agro-dealers
Based on our analysis, rural agro-dealer revenues generally increase by 20 – 40% when working with hub agro-dealers (as opposed to buying from suppliers).

Interventions to strengthen hub agro-dealers not only improve revenues for hub agro-dealers and rural agro-dealers, but also drive increased volumes of agricultural inputs sold in the market.

**Revenue Growth per Rural Agro-Dealer**

- By linking with hubs, this could drive a volume increase of approximately 4 MT of fertilizer, 0.3 MT of seed, and 0.2 MT of CPP on average per rural agro-dealer (based on average increases across rural agro-dealers assessed).

**Sources:** IFPRI, 2012; Interviews with Input Stakeholders and Agro-dealers in Tanzania; Monitor Deloitte Analysis
Furthermore, when rural agro-dealers are connected to hubs, they experience ~70% improvement in absolute profitability and higher margins.

<table>
<thead>
<tr>
<th>Rural Agro-Dealer Annual Income Statement (USD)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$14,000</td>
<td>$18,500</td>
</tr>
<tr>
<td>- Cost of Sales</td>
<td>$11,500</td>
<td>$15,000</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>$2,500</td>
<td>$3,500</td>
</tr>
<tr>
<td>- Transport</td>
<td>$1,000</td>
<td>$500</td>
</tr>
<tr>
<td>- Storage</td>
<td>$300</td>
<td>$600</td>
</tr>
<tr>
<td>- Marketing</td>
<td>-</td>
<td>$300</td>
</tr>
<tr>
<td>- Other OPEX</td>
<td>$200</td>
<td>$200</td>
</tr>
<tr>
<td>Net Profit Before Tax</td>
<td>$1,000</td>
<td>$1,900</td>
</tr>
<tr>
<td>- Taxes</td>
<td>$300</td>
<td>$600</td>
</tr>
<tr>
<td>Net Profit After Tax</td>
<td>$700</td>
<td>$1,300</td>
</tr>
<tr>
<td>Net Margin</td>
<td>~5%</td>
<td>~7%</td>
</tr>
</tbody>
</table>

**Hub Impact on Agro-Dealers**

- **Drives demand, enables timely purchase and distribution of larger volumes**
  - Hubs improve transport efficiency and have storage to ensure timely delivery of inputs / minimize stock-out risk
  - Extension from hubs builds customer demand
  - Higher volume orders enable volume discounts which are passed on to rural agro-dealers, reducing per unit cost of sales; however, hubs also enable rural agro-dealers to buy greater volumes on credit

- **Reduces transport costs and enables storage and marketing spend, while still improving net margin**
  - Without hubs, rural agro-dealers have to travel far distances to reach supplier depots in urban centers; costs are exacerbated by frequent trips for small quantities under poor road conditions; regional and district level hubs alleviate this cost by reducing distance
  - Given lower transaction and transport costs, rural agro-dealers can lower prices to SHFs and still make profit; they can also rent storage space to store greater volumes and invest in demand generation activities (e.g., demo plots)

**Indicative Per Unit Breakdown (50kg fertilizer bag)**

- **Cost of Sales**: 81% (stays constant)
- **Transport**: 7% (savings from reduced transport costs)
- **Storage**: 2% (increases given less operational costs per unit)
- **Marketing**: 0% (remains unchanged)
- **Other Costs**: 5% (remains constant)
- **Net Margin**: 7% (increases given less operational costs per unit)

Notes: Indicative figures and assumptions based on interviews with agro-dealers in Tanzania and actual 2012 hub agro-dealer income statements provided to AFAP; Monitor Deloitte Analysis
“Hub” Advantage for Rural Agro-Dealers (3 of 4): ROI

Similarly, by linking with hubs, agro-dealers are able to better manage inventory and gain access to favourable credit terms, which assists with better working capital management.

### Hub Impact on Rural Agro-Dealers

**Improves inventory management over the year through improved supply management, minimizing stock-outs**
- By linking with hubs, rural agro-dealers are able to ensure consistency of supply, which helps minimize stock-outs and ensure demanded products are stocked on agro-dealer shelves, leading to efficient inventory management.
- Hubs facilitate demand generation, which facilitates more efficient inventory turn and minimizes the time that products remain on agro-dealer shelves.

**Increases credit sales through freeing up working capital and facilitating larger, consolidated purchases**
- Hubs help to drive revenue, while the shorter inventory turn cycle frees up working capital; both factors facilitate increased credit sales by rural agro-dealers to larger customers, improving days sale outstanding.

**Improved (longer) payment terms with suppliers**
- Smaller agro-dealers typically benefit from improved supplier terms when they link with hubs as opposed to dealing directly with suppliers, therefore allowing agro-dealers more time to pay suppliers.

<table>
<thead>
<tr>
<th>Rural Agro-Dealer Investment Cycle (Days)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Cycle</td>
<td>164</td>
<td>102</td>
</tr>
<tr>
<td>Days Sale of Inventory</td>
<td>66</td>
<td>38</td>
</tr>
<tr>
<td>Days Sale Outstanding</td>
<td>105</td>
<td>83</td>
</tr>
<tr>
<td>Days Payable Outstanding (with Hub)</td>
<td>(7)</td>
<td>(18)</td>
</tr>
<tr>
<td>Net Margin</td>
<td>5.4%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROI (%)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>~12%</td>
<td>~25%</td>
</tr>
</tbody>
</table>

The improvement in the investment cycle improves ROI for the rural agro-dealer from ~12% to ~25% as cash remains tied up in the businesses operating cycle for ~60 fewer days.

Up to ~2.1X

Notes: Indicative figures based on annual reports and interviews with hub agro-dealers and agro-dealers in Tanzania; Africa Fertilizer Historical Prices; Analysis assumes investment funded by equity; Monitor Deloitte Analysis.
These improvements in the time that cash remains in the investment cycle translate into significant improvements in ROI for rural agro-dealers.

<table>
<thead>
<tr>
<th>Rural Agro-Dealer Investment Cycle (Days)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Cycle</td>
<td>164</td>
<td>102</td>
</tr>
<tr>
<td>Days Sale of Inventory</td>
<td>66</td>
<td>38</td>
</tr>
<tr>
<td>Days Sale Outstanding</td>
<td>105</td>
<td>83</td>
</tr>
<tr>
<td>- Days Payable Outstanding</td>
<td>7</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Days Sale of Inventory</th>
<th>Days Sale Outstanding</th>
<th>Working Capital Turn per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Hub</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>105</td>
<td>2.2</td>
</tr>
<tr>
<td>Days Payable Outstanding</td>
<td>7</td>
<td>ROI = 2.2*5.4% = 12%</td>
</tr>
<tr>
<td>Investment Cycle</td>
<td>164 Days</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Days Sale of Inventory</th>
<th>Days Sale Outstanding</th>
<th>Working Capital Turn per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>With hub</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>83</td>
<td>3.5</td>
</tr>
<tr>
<td>Days Payable Outstanding</td>
<td>18</td>
<td>ROI = 3.5*7.0% = 25%</td>
</tr>
<tr>
<td>Investment Cycle</td>
<td>103 Days</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROI (%)</th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>~12%</td>
<td>~25%</td>
</tr>
</tbody>
</table>

**Investment Cycle**
Time it takes for a company to turn cash over in its operating cycle

**Days Sale of Inventory**
Average no. days it takes to turn inventory into sales
\[(\text{Inventory/cost of sales}) \times 365\]

**Days Sale Outstanding**
Average no. days it takes to collect revenue after sale made
\[(\text{Receivables/credit sales}) \times 365\]

**Days Payable Outstanding**
Average no. days it takes to pay suppliers after purchase
\[\text{Payables/(cost of sales/365)}\]

Notes: Indicative figures based on annual reports and interviews with hub agro-dealers and agro-dealers in Tanzania; Africa Fertilizer Historical Prices; Analysis assumes investment funded by equity; Monitor Deloitte Analysis
“Hub” Advantage for Input Suppliers

Specifically, hubs allow suppliers to capture more of the market with greater sales volume and to improve absolute profitability with more favorable net profit margins . . .

### Hub Impact on Input Suppliers

**Increases sales, improves absolute profitability**

- Marketing and extension through hubs builds demand
- Credit guarantees and storage capacity allow hub agro-dealers to buy and sell higher volumes
- Hubs enable suppliers access to a broader customer base through existing networks of rural agro-dealers (RADs) at the district and village level

**Reduces per unit costs, makes marketing more effective**

- Bulk purchases through hubs will result in fewer administrative costs and fewer sales staff to reach the same number of districts, villages, and SHFs
- While marketing expenses stay constant, the amount allocated to demand generation decreases because hubs also invest in demonstration plots and field days; marketing spend has higher ROI because hubs have stronger existing relationships with RADs and SHFs than input suppliers
- The hub model allows suppliers to sell greater volumes on consignment because hubs are less likely than rural AD to default; thus, default risk per agro-dealer is lower

---

### Input Supplier Annual Income Statement (in millions USD)

<table>
<thead>
<tr>
<th></th>
<th>Without Hub</th>
<th>With Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>$95</td>
<td>$120</td>
</tr>
<tr>
<td>− Cost of Goods Sold</td>
<td>$67</td>
<td>$90</td>
</tr>
<tr>
<td><strong>Gross Profit</strong></td>
<td>$28</td>
<td>$30</td>
</tr>
<tr>
<td>− Selling &amp; Admin</td>
<td>$3</td>
<td>$1</td>
</tr>
<tr>
<td>− Marketing</td>
<td>$3</td>
<td>$3</td>
</tr>
<tr>
<td>− Bad Debts</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>− Other</td>
<td>$9</td>
<td>$9</td>
</tr>
<tr>
<td><strong>Net Profit Before Tax</strong></td>
<td>$8</td>
<td>$12</td>
</tr>
<tr>
<td>− Taxes</td>
<td>$2.4</td>
<td>$3.6</td>
</tr>
<tr>
<td><strong>Net Profit After Tax</strong></td>
<td>$5.6</td>
<td>$8.4</td>
</tr>
<tr>
<td><strong>Net Margin</strong></td>
<td>~6%</td>
<td>~7%</td>
</tr>
</tbody>
</table>

---

**Indicative Per Unit Breakdown (50kg fertilizer bag)**

- **COGS**
  - 70.3%  
  - 74.0%
- **Selling & Admin**
  - 3.2%  
  - 0.8%
- **Marketing**
  - 3.3%  
  - 2.6%
- **Bad Debts**
  - 5.2%  
  - 4.1%
- **Other Costs**
  - 12.2%  
  - 10.9%
- **Net Margin**
  - 5.8%  
  - 7.6%

---

Notes: indicative figures based on annual reports and interviews with input suppliers in Tanzania; Africa Fertilizer Historical Prices; Monitor Deloitte Analysis
Supply-Side Interventions

However, external support is often required to enable hub agro-dealers to satisfy the aggregated demand and provide timely distribution to rural agro-dealers and smallholder farmers . . .

Supply-Side Interventions

1. **Buy Greater Volumes**: Hubs demand much higher volumes to supply their network of rural agro-dealers.

2. **Store Greater Volumes**: Hubs buy in bulk before the rainy season and need to store bulky bags of fertilizer.

3. **Manage Inventory**: Hubs need strong business management to monitor inventory and manage debt.

---

**AFAP** provides solutions for 28 hub agro-dealers:
- **Credit guarantees** for up to 3 fertilizer suppliers per hub (all hubs)
- **Matching grants** for warehouse construction (13 hubs)
- **Agro-dealer training** (starting this year)

Additionally, to be part of the program, AFAP requires participants to hire an agronomist and invest in SHF extension.

**Beyond simple business management skills**, BRiTEN provides **ongoing coaching and mentorship** which has helped hubs to **visualize their network and think strategically about their growth and product offering**.

**Current interventions have been successful at strengthening agro-dealer businesses and improving inputs distribution; however, limited funding prevents scale across more hubs and regions in Tanzania**.
Demand-Side Interventions

... but supply-side interventions alone are insufficient because agro-dealer networks are only as strong as the demand and consistent purchasing power of smallholder farmers

Inputs Distribution and Cash Flow

For hubs with existing supplier relationships, inputs are bought on consignment (e.g., 50% cash, 50% credit paid after 60 days)

Most hub agro-dealers distribute to rural agro-dealers on credit; payment terms vary based on relationship

Of agro-dealers surveyed, ~50% allow SHFs to pay on credit for 30 or 60 days; some agro-dealer even allow payment after harvest for well-trusted SHFs

Limited output markets prevent SHFs from making a profit on their surplus production, which negates the financial benefits of input use

Demand-Side Interventions: Output Market Development

Several interventions have started to address these output market challenges particularly in SAGCOT:

- **SAGCOT**: Takes a value chain approach to agricultural development in the SAGCOT area from input distribution to output marketing; donors have committed $155M USD for the development of a Marketing Infrastructure, Value Addition and Rural Finance Support Programme in the corridor; however, market construction is in nascent stages

- **NFRA**: Purchases maize from SHF at above market prices for storage and distribution off-season; when given sufficient budget, NFRA has served as a key output market for SHF, but payment delays and reduced off-take volumes in 2014/15 severely hurt SHF incomes

- **Tanzania Commodity Exchange**: Newly launched in October 2015, will provide SHFs with market price information and trading platform for commodities

Sustainable supply-side programs will likely collaborate with existing demand-side programs that connect SHFs to output markets to improve incomes and enable continued purchase of inputs

Sources: Monitor Deloitte Analysis; In-country interviews with input suppliers and agro-dealers; Investment Blueprint – SAGCOT
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary of Hub Development Intervention</td>
</tr>
<tr>
<td>Defining Agro-dealer Networks in sub-Saharan Africa</td>
</tr>
<tr>
<td>Market Insights: Tanzania</td>
</tr>
<tr>
<td><strong>Market Insights: Nigeria</strong></td>
</tr>
<tr>
<td>Assessment of Agro-Dealer Interventions</td>
</tr>
</tbody>
</table>
Input usage in Nigeria is much lower than leading East African peer Kenya; as a result, agro-dealers are small (as are absolute profits), constraining their ability to grow organically.

The CPP distribution chain is most mature in Nigeria and these products are more ubiquitous on agro-dealers’ shelves.

75% of agro-dealers earn less than $6,500 in annual revenues; almost 60% earn less than $3,000.

Sources: In-country interviews with stakeholders across the value chain; World Bank Open Data, Baseline Survey of Agro-dealers, 2011, USAID, IFDC, AGRA, Fertilizer Supplies Association of Nigeria; BMGF Study DIIVA (Diffusion and Impact of Improved Varieties in Africa), July 2014.
Regional Variation in Nigeria

Demand for inputs in Nigeria is a function of geography; the fertilizer market is concentrated in the North where cereal crops are grown, while demand for herbicides is greater in the South for root crops.

75% of fertilizer is consumed in the Northern part of the country, where gov’t distribution has been focused (for use on cereal crops grown in the region); private sector distribution channels are less developed due to significant historical involvement in fertilizer distribution by government.

The climate in Northern Nigeria is drier, with one rainy season, which is suited to growing cereals like millet and sorghum, but also groundnuts and cowpeas.

Large CPP markets are located in Ibadan that service farmers in the region, however, the majority of these CPP products are sold by table top dealers in the region.

Root crops, like cassava and yams, are typically grown in the southwest of the country, where average rainfall is higher; tree crops such as rubber and cocoa are also grown in the southcentral and southeast for commercial purposes.

Almost 100% of the CPP used in Nigeria are imported, typically via the port of Lagos from the far East for use in the Southern regions of Nigeria; the majority of Nigeria’s fertilizer is also imported, mostly through the port of Lagos or Port Harcourt.
**Pre-2012 Efforts to Strengthen Agro-Input Use**

**Overview of Subsidy Program**

<table>
<thead>
<tr>
<th>Product</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seed</strong></td>
<td>Many states had subsidy programs as part of their ADPs, on top of the Federal gov’t’s 50% subsidy (paid directly to suppliers)</td>
</tr>
<tr>
<td><strong>Fertilizer</strong></td>
<td>25% of purchase price subsidized by Federal Gov’t; many state governments added further subsidies (~50% subsidy total)</td>
</tr>
<tr>
<td><strong>Crop Protection Products</strong></td>
<td>No subsidies in Nigeria</td>
</tr>
</tbody>
</table>

**How Distribution Worked:** The distribution of seed and fertilizer was controlled by the government; the Federal Government contracted with seed and fertilizer suppliers, who then distributed the subsidized product to state owned warehouses. Local officials were in place to distribute product to farmers, and collected remaining balances owed.

**How Payment Worked:** Credit was provided to the suppliers, as opposed to the farmers (in the case of a voucher system); public distribution may have resulted in corruption and delayed orders. Inputs (especially fertilizer) were distributed by local officials outside of the formal distribution channels into local markets. In 2011, Akinwumi Adesina (newly appointed) audited the program and found that ~10% of fertilizer actually arrived at its intended beneficiary (farmers).

**Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Nigeria Fertilizer Consumption (Kg of N, P, K per ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>6.1</td>
</tr>
<tr>
<td>2011</td>
<td>6.6</td>
</tr>
</tbody>
</table>

- **Fertilizer consumption largely remained unchanged:** despite the presence of the subsidy, consumption increased from 6.1 kg/ha to 6.6 kg/ha in 2011 when the program concluded.
- **Most industry actors felt that the supplier subsidies cannibalized real demand with subsidy demand:** aggregate consumption did not increase, but willingness to pay decreased.
- **It was estimated that ~$4 bn (USD) of fertilizer was diverted primarily as a result of potential corruption among public distribution channels and procurement processes.**

The gov’t felt that the primary flaw associated with the subsidy program was derived from the fact that the subsidy was given to suppliers, not farmers; the next policy – Growth Enhancement Scheme – attempted to correct this.

**Sources:** In-country interviews with stakeholders across the value chain; Propcom Case Study on Nigerian Fertilizer (Sept. 2014); World Bank Open Data; Monitor Deloitte Analysis
Growth Enhancement Support Scheme (GES) (1 of 2)

GES was designed to correct the flaws of the subsidy program by placing “resource constrained farmers at the centre of the program” . . .

Overview of GES

- FMARD’s GES policy is aimed at reaching 20 million farmers in 4 years, with the intended outcome of raising fertilizer consumption (to achieve Abuja target of 50 kg/ha) and seed consumption
- Gov’t does not contract with suppliers under GES, rather with farmers directly; once SHFs register, they have access to voucher which enables 2 bags of fertilizer to be bought at the price of 1
- Farmers receive and redeem the voucher via e-wallet; however, technical constraints meant farmers could register manually with local officials/agro-dealers certified to distribute subsidized product

Gov’t Role in Input Distribution

2012
- Gov’t mapped SHFs in the country against existing agro-dealer / distribution points, and determined that too many SHFs are unable to access distribution points
- To address this, gov’t worked with suppliers to set-up new retail points; suppliers worked with their large wholesale distributors (hub dealers) willing to expand based on gov’t directed locations
- Temporary distribution points were established where 100% of fertilizer and seed sales were driven by vouchers (given these were areas of low demand for inputs)

2013
- Based on results in 2012 (and fewer SHFs reached than intended), the gov’t determined that leveraging the existing agro-dealer network would be insufficient, and decided to no longer work through suppliers to establish new distribution points
- Instead, the gov’t allowed new businesses to register to become certified agro-dealer / distribution points for fertilizer and seed; as a result, the number of agro-dealers increased by between 20-40% in one year

2014
- In 2014, there were no changes to how distribution occurred; no new tenders were awarded for new agro-dealers / distributors; if one was procuring & selling in 2013, they were doing so in 2014
- In 2015, the program has largely been on hold with the change of gov’t; new Minister of Agriculture expected to be announced soon

2015

Millions of Farmers Reached

(Claimed, not Audited)

- Stated Goal
  - 1.3
  - 4.5
- 2012
- 2013
- 2014
- 14

Sources: In-country interviews with stakeholders across the value chain; GES Website; Former President Jonathan’s statement at AgriFeste 2015
... however, although GES improved farmer awareness for input usage, it did not materially improve productivity; further, some distortions in the market were noted.

Challenges with GES Program

- Limited yield gains despite ~14 million farmers reached with fertilizer and seed, which may have been due to program leakage.

  Local officials & agro-dealers register farmers, collect and redeem vouchers, and pay the farmers a small cut for the transaction. Due to limited understanding of the value of proper input use, farmers were at times willing to sell their voucher (worth ~$28 in fertilizer) for ~$5-$10\(^1\); undistributed fertilizer may have entered local markets at steep discount.

Potential Impact on Distribution Channels

- **2012**: Gov't leveraging suppliers to select distribution points was partially effective in that it enabled private sector actors to take the risk and bear the cost of establishing operations in new locations; in reality, redemption rates were lower than expected (~20-40%), impacting agro-dealer viability.

- **2013**: Under GES, yields only slightly improved.

- **2014**: Gov't appointed agro-dealers to be distributors of subsidized seed & fertilizer, and no longer leveraged private sector suppliers’ distribution networks; as a result, new distribution networks formed that were dependent on subsidy demand (~900 dealers).

- **2015**: In 2015, some agro-dealers aligned with GES face uncertainty as to whether subsidies will continue; many have seen sales declines of 70-80%.

Despite these challenges, most stakeholders agree that SHF awareness of the importance of fertilizer use and of the value of planting improved seed significantly increased under GES.

Notes: Based on qualitative evidence from in-country interviews, not statistically significant sample size.

Sources: In-country interviews with stakeholders across the value chain; World Bank Open Data; FAOStat.
Given this context, the seed and fertilizer markets in Nigeria are significantly influenced by government; crop protection is private sector driven

- Seed market in Nigeria is limited, with only ~5,000MT of certified seeds produced annually; few international seed companies operate in the sector due to limitations on imports of improved varieties of quality seed.
- The number of official seed companies operating drastically increased since GES – from ~10 to over 50 today, given design of the scheme (registered suppliers get full reimbursement from gov’t for seed sold); however, technical capacity of some seed companies remains low and interviews suggested 4-5 companies provide majority of seed.

- Fertilizer market largely driven by GES; one distributor cited fertilizer volumes have declined from 3050 MTs in 2014, to 1000 MTs in 2015 (without GES).
- Private sector has had limited incentive to invest and therefore channels are less mature; notable exceptions: Notore, Golden Fertilizer, Dangote, Indorama which drive the majority of the 35% private sector demand.
- Evidence suggests demand for fertilizer is greater than current supply; however, packaging is too large for most SHFs (50 kgs) making the price per unit unaffordable.

- CPPs have not traditionally seen significant gov’t involvement and therefore private sector distribution channels have emerged; however, regulatory environment is weak and most is sold without proper certification & registration.
- Majority of product (90%) is imported from China and India and priced at ~$3.05/lt (glyphosate), and Europe (10%) at $7.90/lt; SHFs demand cheaper varieties despite higher concentration levels in European brands.
- Majority of CPPs (~70%) are sold via table top distributors in peri-urban areas, who attempt to intercept buyers enroute to agro-dealers.
- The bulk of the CPP market is a trading business; no local production or mixing, marketing, or channel investments.

Sources: (1) In-country interviews with suppliers; (2) FEPSAN, November 2010: potential demand is 3.5 Mn MTs, actual sales are ~1 Mn MTs; validated with in-country interviews
(3) President Jonathan’s address at AgriFest (Jan, 2015) claimed 134 seed companies were operational
(4) Syngenta is investing in farmer education to change this
## Impact of Gov’t Influence on Agro-Dealers (1 of 2)

As a result, GES has caused significant constraints on private sector players (primarily suppliers and distributors) and private sector investment in Nigeria

<table>
<thead>
<tr>
<th>Impact on Private Sector Dealers</th>
<th>Impact on Subsidy-Dependent Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Some private Sector agro-dealers Crowded Out</td>
<td></td>
</tr>
<tr>
<td>• In 2013, when policy changed to gov’t selecting who could distribute inputs and who could not, <strong>many private sector agro-dealers who didn’t win the gov’t tender may have been pushed out of the market</strong>; local officials now asked for bribes to sell inputs in their region.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Many new dealers were less familiar with correct inputs and <strong>stocked varieties that farmers didn’t demand</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Competition significantly increased (20-40% more dealers) <strong>without a corresponding bump in demand</strong></td>
</tr>
<tr>
<td><strong>2</strong> Potential deflation of commercial price of Inputs</td>
<td></td>
</tr>
<tr>
<td>• Commercial prices of fertilizer and seed were depressed due to <strong>subsidized product entering local markets</strong>; for example, NPK 15:15:15 was commercially priced at <del>4,600 NAN (</del>$23, per 50 kg) before the subsidy; during 2014, the price was ~3,000 NAN ($15), a price that barely covered FOB cost to the suppliers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Academic literature supported interview findings; <strong>open market prices for fertilizer were lower than the import parity price across all regions in Nigeria</strong> (10-53% lower, average of 35%)</td>
</tr>
<tr>
<td><strong>3</strong> Some suppliers Invest less in distribution channels</td>
<td></td>
</tr>
<tr>
<td>• <strong>Suppliers’ distribution networks were disrupted in 2013 and 2014</strong>, with many new agro-dealers / local officials controlling last-mile distribution; agro-dealers weren’t selected based on their existing relationships with suppliers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Existing suppliers pulled back investment in channel activities; today, currently <strong>few suppliers invest in extension services</strong> (Syngenta, Notore, Golden Fertilizers are exceptions) nor have agronomists on staff</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> Some Agro-dealers faced working capital constraints</td>
<td></td>
</tr>
<tr>
<td>• Pre-2013, input suppliers had well-established relationships with private sector agro-dealers; now, with new dealers distributing to farmers, <strong>suppliers didn’t have the same degree of trust and became apprehensive to sell on consignment</strong>, because of the lack of relationships, logistical delays ensued – significant lag between when inputs were ordered and when the order was fulfilled.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Government payment was particularly slow</strong> (some orders placed in 2014 still have not been paid)</td>
</tr>
</tbody>
</table>

*Sources: (1) Takeshima, H., E. Nkoya and S. Deb (2013). *Impact of Fertilizer subsidies on the Commercial Fertilizer Sector in Nigeria*; (2) Mason, N. M., Jayne, T. S.2013. Fertilizer subsidies and smallholder commercial fertilizer purchases; (3)Based on qualitative interviews with in-country suppliers and distributors and not comprehensive statistical analysis with a randomized control trial; (4) Monitor Deloitte Research*
Syngenta has invested significantly to begin to develop an ecosystem conducive to the sale of their high quality premium CPP products, including a partnership with the IFDC.

Model
- Syngenta’s model is one of deep engagement throughout the distribution chain to create sustainable distribution linkages and to drive demand for high quality, high value products in a market dominated by low-cost competitors; Syngenta –
  - Develops relationships with regional distributors and larger hub agro-dealers to familiarize them with products
  - Is firm in approach, by requiring suppliers to pay significant amounts up front to ensure there is ‘skin in the game’ and distributors are therefore committed to selling product
  - Works with the IFDC to conduct extension work with agro-dealers and farmers to drive product understanding
  - Focuses on the agro-input ‘ecosystem’ both on securing supply through agro-dealers as well as driving SHF demand for their products

Key Takeaways
- Syngenta has taken a long term view of success in Nigeria and has invested significantly in the ecosystem, including partnering with IFDC
- Higher margins on premium products create the incentive for Syngenta and agro-dealers to invest in distributing Syngenta’s products and demand generating activities
- Improved productivity provides incentive to farmers to continue to purchase as they have seen the product efficacy

Sources: In-country interviews with Syngenta Country Manager, and agro-dealer network stakeholders
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Summary of Hub Development Intervention</td>
</tr>
<tr>
<td>▪ Defining Agro-dealer Networks in sub-Saharan Africa</td>
</tr>
<tr>
<td>▪ Market Insights: Tanzania</td>
</tr>
<tr>
<td>▪ Market Insights: Nigeria</td>
</tr>
<tr>
<td>▪ Assessment of Agro-Dealer Interventions</td>
</tr>
<tr>
<td>▪ Learnings Across Markets in sub-Saharan Africa</td>
</tr>
<tr>
<td>▪ Lessons Learned from the Kenyan Experience</td>
</tr>
</tbody>
</table>
Based on input received, we’ve reviewed publically available reports relating to interventions to strengthen agro-dealer networks in sub-Saharan Africa. There is very limited rigorous analytical work that has been done on agro-dealer networks; for instance, no randomized control trials have been conducted to determine the impact of agro-dealer led extension services on generating demand for inputs, as an example.

In the slides that follow, we’ve assessed agro-dealer strengthening interventions, specifically looking at what has appeared to work well and not so well across the following 5 dimensions:

1. **Access to Capital**
2. **Demand Generation**
3. **Distribution Strengthening**
4. **Capacity Building: Agro-Dealer Training & Institutional Strengthening**
5. **Subsidies & Vouchers**

This work is based on a review of a number of reports, many of which are program evaluations and assessments as opposed to independent or peer reviewed academic literature. We see an opportunity for more academic rigorous analysis to be conducted on the factors for a successful agro-dealer intervention.
Credit instruments prove most successful when combined with other interventions like storage infrastructure support, so that higher volumes purchased can be effectively stored before sold.

### ACCESS TO CAPITAL

**Facilitating agro-dealer access to finance/credit through credit guarantees, matching grants, or working capital facilities**

<table>
<thead>
<tr>
<th>What’s Worked</th>
<th>What’s Not Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Programs that offer <strong>credit guarantees</strong> reduce risk for suppliers and enable agro-dealers to purchase inputs on credit not only strengthened supplier relationships, but also allowed agro-dealers to buy more product and ensure timely distribution to SHFs</td>
<td>• Access to finance programs that are not accompanied by financial management training leads to higher default rates</td>
</tr>
<tr>
<td>- AFAP credit facilities are supporting 28 hub agro-dealers to enable them to buy and sell greater volumes; in the 2014/15 season, these hubs sold ~50K MT of fertilizer and ~2K MT of seed under AFAP assistance (Note: 2 hubs have late payments to suppliers in fertilizer credit guarantee due to late payment from rural agro-dealers and SHFs)¹</td>
<td>- Training is an essential component of financial interventions in order to improve access and ensure proper money management, which can lead to future credit/loan arrangements with suppliers and banks</td>
</tr>
<tr>
<td>• Programs that combine <strong>supplier credit facilities and storage infrastructure development support enabled dealers to expand</strong> by allowing them to buy and sell more inputs</td>
<td>- Qualitative program evaluations of AGRA PASS ADPs suggest that programs that included training on how to access loans and manage debt (e.g., CARE-led ADAPT in ZM) led to lower agro-dealer loan default rates³,⁴</td>
</tr>
<tr>
<td>- New storage facilities drive utilization of supplier credit facilities as agro-dealers have more space to properly store inputs; storage facilities also enable bulk purchases, reducing transaction and transport costs¹</td>
<td>- Programs that require suppliers and financial institutions to carry out their own due diligence on loan applications can lead to long lead time on approvals and dealers forfeiting business</td>
</tr>
<tr>
<td>- Additionally, AFAP hubs estimate $3K USD average annual savings on storage once warehouse construction is complete²</td>
<td>- AGRA PASS required suppliers to conduct their own due diligence on agro-dealers before granting working capital credit; as a result, very few agro-dealers who applied received loans because suppliers only gave loans to agro-dealers with whom they already had existing trade relationships (11% in TZ, 4% in MW, 2% in ZM)⁴</td>
</tr>
</tbody>
</table>

Sources: 1) AFAP; 2) Input Stakeholder Interviews in Tanzania and Nigeria; 3) Lessons Learned in Building Scalable Agro-dealer Networks – CARE ADAPT Zambia; 4) AGRA PASS Phase 1 Mid-Term and Final Evaluations
Demand generation activities administered by input suppliers and agro-dealers lead to higher adoption than those administered by government extension officers and NGOs

### What’s Worked

- Demo plots carried out by input suppliers and agro-dealers tend to result in higher input sales; SHFs learn not only how to correctly apply inputs but also where to access them
  - ADAPT in ZM brought suppliers and agro-dealers together at farmer field days; engagement and support by multiple value chain stakeholders reduces marketing costs for agro-dealers and ensures consistent messaging around input usage\(^1\)
  - Additionally, ADAPT supported seed fairs that brought multiple input suppliers together; beyond demand generation, these activities created a sense of competition and not mistrust (which can occur when only one input company conducts extension services or training)\(^1\)
- Programs (e.g., AGRA PASS) that integrated demand generation activities and agro-dealer training assisted agro-dealers to build client relationships proactively and promote their business locally\(^2\)
  - This integration allowed agro-dealers to share best practices with SHFs, ensuring practical application of training
- Programs that reimburse costs for extension activities incentivize agro-dealers to invest in demand generation
  - USAID NAFAKA reimburses up to 75% of demo plot costs; reimbursement ensures funds are only given to credible agro-dealers serious about providing extension to SHFs\(^3\)

### What’s Not Worked

- Programs where training is delivered by government / donor extension agents, may be less effective than trainings facilitated by agro-dealers / suppliers
  - AGRA PASS ADPs relied on international technical specialists to do training with farmers; these trainers do not have the relationship required to build trust with SHFs; additionally, NGO extension activities may not foster long-term adoption among farmers as they run for limited periods of time and training is not reinforced\(^3\)
  - Engaging lead farmers or agro-dealers who not only have the trust of SHFs but also are permanent fixtures in their communities can improve training effectiveness

Sources: 1) Lessons Learned in Building Scalable Agro-dealer Networks – CARE ADAPT Zambia; 2) AGRA PASS Phase 1 Mid-Term and Final Evaluations; 3) USAID NAFAKA
Distribution strengthening typically occurs via provision of aggregation facilities, which allows agro-dealers to purchase in greater volumes, thereby improving supplier contracts and distribution efficiencies.

### What’s Worked

- Programs that facilitated access to storage (i.e. matching grants) enabled hub agro-dealers to purchase higher volumes of inputs, thus facilitating bulk purchases and lowering per unit transport costs
  - Warehouse storage facilities enabled agro-dealers to meet minimum sale requirements of suppliers and to benefit from transport incentives provided by suppliers
  - AFAP matching grants are supporting 14 hubs to construct (13) or purchase (1) warehouses with approx. 50K MT total capacity
- Interventions that encouraged centralized / aggregated demand (i.e. development of hub agro-dealers) improved access to inputs for rural agro-dealers and SHFs; hubs have shown to reduce the level of intermediation, enable bulk purchases with favorable payment terms, and reduce transport and transaction costs
  - AFAP has supported 28 hubs in strengthening their networks to ensure timely inputs delivery in sufficient quantities (422 rural agro-dealers that reach 660K+ SHFs)
  - YARA only distributes to authorized agro-dealers with sufficient purchase orders to fill its 30 MT trucks
- Programs that subsidized agro-dealers’ transport costs fostered linkages across the value chain (though this may not be sustainable)
  - IFAD linked rural agro-dealers with suppliers and subsidized transport in cases when the cost of transport was prohibitive

### What’s Not Worked

- Programs offering matching grants for storage facilities requires the agro-dealer to contribute a large portion of capital, often resulting in considerable debt servicing and working capital constraints; also, grants may not result in catalytic system change
  - Repayments on credit facilities can constrain agro-dealers’ working capital, making it difficult for them to honor supplier credit agreements and limit bulk purchases
  - AFAP cited that hub agro-dealers involved in warehouse construction have faced significant working capital constraints, which has resulted in decreases in fertilizer sales volumes

Sources: 1) AFAP; 2) Interviews with YARA and YARA-authorized agro-dealers in Tanzania; 3) IFAD Rural Business Support Program (MUVI) for the Sunflower Value Chain in TZ
Capacity Building: Agro-Dealer Training

Training has been a useful tool to build agro-dealer capacity to serve as business owners and extension agents; the most impactful programs are ongoing, customized, and led by local leaders.

**What’s Worked**

- Programs that leveraged the private sector and agro-dealer associations to lead business skills trainings were able to tailor training to specific local needs; these also helped strengthen agro-dealer relationships with suppliers.
  - CARE ADAPT in ZM and AGRA PASS ADP in UG engaged suppliers and local agro-dealer associations (e.g., UNADA) to lead trainings; these programs were successful as agro-dealers were able to develop stronger relationships with key input stakeholders through the trainings (and keeping the local NGO partner as an “invisible” facilitator).
- Ongoing mentorship enabled programs to monitor and evaluate agro-dealer progress as well as tailor follow-up trainings to the specific and evolving needs of agro-dealers.
  - BRiTEN assigns mentors to each agro-dealer with regular check-ins to ensure business management skills were practiced and technical knowledge shared.
- Programs that developed leave-behind manuals enabled ongoing knowledge transfer after program end.
  - Agro-dealer staff are often temporary, seasonal workers; therefore, leave-behind manuals (e.g., Agro Business Management Manual for Implementors and Agro Dealers) enable managers to provide ongoing training to shop staff.

**What’s Not Worked**

- Too little time (i.e. 1 week) spent on the agro-dealer training leads to limited adoption and knowledge transfer; agro-dealers typically require more time to apply lessons learned to practice and adopt management strategies.
  - AGRA PASS trainings placed greater emphasis on breadth of content versus depth; as a result, agro-dealers found it difficult to absorb the information and practice the skills learned; further, those trained tended to be shop staff rather than the managers/owners who have greater need for financial management skills.
- Ongoing mentorship, coaching, and retraining is critical to build agro-dealer capacity to run viable businesses.
- Measuring the number trained or certified may result in trainers emphasizing quantity over quality.
  - E.g., 3,855 trained by CNFA in TZ, only approximately 2,000 remain active today; simply being certified does not equate to financial sustainability.
- Trainings delivered by international consultants or NGOs (e.g., AGRA PASS ADPs) and were less effective because they were often not tailored to local needs and often facilitated in English.
  - Regional agribusiness leaders have greater credibility with agro-dealers and can adapt training.

Sources: 1) AGRA PASS Phase 1 Mid-Term and Final Evaluations; 2) Lessons Learned in Building Scalable Agro-dealer Networks – CARE ADAPT Zambia; 3) BRiTEN Agrodealer Development in Tanzania; 4) Input Stakeholder Interviews in Tanzania and Nigeria.
Interventions aimed at strengthening agro-dealer associations have had very limited success after the program ends because these groups have not demonstrated clear membership benefits for agro-dealers.

**What’s Worked**

- Interventions that helped regional associations establish a financing plan, governing board, clearly stated objectives, and a code of conduct improved association sustainability without the need for ongoing donor funds
  - AGRA PASS ADP in UG strengthened UNADA’s capacity by identifying management gaps, drafting new guidelines to address those gaps, and most importantly, developing a financing plan (e.g., revolving basket fund, membership fees) to ensure sustainability when the AGRA grant ended.
- Programs that ensure clear incentives for association members have more engaged and committed members, resulting in greater bargaining power with suppliers and improved recognition of agro-dealers by government
  - Strong associations like UNADA are able to offer agro-dealer members customized trainings, business registration support, and/or access to finance; these benefits justify paying membership dues / fees.

**What’s Not Worked**

- Many programs measure the number of agro-dealer associations supported, or number of agro-dealers enrolled, which may result in emphasis on quantity over quality; today, there are very few well-functioning agro-dealers associations present and membership benefits have been limited to many agro-dealers
  - AGRA PASS ADP established 185 associations at the district, regional, and national levels across all programs; however, the quality of the associations across countries is highly variable.
- Many interventions assumed that agro-dealers would voluntarily join associations driven by the power of collective action / collective bargaining power; however, many agro-dealers did not join because they compete with other potential members and did not see opportunities for direct personal benefit
  - Several agro-dealers in TZ mentioned they joined associations when they were trained and registered by CNFA, but membership benefits were never realized after the ADP program ended.

Sources: 1) AGRA PASS 2012 Midterm Report, Uganda; 2) Input Stakeholder Interviews in Tanzania and Nigeria; 3) AGRA PASS Final Evaluation, 2013
While government-led subsidy and voucher schemes have improved SHF awareness of and demand for inputs, payment delays and the resulting market distortion have created challenges for agro-dealers.

Subsidies & Vouchers

Provision of input vouchers or subsidies redeemable through agro-dealers

What’s Worked

- Subsidy programs (with supporting extension services) have successfully driven awareness of agro-inputs and can support increases in agro-dealer sales
  - From 2008 – 2012, the combination of a voucher subsidy and the AGRA PASS programs drove fertilizer consumption from 5kg/ha to 19.3kg/ha in TZ\(^1\)
  - Despite challenges, agro-dealers have attributed sales to subsidy interventions, especially for fertilizers; for example, one agro-dealer in TZ noted sales were cut in half when NAIVS was halted during the 2014/15 season\(^2\)
- Programs that involve the private sector in distribution of inputs result in improved efficiencies, reduced bureaucracy, and limited displacement of commercial input sales
  - In 2015, NAIVS was relaunched but adapted to engage supplier guidance to identify the agro-dealers for subsidized input distribution; this arrangement reduces leakages (e.g., subsidies diverted by dishonest agro-dealers)\(^2\)
- Voucher systems are typically more effective at driving demand than free distribution of inputs because vouchers require a SHF investment (albeit small) in purchase of inputs and also promotes competition amongst agro-dealers\(^3\)

What’s Not Worked

- Payment is often significantly delayed, which has adverse affects on agro-dealer & supplier sustainability given the working capital constraints they face as a result
  - Subsidy payment delays in TZ (particularly after World Bank support ended) led many agro-dealers (~1,500) to go out of business\(^2,4\)
  - Voucher reimbursements need to be timely to ensure the financial sustainability of agro-dealer businesses
- Subsidy schemes may create opportunities for corruption, for example by attracting new agro-dealers into the ecosystem or enabling dishonest agro-dealers to buy vouchers from SHFs at a discount without sale of inputs\(^2\)
  - More targeted distribution of vouchers and better tracking (e.g., electronic distribution) may prevent inefficiencies
- Voucher schemes typically cover a portion of fertilizer requirements, but many farmers still expect subsidized prices on additional purchases, creating pressure on agro-dealers to sell at reduced margins
  - E.g., Subsidy covers ~17% of demand in TZ\(^2\)

Sources:
1) World Bank Agribusiness Indicators: Tanzania, 2012;
2) Input Stakeholder Interviews (government, AFAP, agro-dealers) in Tanzania and Nigeria;
3) Input subsidy assessments from DANIDA, FAO, REPOA, IPRI, Sida, and ARPN;
4) Tanzania National Agro-Dealer Association (TANADA)
These learnings were drawn from a review of publically available reports and program evaluations; there is limited academic literature with rigorous analysis of agro-dealer interventions.

### Research Summary

<table>
<thead>
<tr>
<th>Program Evaluations and Reports</th>
<th>Sponsor / Lead or Source</th>
<th>Country</th>
<th>Access to Capital</th>
<th>Demand Generation</th>
<th>Stronger Distribution</th>
<th>Capacity Building</th>
<th>Subsidies &amp; Vouchers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final Evaluation of AGRA PASS Phase 1</strong></td>
<td>AGRA</td>
<td>Across SSA</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Professionalization of Agro-Input Dealers in Burkina Faso (PRODIB)</strong></td>
<td>IFDC</td>
<td>Burkina Faso</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Ghana Agro-Dealer Development (GADD)</strong></td>
<td>IFDC</td>
<td>Ghana</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Kenya Agrodealer Strengthening Program (KASP)</strong></td>
<td>CNFA / AGMARK</td>
<td>Kenya</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Malawi Agrodealer Strengthening Program (MASP)</strong></td>
<td>CNFA / RUMAK</td>
<td>Malawi</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Agrodealer Strengthening Program for Mali (ASP-M)</strong></td>
<td>CNFA</td>
<td>Mali</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Mozambique Agrodealer Development (MADD)</strong></td>
<td>IFDC</td>
<td>Mozambique</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Nigeria Agro-Dealer Strengthening Project (NADS)</strong></td>
<td>IFDC</td>
<td>Nigeria</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Tanzania Agrodealer Strengthening Program (TASP)</strong></td>
<td>CNFA / TAGMARK</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Agrodealer Development Program – Uganda</strong></td>
<td>AT Uganda / UNADA</td>
<td>Uganda</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Agro-Dealer Development Project (ADAPT)</strong></td>
<td>CARE</td>
<td>Zambia</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Agrodealer Development in Tanzania</strong></td>
<td>BRITEN</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Increasing Investment in the Fertilizer Value Chain</strong></td>
<td>AFAP</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>USAID NAFAKA Staples Value Chain Activity Newsletter</strong></td>
<td>USAID / ACDI/VOCA</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Impact Assessment of Agricultural Input Markets Strengthening (AIMS)</strong></td>
<td>USAID / CNFA</td>
<td>Mozambique</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Rural Business Support Programme (MUVI)</strong></td>
<td>IFAD</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Agricultural Input Subsidies in SSA</strong></td>
<td>DANIDA</td>
<td>Across SSA</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Fertilizer Subsidies in SSA</strong></td>
<td>FAO</td>
<td>Across SSA</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>NAIVS 2009–2012, Tanzania: Opportunities for Improvement</strong></td>
<td>REPOA</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Modern Input Promotion in Africa: Overview &amp; Future Policy Direction</strong></td>
<td>IFPRI</td>
<td>Across SSA</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>The Voucher System and the Agricultural Production in Tanzania</strong></td>
<td>Sida / EfD</td>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>GESS and the Challenges of Food Security in Nigeria: A Review</strong></td>
<td>ARPN</td>
<td>Nigeria</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

1) Swedish International Development Agency (Sida); Environment for Development Initiative (EfD) of the Department of Economics, University of Dar es Salaam;
2) Asian research publishing network
# Table of Contents

- Summary of Hub Development Intervention
- Defining Agro-dealer Networks in sub-Saharan Africa
- Market Insights: Tanzania
- Market Insights: Nigeria

- **Assessment of Agro-Dealer Interventions**
  - Learnings Across Markets in sub-Saharan Africa
  - Lessons Learned from the Kenyan Experience
Kenya’s Agricultural Input Sector vs. Sub-Saharan Africa

Kenya has outperformed other markets in sub-Saharan Africa in terms of input consumption . . .

Comparison of Input Usage in SSA

Fertilizer Consumption (kg/ha)

Kenya is the only country in East Africa to achieve the Abuja Declaration Goal of 50 kg/ha by 2015

Kenya’s seed sector is supported by a strong regulatory body (KEPHIS); additionally, strong agro-dealer networks in rural areas enable farmers to travel less than 5km to purchase seed

Notes: Southern African average includes Mozambique, Namibia, Zambia and Zimbabwe. West African average includes Burkina Faso, Cote d’Ivoire, Cameroon, Ghana and Nigeria (other countries omitted due to data not being available). Sources: CIA Factbook on Kenya, 2014; World Bank Agribusiness Indicators Report; AGRA PASS Farmers Survey 2013; Monitor Deloitte Analysis
High input consumption in Kenya is driven by the de-regulation and liberalization of input and output markets since the late-1980s.

**Timeline of Key Agricultural Sector Developments**

- **1980-80s:** Gov't controls input industry, sets prices for all outputs (e.g., maize, flour), and invests heavily in infrastructure; despite sector growth, poor governance and coordination leads to market surplus / deficits (esp. fertilizer)
- **Late-1980s – early 2000s:** Privatization and deregulation of the agricultural sector and reduction in trade barriers
  - 1993: Prices in output markets deregulated; fertilizer market liberalized, subsidies removed, foreign exchange controls and tariffs eliminated
  - 1995: Re-emergence of select controls following poor harvest (e.g., maize export bans)
  - Policy agenda focused on financial and industrial sectors; goal within agriculture focused on food security
- **2004:** Gov't launches Strategy for Revitalizing Agriculture (SRA), a 10-year policy framework that aimed to transform agriculture from a focus on subsistence to “a profitable, commercially oriented and internationally and regionally competitive economic activity”
  - Policy reduces government role in agriculture to provision of limited goods / services and a reduced regulatory function
  - Policy also enhances market access (inputs, outputs, finance) and infrastructure
- **2008 – Present:** Surge in world food prices leads to greater gov't intervention in agriculture
  - 2008: Gov't implements several food security measures
    - Input subsidy (mainly fertilizer) under NAAIP
    - Increased imports by NPCB for strategic grain reserve for price buffer
    - Price controls to fix prices for essential goods (e.g., maize, sugar, petrol)
    - Short-term export bans and import tariff reductions
  - 2010: Gov't launches Agriculture Sector Development Strategy (ASDS) to build on SRA and strengthen commercialization of agriculture (2010 – 2020)
    - Specifically, the ASDS aims to promote marketing of agricultural commodities, improve research development and dissemination of new technologies (from KARI), strengthen stakeholder linkages along the value chain, improve access to finance (partially through AFC), and facilitate private sector investment and create performance-based contracts
  - 2012: Gov't launches Agribusiness Strategy to shift focus to value addition
  - Regulatory bodies and parastatals have been restructured and strengthened along with national policy frameworks to control quality of inputs and outputs (i.e., KEPHIS, Pest Control Products Board, Kenya Seed Company)

Enabling Environment for Agro-Dealers

Agro-dealers have benefitted from liberalization of input and output markets and a favorable enabling environment for private sector investment

Agro-Dealer Overview

- There are over 10,000 agro-dealers in Kenya who are the primary distributors of inputs and are organized in a hub-and-spoke model to enable more timely, efficient delivery of inputs, though some are trying a franchise model (e.g., Farm Shop)
- AGMARK has expanded the hub-and-spoke model, established new rural agro-dealers, and supported the establishment of the Kenyan National Agro-dealer Association
- The AGRA PASS ADP was also helpful in training agro-dealers and providing capital and credit to certified agro-dealers

Main Source of Agro-Inputs for SHFs

<table>
<thead>
<tr>
<th>Source</th>
<th>Fertilizer</th>
<th>Seeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agro-dealers (Direct)</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>Seeds Companies / Importers (Direct)</td>
<td>70%</td>
<td>10%</td>
</tr>
<tr>
<td>Government</td>
<td>70%</td>
<td>10%</td>
</tr>
<tr>
<td>Other / Informal</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Enabling Environment for Agro-Dealers

- Liberalization of agro-input markets, especially fertilizer, incentivized private input suppliers to invest in local production and distribution networks to reach farmers; additionally, liberalization of the exchange rate regime and elimination of import bans encouraged importers of agro-inputs, especially fertilizer, to import competitively priced products
- In parallel, liberalization of output markets (e.g., removal of price controls) provided incentive for producers / manufacturers to buy output from local markets, which helped to boost output by SHFs and commercial farms, driving demand for inputs and agro-dealer produce
- These forces combined to create an enabling environment for agro-dealers where agro-input suppliers had an incentive to supply agro-dealers with products and farmers had an incentive to buy from them, which supported agro-dealer profitability and sustainability
- Since 2007/08, the government has used agro-dealers to distribute input subsidies in NAAIP, which prevented leakages that plagued earlier subsidy programs distributed through national retail depots

FAVORABLE POLICY

- General improvement of the business environment, economic growth and improvements in GDP per capita have supported private sector investment in agriculture due to growing markets
- Key investments in rural feeder roads and large national highways have effectively strengthened distribution networks; similarly, large agricultural infrastructure investments in irrigation schemes and mechanization have supported SHF productivity and driven input demand

Agricultural Productivity Constraints

...however, there remain challenges that limit smallholder farmer productivity and disincentivize the private sector, both suppliers and agro-dealers, from expanding operations in the country.

Challenges Experienced

- Despite above average input usage and higher yields than other African markets for some crops, productivity improvements have lagged, increasing at a much lower rate than input consumption growth*
- The national subsidy scheme has been criticized for not targeting the poorest farmers, thereby limiting its reach and ability to drive demand for inputs through agro-dealers
- Despite the relative maturity of the network, the majority of agro-dealers remain small, informal businesses that require further upskilling, training and access to finance to grow
- Consumption of key crops (e.g. maize, wheat, and rice) exceeds local production leading to significant imports from East Africa, South Africa and the Middle East exacerbating food security concerns (due to reliance on international markets)
- Challenges in the seed regulatory environment have limited effectiveness of seed testing and production, which has hampered the ability of seed companies operating in Kenya to adequately produce and market their products

*Additional in-country research required to determine the factors constraining crop yields despite increased input consumption

Source: FAOSTAT; Monitor Deloitte Analysis
Reports Reviewed

The preceding slides were based on a review of academic literature & research reports on Kenya’s agricultural sector and select interviews, but not in-country research

<table>
<thead>
<tr>
<th>Program Evaluations and Reports</th>
<th>Sponsor / Lead or Source</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Evaluation of AGRA PASS Phase 1</td>
<td>AGRA</td>
<td>2013</td>
</tr>
<tr>
<td>Kenya Agro-dealer Strengthening Project</td>
<td>CNFA / AGMARK</td>
<td>2010</td>
</tr>
<tr>
<td>Agro-Dealerships in Western Kenya: How Promising for Agricultural Development and Women Farmers?</td>
<td>ICRW</td>
<td></td>
</tr>
<tr>
<td>Analysis of Incentives and Disincentives for Maize in Kenya</td>
<td>FAO</td>
<td>2013</td>
</tr>
<tr>
<td>Analysis of Incentives and Disincentives for Wheat in Kenya</td>
<td>FAO</td>
<td>2013</td>
</tr>
<tr>
<td>Analysis of Incentives and Disincentives for Rice in Kenya</td>
<td>FAO</td>
<td>2013</td>
</tr>
<tr>
<td>Factors Driving the Increase in Fertilizer Use in Kenya, 1990-2007</td>
<td>ARIGA &amp; JAYNE</td>
<td>2010</td>
</tr>
<tr>
<td>Private Sector Responses to Public Investments and Policy Reforms: The case of Fertilizer and Maize Market Development</td>
<td>ARIGA &amp; JAYNE</td>
<td>2009</td>
</tr>
<tr>
<td>Can Agro-dealers Deliver the Green Revolution in Africa?</td>
<td>FUTURE AGRICULTURES</td>
<td>2012</td>
</tr>
<tr>
<td>The Politics of Reviving Agriculture in Kenya</td>
<td>FUTURE AGRICULTURES</td>
<td>2013</td>
</tr>
<tr>
<td>Agricultural Input Subsidies in SSA</td>
<td>DANIDA</td>
<td>2012</td>
</tr>
<tr>
<td>Factors Driving the Growth in Fertilizer Consumption in Kenya, 1990-2005</td>
<td>EGERTON UNIVERSITY</td>
<td>2006</td>
</tr>
<tr>
<td>Fertilizer Subsidies in SSA</td>
<td>FAO</td>
<td>2012</td>
</tr>
<tr>
<td>Modern Input Promotion in Africa: Overview &amp; Future Policy Direction</td>
<td>IFPRI</td>
<td>2014</td>
</tr>
</tbody>
</table>