Strengthening Market Linkages for Smallholder Rural Farmers in Uganda

A Landscape Analysis of Maize, Groundnut & Soybean Value Chains across 21 Districts

APRIL 2015

USAID | UGANDA | PRODUCTION FOR IMPROVED NUTRITION

RECO INDUSTRIES LTD

University Research Co., LLC
On the Cover

Left: Seed company employee milling improved maize grain, to be sold to Uganda PIN project smallholder farmers, Masindi District, Uganda

Center: Uganda-PIN supported groundnut and maize farmer describing her business model, Iganga District Uganda

Right: Lead farmer for a Uganda PIN-supported Producer Organization talking about her groundnut storage room, Hoima District, Uganda

Photos by Serena Stepanovic, URC
Acronym List

aBi  Agribusiness Initiative
ACE  Area Cooperative Enterprises
AFO  Agricultural Field Officer
AGRA Agriculture for a Green Revolution Africa
BEE  Business Enabling Environment
CAADP Comprehensive Africa Agriculture Development Program
CC  Community Connector
CPMA  Commodity Production and Marketing Activity
DFA  District Farmer Associations
DRC Democratic Republic of the Congo
DSIP Development Strategy and Investment Plan
EA  East Africa
EAC  East Africa Community
EAGC  East Africa Grain Council
EARM The East African Regional Market Information System
EASSI Eastern African Sub-regional Support Initiative for the Advancement of Women
EAX  The East African Commodity Exchange
ESA  Eastern and Southern Africa
EEAA  Enabling Environment for Agriculture Activity
EMMA  Emergency Market Mapping and Analysis
FTF  Feed the Future
GOU Government of Uganda
ICIEPE International Centre of Insect Physiology and Ecology
IMAM  Integrated Management of Acute Malnutrition
IPM  Integrated Pest Management
MAAIF Ministry of Agriculture, Animal Industry and Fisheries
MTN Mobile Telecommunications Network
NTB Non-Tariff Barrier
OVC  Orphans and Vulnerable Children
PC  US Peace Corps (Uganda)
PHH Post-Harvest Handling
PIN Production for Improved Nutrition
A diverse set of voices contributed to this Landscape Analysis, from both public and private sectors. This report was written for URC by Debora Randall, Independent Consultant and market linkages expert. We would especially like to thank the following business leaders and program managers, whose experiences and recommendations have shaped this report. These include: Robert Mwadime (FHI360 Uganda), Paul Allertz (Trias Uganda), Herbert Kirunda (TechnoServe Uganda), Martin Wamaniala (Chemonics Uganda), Harriet Nabirye (Chemonics Uganda), Peter Skjoedt Adarson (aBi Trust), Owen Mugume (aBi Trust), Meital Tzobotaro (US Peace Corps Uganda), Robert Kitu (Infotrade, FIT Uganda), Michael Opio (SNV Uganda), Lillian Bazaale (East African Grain Council, Uganda), Annette Bogere (Grainco Foundation Uganda), P.T. Rwabwogo (Reco Industries), Alex B. Kisembo (Reco Industries), Robert Katende (Tetra Tech Uganda), Charles Mulagwe (Carana Corporation Uganda), Alfred Mwangi (Savannah Commodities), Ambassador Philip Idro (Upland Rice Millers), Doug Griffiths (Chemonics Uganda), Godfrey Katwere (Naseco Seeds), Joseph Kasumba (East African Basic Foods), Ones Karuho (AGRA Uganda), Samwel Rutto (EAGC, Kenya), Michael Kairumba, Wilfred Thembo (TGCU), Mathias Okurut (TGCU), Joseph Kiirya (Chemonics Uganda), Stephen Muhangi (Tetra tech Uganda), Dr. Rita Laker-Ojok (Tetra tech Uganda).

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Strengthening Market Linkages for Smallholder Rural Farmers in Uganda

R
coco Industries with its partner, the University Research Co., LLC (URC) is executing the five-year, USAID-funded, Uganda Production for Improved Nutrition Project (PIN). The goal of the Uganda PIN project is to reduce the burden of undernutrition among children, pregnant and breastfeeding mothers and people living with HIV/AIDS. The Uganda PIN project’s interventions include increasing local production of therapeutic and supplementary foods using raw inputs sourced from smallholder Uganda farmers; strengthening the supply chain for the distribution of these goods through public and private partnerships; improving the economic well-being of smallholder farming households through improved crop quality and market linkages; and expanding access to essential services for orphans and vulnerable children.

The URC Landscape Analysis for Uganda PIN aims to better understand the interventions that are being done in the 21 PIN-supported districts to determine market potential and linkages within the three focus value chains (maize, soybeans and groundnuts) so that the project can provide livelihoods-capacity-strengthening support to leverage market development for rural smallholder farmers. This includes an analysis of market potential, linkages, and gaps for the focus value chains; a description of current farmer-to-market engagement practices, barriers to access, key motivators and most-likely catalysts for change; and the identification of existing program-supported interventions that PIN should leverage in support of improving farmer production, post-harvest handling practices and/or market linkages.

URC’s Landscape Analysis is informed by a market-systems approach using market mapping as a way to visualize market systems. This informs preliminary analysis and provides more organized, detailed information about the product. URC mapped each of the three value chains targeted by the Uganda PIN project—maize, soybeans and groundnuts—using a market-mapping process. These maps illustrate the key value chain actors and identified points of leverage or opportunities within the supporting services and enabling environment, as well as systemic constraints that lead to a lack of competitiveness within the entire market system.

There are a number of key value chain or core market actors within each of the PIN value chains. These are: agro-input dealers, farmers, producers, cooperatives and producer organizations, area cooperative enterprises, and district farmer associations; buyers, traders, village agents; processors; and exporters. Key organizations involved with these market actors are outlined in the report. Next, organizations and firms involved in addressing systemic constraints at the support service level were described according to key constraints: poor agricultural practices by farmers; a lack of use of agricultural inputs; limited formal financial access for farmers; limited access to market information for farmers; expensive transportation and logistics; inadequate testing facilities and equipment; inadequate warehouse and storage services. Finally, organizations and firms working at the enabling-environment level to address systemic constraints and opportunities were outlined in the Landscape Analysis, around each of the following issues or points of leverage within the enabling environment: the application of East Africa Community standards; opportunities within the legal and regulatory framework at the national and regional level to improve policy; East Africa Community regional integration, which creates opportunities for trade; and constraints, such as ongoing tariff and non-tariff barriers to trade and limited research for improved seeds.

Once the macro environment was mapped, the Landscape Analysis examined the micro level to better determine opportunities for linkages for the PIN project, specifically. This included an exploration of current PIN project engagement practices, gaps in current linkages, and key opportunities to create linkages for change for producers and farmer groups.

The resulting analysis highlights a number of implementation recommendations that should be considered by Uganda PIN project going forward:

- **Link PIN farmers to input markets.** Strengthen work with seed companies, input dealers, and programs that focus on strengthening input dealers.
- **Link PIN farmers with output markets.** Linkages can be made directly to buyers or buyers’ agents through projects currently working in this space by developing a preferred-buyers network in each of the districts and a business platform model that links buyers and farmers to build trust and transparency.

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**Executive Summary**
◆ Link PIN farmers with financial services. Mainstream voluntary savings and loans (VSLAs) within the producer organizations and seek additional training to strengthen these. Monitor the financing developed by the PIN project to measure uptake and impact, and link PIN farmers with other providers of finance.

◆ Link PIN farmers with other training focusing on good agricultural practices. Focus training and capacity building for area cooperative enterprises and producer organizations through linkages with other projects and awareness campaigns, as well as additional behavior change communication mediums such as radio and pictorial-based curricula.

◆ Link PIN farmers to market information through information and communications technology (ICT) providers, as well as other projects that are using ICT to facilitate linkages from traders and input dealers to farmers.

These linkages can help the PIN project to achieve its goals of increasing rural, smallholder-farmer household income through improvements in farmer production, post-harvest handling practices, and improving access to buyers willing to pay a premium for quality products.
1. Introduction

1.1 Uganda’s Strategic Priorities for Agricultural Growth

The Uganda National Development Plan prioritizes agriculture among the key productive sectors driving growth in the national economy. In the Comprehensive Africa Agriculture Development Program (CAADP), Uganda has committed to the principle of agriculture-led growth as the main strategy; to the pursuit of a 6% average annual growth rate for the agriculture sector; and to increase the share of the national budget allocated to the agriculture sector to reach an eventual target of 10%. The Agriculture Sector Development Strategy and Investment Plan (DSIP) 2010/11–2014/15 is the foundation for the CAADP Compact and its implementation will simultaneously achieve both the national and CAADP outcomes and targets.

As indicated in the DSIP, 73 percent of all households and the majority of the poor in Uganda depend directly on agriculture for their primary livelihood. The nation’s food and nutrition security status is not satisfactory—caloric intake per person per day stood at 1,971 in 2005, compared to the World Health Organization- (WHO) recommended level of 2,300. The number of food-insecure people has increased, from 12 million in 1992 to 17.7 million in 2007, an obvious consequence of the high population growth rate.¹

In order for the agricultural sector to begin to impact poverty reduction and food security, key challenges within the sector need to be resolved: productivity must be raised and farmers need to be linked into commercial service delivery platforms and have affordable access to yield-enhancing products and knowledge.

1.2 Feed the Future Uganda

In Uganda, the United States government’s Feed the Future program (FTF) aims to assist an estimated 709,000 vulnerable people. This will include more than 450,000 children reached with services to improve their nutrition and to prevent stunting and child mortality.

To meet these objectives, FTF Uganda is investing in three key areas:

1. Focusing on Nutrition. This includes nutrition activities at the health-facility and community levels; the production of ready-to-use therapeutic foods and complimentary foods; social marketing of complementary foods; efforts to increase uptake of more nutritious foods; food fortification; and capacity building, policy, advocacy, and research.

2. Focusing on Agriculture. In Uganda, prime production areas are located in the Southwest and Central regions. The focus crops for FTF Uganda are maize, coffee, and beans. Interventions will focus on increasing the productivity of these crops, as well as on improving market actors to ensure the value chains are more competitive.

3. Connecting Nutrition to Agriculture. Through research on agriculture, FTF Uganda will support policy and help to ensure a positive enabling environment, building capacity and investing in those who are the most vulnerable.

1.3 The Production for Improved Nutrition Project

Reco Industries with its partner, the University Research Co., LLC (URC), is executing the five-year, USAID-funded, Uganda Production for Improved Nutrition Project (PIN). The goal of the Uganda PIN project is to reduce the burden of undernutrition among children, pregnant and breastfeeding mothers and people living with HIV/AIDS. The project focuses on priority interventions for the manufacture and distribution of therapeutic and supplementary foods that include, but are not limited to, sourcing quality ingredients from indigenous farmers and local industries; attaining local and international certification throughout the production cycle; and quality control.

The project provides therapeutic and supplementary foods to USAID programs implementing the government of Uganda’s (GOU) services for integrated management of acute malnutrition (IMAM). Target beneficiaries include vulnerable children from 6 months to 18 years of age; pregnant and lactating women; adult people living with HIV/AIDS (PLHIV); and smallscale farmers. Uganda PIN produces therapeutic foods for the outpatient treatment of severely malnourished children and adults in the targeted districts. PIN also produces supplementary foods for

¹ Uganda’s growth rate was at 3.24% in 2014, as compared to the world average of 1.2%, with a population of 35,918,915 in 2014. Information obtained from http://www.indexmundi.com/uganda/demographics_profile.html, based on the CIA world fact book.
Figure 1. Map of districts & sub-countries in which clinics receive RUTF from the Uganda PIN project.
Table 1. List of USAID/Uganda PIN Livelihoods Intervention Areas

<table>
<thead>
<tr>
<th>District #</th>
<th>District</th>
<th>Sub County Name</th>
<th>No. of Sub-Countries per district</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEST NILE REGION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Moyo</td>
<td>Lefori, Moyo, Metu</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Yumbe</td>
<td>Apo, Romogi, Kochi, Kululu</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Maracha</td>
<td>Oluvu, Nyadri</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Arua</td>
<td>Omugo, Ajia, Aroi, Vura</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Nebbi</td>
<td>Kucwny, Nebbi, Nyaravur, Nthew</td>
<td>4</td>
</tr>
<tr>
<td><strong>MID-WESTERN REGION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Kirayandongo</td>
<td>Kirayandongo, Bweyale, Kigumba, Kikuube</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Masindi</td>
<td>Mirya, Pakanyi</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Hoima</td>
<td>Bugambe, Kitoba, Bujumbura division, Kyabigambire</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Kibale</td>
<td>Nyamarwa, Bubango, Matare</td>
<td>3</td>
</tr>
<tr>
<td><strong>SOUTH-WESTERN REGION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Kasese</td>
<td>Kitswamba, Bugoye, Central division, Rukoki, Nyakikyumbu</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>Kamwenge</td>
<td>Kamwenge, Nyabbani</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Ibanda</td>
<td>Kijongo, Bisheshe, Ishongorero s/c, Ishongorero T/Centre, Nsasi (OVC mainly)</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Bushenyi</td>
<td>Kakanju, Ibaare, Ishaka division</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Sheema</td>
<td>Masheruka, Kyangyenyl, Kigarama</td>
<td>3</td>
</tr>
<tr>
<td><strong>EASTERN REGION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Iganga</td>
<td>Namungwalwe, Nawandala, Nakalama, Central division</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>Bugiri</td>
<td>Bulidha, Nankoma, Wakawaka, Kapyanga</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>Tororo</td>
<td>Mukujju, Rubongi, Meriki-Moro, Iyorwa-Magora, Kisoko, Nagongera</td>
<td>6</td>
</tr>
<tr>
<td>18</td>
<td>Mbale</td>
<td>Busoba, Bumasiyke, Lukhonge</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>Sironko</td>
<td>Bukhulo, Bukise, Sironko TC, Buwaasa, Bukiy</td>
<td>5</td>
</tr>
<tr>
<td>20</td>
<td>Bukedea</td>
<td>Malera, Bukedea, Kolir</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Pallisa</td>
<td>Kasodo, Apopong, Agule</td>
<td>3</td>
</tr>
</tbody>
</table>
use by patients recovering from severe acute malnutrition; to prevent those with moderate acute malnutrition from progressing to severe acute malnutrition; and for complementary feeding of young children.

The project aims to increase the production of nutrient-dense food crops grown by local, smallholder, rural farmers, the supply of basic raw materials to local industries, and the household incomes of small-scale farmers. PIN will address some of the constraints along the entire value chain related to producer-organization development and strengthening; access to marketing opportunities by women; adoption of good agricultural practices; promotion of diverse food and quality crop production; reduction of post-harvest losses; improvement of commodity quality; and skills development, which will enable smallholder farmers and small-to-medium-scale traders to improve production efficiencies and competitively participate in the market.

It is expected that, at the end of the project, the participating farmers will be producing annually at least 200,000MT of maize, 20,000MT of red beauty groundnuts, and 2,000MT of soybeans. The farmers will receive assistance to market at least half of their annual production in order to boost economic wellbeing.

1.4 Objective of the Landscape Analysis

The objective of the Landscape Analysis is to review existing market potential and linkages for maize, soybeans, and groundnuts for producer organizations (PO) and Area Cooperative Enterprises (ACE) within the PIN program area, and determine the potential for market development and value chain strengthening within the 21 PIN-supported districts. This Landscape Analysis was originally conceived to strengthen the technical approach of the PIN IR3 (Livelihoods) team, which is charged with increasing rural, smallholder-farmer household income by strengthening field production, post-harvest handling and market linkage practices.

The Landscape Analysis includes an analysis of market potential, linkages, and gaps for the three focus value chains (soybeans, groundnuts and maize) across the 21 districts in which Uganda PIN provides livelihoods-capacity-strengthening support to rural smallholder farmers; a description of current farmer-to-market engagement practices, barriers to access, key motivators and most likely catalysts for change; and the identification of existing program-supported interventions that PIN should leverage in support of improving farmer production, post-harvesting practices and/or market linkages.

1.5 Key Value Chain Research Questions & Research Methodology

This research aims to answer the following:

Key Research Questions
- Which models of market engagement should PIN Component 3 adopt and/or adapt, based upon what we learn through the Landscape Analysis?
- What are the constraints or points of leverage for PIN farmers (for sustainable market access within the three commodities) within the business-enabling environment?
◆ What types of supporting services exist and where are they within our program area (e.g., agricultural extension services, crop testing, credit, etc.)? What about these services works, or does not work, well?
◆ What are the implications of this learning for PIN Component 3 implementation priorities?
◆ What does current farmer capacity (production, post-harvest handling, market engagement) look like?

Methodology

URC’s Landscape Analysis is informed by a market-systems approach that uses market mapping as a way to visualise market systems\(^2\) to inform preliminary analysis and organise detailed information about the market system. A market system describes a set of actors, relationships, functions, and issues, which together form a product subsector. To perform market systems analysis, it is critical to understand the interconnectedness of market actors within the system and their interactions with each other to obtain goods or services.

A market map visually illustrates all of the components and relationships within the market system and ensures greater understanding of the wider, systemic influences on the subsector (value chain). Market mapping for the PIN Landscape Analysis included three key steps: (1) mapping the core market actors for each of the crops; (2) identifying the constraints and opportunities within supporting services; and (3) describing points of leverage within the business-enabling environment.

◆ Core market actors. The core market consists of all stages of a production process and the interactions between these stages. The core market includes primary producers, consumers in the end markets, and all actors who own the good along the chain.

◆ Constraints and opportunities within supporting services. Market-chain actors access a variety of supporting inputs and services to carry out their functions. In a market system, supporting functions are almost always made accessible by a wide variety of providers and through a number of different mechanisms. Their nature and effectiveness differ considerably. Market maps include services that market chain actors already use, as well as those that are important for market chain actors, but are not performing well, or missing altogether.

◆ Points of leverage within the enabling environment. Many issues shape the way market actors in the value chain and the supporting markets do business and secure their livelihoods. In the market map, these issues are summarized above the market chain, in the “enabling environment” area. Examples of enabling environment issues include: macro-level economic and market trends; laws, policies and regulations; quality, trading and other standards; or informal norms in the economy, society, and/or culture. These issues can be leveraged to improve the flow of goods along the value chain.

Input market actors (e.g., seed suppliers), output market actors (buyers such as millers or large traders), and personnel from project-based interventions working in the PIN districts (e.g., Tetra Tech’s Agri-Inputs Project, FHI360’s Community Connector Project) were interviewed, with a focus on the three PIN value chains. This research identified the actors within the core market players; determined supporting services and the opportunities and constraints within them; and identified the issues or points of leverage within the enabling environment. These interviews also allowed for a deeper analysis of potential partnerships amongst these key players.

Finally, a participatory mapping process was performed on each of the 21 PIN districts with Uganda PIN Agricultural Field Officers (AFOs) and Regional Agricultural Field Officers (RAFOs), focusing on organizations (either local or international) and private-sector players. This helped to develop localized, contextual mapping for potential linkages with both input and output markets.

Limitations of the Research

This research focused on PIN-targeted districts; the Landscape Analysis only covers the 21 PIN districts, not Uganda as a whole. Projects with a focus outside the target area were not included in this analysis.

\(^2\) The maps used for the Landscape Analysis are modelled after the Emergency Market Mapping and Analysis (EMMA) mapping system, which has been modelled on Practical Action’s approach. While there are many different models for market mapping, the EMMA map allows for greater detail of not only the core market, but also the supporting services and enabling environment. This is critical for understanding the wider systemic influences on the value chains.
2. Analysis of Market Potential

2.1 Market Mapping: Maize, Soybeans and Groundnuts

This section provides a brief overview of each of the value chains, which are subsequently mapped in Figure 1 and Figure 2.

Maize. The total production for maize in Uganda was estimated at 2,748,000 MT (metric tons) per annum in 2012,³ with average yields for Ugandan producers estimated at 1.5 tons per hectare⁴ and an average price of 600 USh/kg.⁵ Maize is not a traditional crop for Ugandan consumption; however, local demand for maize is growing, especially in urban areas and with the younger population.⁶ A majority of the maize produced in Uganda supports the local brewery industry, where flour is fermented to produce local brews. There are also a number of different export markets for maize, with strong demand from Kenya, Southern Sudan and the Democratic Republic of the Congo (DRC). Southern Sudan, the DRC, and the informal market in Kenya buy low-quality maize. The formal maize trade in Kenya is concerned with a higher grade, reflecting standards recently adopted in the East Africa Community (EAC)⁷ limiting levels of foreign matter, mold, and levels of aflatoxins in maize.⁸ Because of these standards for maize, efforts are being made to curtail informal trade to Kenya and boost the quality of maize in Uganda. Research estimated that about 80% of trade takes place through informal trading channels.⁹

Soybeans. Annual production of soybeans in Uganda was estimated at 638,000 MT per annum in 2014, with average yields at 0.75–1 ton per hectare¹⁰ and an average price of 2,200 USh/kg.¹¹ Maize and soybean market systems are very similar. Many market actors (including traders, wholesalers, and larger buyers) involved in maize are also involved in beans, including soybeans, for instance. This is due to the similar routes to market, as well as similar storage facilities. One of the key challenges within the soybean market system is access to improved seeds. Farmers do not buy soybean seeds, so seed companies do not stock improved seeds¹² due to this lack of demand, which limits access to improved seeds available for farmers. Soybean exports are estimated at 125,000MT per year;¹³ the export potential is double this figure, but poor infrastructure and limited business exposure has prevented Uganda’s soybean industry from meeting this target.¹⁴ Most of the export markets to Kenya, DRC, Southern Sudan, Rwanda, and Tanzania are informal ones.¹⁵

In Uganda, processors transform soybean seeds into soy oil, soy cake, unimix, soy flour and soy bits. However, local demand for soybeans is very limited, due to a lack of awareness of the nutritious consumption of soy. Processors like Reco Industries, Sesaco Corporation, East African Basic Foods and others are hoping to change this as they develop soy products for the national market. Other processors, such as Mukwano Industries, Ltd. or Mt Meru Millers, export soy cake for feed to regional markets, Asia and the Middle East.¹⁶

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⁵ This is very low. According to data from Farmgain Africa Ltd’s Market Information System, maize grain retailed for 1,100USh/kg in August 2014, indicating that prices have dropped considerably between August 2014 and February 2015.
⁶ Per capita total maize consumption ranges from 28 kilograms a year in Uganda to 125 kilograms a year in Kenya. Joughin, “The Maize Industry in Uganda.”
⁷ While enforcement of these standards are not always consistent, there have been reports of maize being turned away at the borders due to the grains not meeting standards enforced by the Kenya Bureau of Standards. This will only increase as maize and other grain standards are adopted by EAC partner states. Source: Interviews with market actors.
⁸ Aflatoxins are toxic metabolites produced by certain fungi in/on foods and feeds. The level of aflatoxins in products depends on the susceptibility of grains to fungal invasion during pre-harvest, storage, and processing periods. Aflatoxins have received attention because of their demonstrated, potent carcinogenic effect in animals and their toxicological effects in humans. Many countries have attempted to limit exposure to aflatoxins by imposing regulatory limits on commodities intended for use as food and feed.
⁹ Uganda Bureau of Statistics (2013)
Groundnuts. The annual production in Uganda in 2013 was estimated at 295,000 MT per annum; the average price of groundnuts the following year was 3,600 USh/kg. Groundnuts are grown in the Northern, Eastern and Southern regions of the country, with higher volumes in the east. Ugandan farmers produce groundnuts mainly for home consumption, selling the surplus in different markets at various prices. Very few groundnuts are processed by large processors (no more than 10% among those interviewed for this landscape report). In fact, Reco Industries and Sesaco are among the few processors in Uganda who do: Reco Industries processes groundnuts into ready-to-use therapeutic food (RUTF) and Sesaco processes groundnuts for soy-peanut-sesame spread. Most groundnuts end up on the local market, consumed by Ugandans, with some shelled groundnuts exported to Kenya. Aflatoxin is a major health issue for groundnuts and affects what Reco Industries and Sesaco purchase. However, at the local markets, limited testing for aflatoxins and little awareness of their negative health effects exist.

The following market maps (Figures 2–4) highlight the market actors for each of the crops and outlines constraints and opportunities in the supporting system and enabling environment. Note that maize and soybean market systems essentially share the same actors and have the same constraints; therefore, these maps have been merged together.

2.2 Description of the Core Market, Supporting Systems, and Enabling Environment

This section describes the three elements of the market maps—core market actors, supporting services, and the enabling environment—and identifies points of leverage or opportunities within the supporting services and enabling environment, as well as systemic constraints that lead to a lack of competitiveness within the market system. Within each section, the main players that overlap in the 21 PI districts are highlighted.

Core market actors for the three PI project value chains:

- **Agro-input dealers**: Seed companies, larger agro-input dealers, and local agro-input dealers at the district level. The main organizational player at this level is Tetra Tech, which runs the FTF Agricultural Input Activity.

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11 From infotradeuganda.com, as of December 15, 2014.
12 For instance, Naseco had to throw out 150 tons of soybean seeds at one point due to a lack of demand. Source: interview with Naseco.
13 SNV, “Increased Competitiveness of the Value Chain.”
14 Ibid.
15 Exact figures on the maize and bean trade within the region are impossible to obtain, since many market actors trade outside of the formal import or export processes, either by bribing their way across borders or taking informal routes across borders to avoid the formal process. FoodTrade Eastern and Southern Africa (ESA) has begun a project that will place observers at a number of border posts in Uganda, Kenya and Tanzania to obtain a clearer picture of informal trade levels. Source: interview with Food Trade ESA.
16 SNV, “Increased Competitiveness of the Value Chain.”
18 From infotradeuganda.com, accessed Dec 15, 2014
19 Source: Interviews with market actors during field research.
20 According to studies on maize and beans (Joughin, J. [2012], MAFAP [2012], Mugisha et al [2014]), the transactions involved in the marketing of maize and other grains are complex, but the main channels for the commodity flow include (i) from farmer (farm gate) to agents/traders/village markets in rural areas; (ii) from rural markets to secondary markets in regional towns; (iii) from urban markets to major buying centers outside the district; and (iv) the export market. Each of these channels involves a number of key players.
Figure 2. Map of PIN’s livelihood districts and PIN’s overall areas of operation.
Figure 3. Soybean, Groundnut, and Maize Market Map
Figure 4. PIN Livelihoods Districts and Potential Livelihoods Partnerships

PIN’s Livelihood Districts
PIN’s Overall Areas of Operation
Soybean Production Areas
Groundnut Production Areas
Maize Production Areas

Core Market Actors
- Carana
- Trias
- Fhi360
- TechnoServe
- Chemonics
- SNV
- Tetratech
Farmers, producers, cooperatives, ACEs, District Farmer Associations (DFAs): A number of projects are working at this level to boost farmer productivity in maize, soybeans, and groundnuts by organizing farmers together into cooperatives of producer organizations or ACEs and helping farmers to improve post-harvest handling (PHH) practices that improve crop quality. Organizations working in this area are: Trias, Oxfam, and other NGO projects, including local community-based organisations (CBOs), as well as Carana Corporation, SNV, Technoserve.

Buyers, traders, village agents: Village agents and traders aggregate goods and sell to buyers. Some of the larger buyers have their own agents at the village level who collect for them, often on a seasonal basis. The major project working at this level directly with buyers and traders is Chemonics’ FTF Commodity Production and Marketing Activity (CPMA).

Processors, exporters: There are a number of millers and processors, many of whom play the role of exporter after processing and packaging the final product. Smaller

| Table 2. Summary of Uganda Organizations and Projects Based upon Field Interviews |
|-------------------------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|------------------------------|-------------------|
| **Lead Organization** | **Name of Project** | **Key Value Chains** | **Districts of Operation (Related to PIN)** | **Program Focus** | **Market Access & Engagement** | **Financing** |
| Peace Corps Uganda | Uganda Peace Corps Program | All | Bushenyi, Kibale, Masindi, Mbale, Sheema, Arua, Iganga, Kasese | Improved seed | For traders and ACEs |
| Carana Corporation | Uganda Maize Value Added Alliance project | Maize | Busiri | Training w/ focus on soil health | ----- |
| Chemonics | Commodity Production and Marketing Activity | Maize, beans, coffee | Masindi, Hoima, Kibale, Kasese, Kamwenge, Bushenyi, Sheema, Iganga, Busiri, Tororo | ----- | ----- |
| AGRA | Market Access Project | Rice, maize | Tororo, Buia, Iganga, Kamwenge, Kasese, Palisa, Masindi | ----- | ----- |
| SNV | Uganda Oilseed Subsector Platform: Maize value chain program | Horticulture, oilseed, maize and apiculture | Arua, Kasese, Kamwenge, Mbale | ----- | ----- |
| FHI360 | Community Connector | Onions, passion fruit, production of quality seeds (e.g., potato) or tree seedlings, honey, local chickens and local goats | Nebbi, Masindi, Kamwenge, Kasese, | ----- | ----- |
| Trias | Enabling Synergies between Organized Enterprising People | All | Arua, Nebbi, Masindi, Hoima | ----- | ----- |
| aBi Trust | Value Chain Development | Cereals (maize, sorghum, ric); pules (beans); horticulture (pineapple, chilli peppers and mango); oilseeds (sunflower, simsim, soybean, and groundnuts); dairy and coffee | ----- | ----- | ----- |
processors, who supply locally, usually have less strict quality regulations regarding aflatoxin levels and other quality and health and safety issues, such as levels of foreign matter, mold, and sanitary and phytosanitary (SPS) requirements. Larger actors include the World Food Program, Savannah Commodities, East Africa Buyers, East Africa Foods, Reco Industries, Agroways, and Upland Rice Millers. Agribusiness Initiative (aBi) Trust funds many private-sector firms and FTF funds Reco Industries, Sesaco Industries and Agroways.

2.3 Constraints and Opportunities within Supporting Services

Organizations and firms involved in addressing systemic constraints at the support-service level are outlined below, according to the key constraints or opportunities.

Poor agricultural practices by farmers and poor planning by farmers include inefficient post-harvest handling and storage practices as well as inadequate planning by farmers with limited information on farming as a business. A lack of accessible and affordable services such as inputs, finance, and technical assistance hinders improved productivity. Poor drying methods and storage facilities lead to post-harvest losses (which can reach 30% per season). Availability of mechanical drying facilities is limited, and those few that are available are far from areas of production. This prolonged period between harvest and drying results in discoloration and molding, which reduces production and hinders efforts to export higher grades.

U.S. Peace Corps Uganda, with FTF funding from USAID Uganda, has launched a Community Agribusiness Program that currently includes nearly 30 Peace Corps Volunteers. The program, now in its third year of operation (part of a five-year funding agreement) focuses on (1) business development in agribusiness skills; (2) personal money management; and (3) child health and nutrition. Peace Corps Uganda’s Community Agribusiness Program aims to reach 990 producer organizations with training and technical support and over 20,000 producers with agricultural training.

21 “Community Agribusiness Project Brief” (U.S. Peace Corps Uganda, August 2014)

22 Goal estimates based upon personal communication with the U.S. Peace Corps Uganda FTF Coordinator, October 2014.
Carana Corporation, in conjunction with USAID and Agroways Ltd, is running the Uganda Maize Value-Added Alliance (UVAMA), which aims to reach 9,800 producers in eight Eastern Uganda districts. The project provides farmers with training in production and post-harvest handling practices. They have also constructed small warehouses; Agroways uses them to aggregate supply at the community level, which is then sent to the main warehouse.

Chemontics FTF CPMA seeks to impact 200,000 farmers as it works to increase the quantity and quality of maize, beans, and coffee produced and marketed by smallholder farmers. Working at the trader and buyer level, CPMA pushes information through traders to farmers, encouraging transparent relationships based on trust.

SNV Uganda currently supports interventions in 108 districts across the country. SNV is working in conjunction with the International Fund for Agricultural Development on oilseeds, establishing platforms in the Eastern, South-Western and Northern regions of the country to monitor performance and resolve constraints with other market actors. In Kasese and Kamwenge in the South West, SNV is working to improve maize production and quality through better PHH practices. They also run a business platform for maize using a model similar to the oilseeds platform.

FHI360’s FTF Community Connector (CC) Project works to improve the nutrition of women and children and the livelihoods of vulnerable populations by implementing interventions that integrate nutrition and agriculture at the community and household levels, reaching 81,000 households. The CC project is focused on the production of onions and passion fruit; production of quality seeds (e.g., potato) or tree seedlings; and on the production of honey, local chickens, and local goats.

Trias, a Belgian NGO, focuses on building capacity of producer organizations as well as the financial institutions supporting micro-entrepreneurs. In Uganda, Trias is currently working in four of the PIN project districts (Arua, Nebbi, Masindi and Hoima) to improve production through training of farmers groups and to help build capacity of ACEs and DFAs.

aBi Trust provides agricultural support to private-sector institutions, with the goal of increasing income for smallholder farmers and increasing production. aBi Trust is focused on six key value chains: cereals (maize, sorghum, rice); pulses (beans); horticulture (pineapple, chilli peppers and mango); oilseeds (sunflower, simsim, soybean, and ground-nuts); dairy; and coffee. This involves grants to companies or firms to increase production, and improve on PHH practices, production and marketing. A number of grantees, including DFAs, have received money to improve production, PHH or aggregation activities.

Oxfam, World Vision, other INGOs, and local NGOs who work to train farmers to increase production, improve PHH and aggregate crops at the community level.

Farmers use few agricultural inputs. While behavioral determinants vary by crop and context and limited research exists to support a broader statement, some evidence suggests that farmers within the PIN operating area do not adequately use input and output supplies for their crops due to poor and counterfeit supply, lack of awareness, and lack of financing (Table 6). At the production level, the quality of agriculture inputs (fertilizers, seeds, pesticides, etc.) shows a high correlation with the quality of the outputs (yields and the quality of the harvest), which directly influences the market-ability of the grains. The DSIP (2010) states that the national average of farmers using improved seeds in Uganda is 6.3%; those applying chemical fertilizers is 1%; and those applying agro-chemicals (pesticides, herbicides, fungicides) is 3.4%. Seed supply is poor, especially for improved seeds. The use of substandard and poor counterfeit seed leads to poor lower yields, lower disease-resistant products, and a high percentage of small, shrivelled grains, affecting the overall ability to achieve quality standards and obtain higher prices.

Tetra Tech FTF Agricultural Inputs Activity. This market facilitation activity works with stockists/agro-dealers, input companies, and input associations, assisting agro-dealers and input companies to collaborate more productively with both upstream and downstream value-chain actors. The activity ensures that retailers are reaching out at the village level to facilitate access, and has worked on demand issues using training plots at the village level. The activity also works to improve the supply of inputs; Tetratech works with the Uganda Seed Trade Association (USTA), which coordinates and oversees the development of the seed industry to improve the availability of quality-assured seed as well as with the Uganda National Agro-Input Dealers Association (UNADA), a consortium of agricultural dealers and suppliers in Uganda.

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23 Although a comprehensive listing of local and international actors that address poor farming practices does not exist, a partial view of investments in this area can be seen through the work of USAID in Uganda. For more details, see USAID Uganda’s interactive map to learn more about the 163 agriculture and economic development projects operating in Uganda, by location: http://map.usaid.gov/?f=local&w=UG
Training of good agricultural practices through programs by Peace Corps, Carana, Cemoniks, Tetra Tech, SNV, Trias, aBi Trust and other NGOs, such as Oxfam and World Vision, focuses on good agricultural practices, including the use of improved seed varieties, using fertilizers and sprays, planting in rows, weeding, mulching, and proper spacing.

Awareness and enforcement of standards is poor. There is no local policy framework to promote adoption of grain standards and the Uganda National Bureau of Standards does not have the capacity to ensure that only quality grain is traded, especially for human consumption, which would increase incentives to produce quality grain. Currently, the majority of rural farmers and many of their trading partners are unaware of the benefits of applying improved practices and lack awareness of standards. The objective behind increasing awareness of EAC standards is to establish and increase adoption of appropriate post-harvest practices that will standardize quality measurements, which will improve trade in the region. Consumers will benefit from better safety standards and higher-quality maize and farmers will benefit from the higher prices that quality grains command.

aBi Trust has worked on SPS measures, helping firms and organizations reach Uganda Bureau of Standards (UNBS) standards for crops. Activities include developing centres of excellence, which are learning centers where people can learn about SPS requirements. They have also worked closely with UNBS to build staff capacity, training staff to meet these standards.

Chemonics’ FTF Enabling Environment for Agriculture Activity (EEAA) assists policymakers in the design of interventions that target constraints in agricultural development and work to overcome these constraints, improving policy, legal, and regulatory frameworks that affect agricultural production and trade. EEAA is working with the East Africa Grain Council of Uganda (EAGC), the Grain Council of Uganda (TGCU), the Uganda Commodity Exchange and other actors in Uganda to simplify EAC standards visually, through brochures and posters, to disseminate EAC maize and bean standards. This information will be used throughout these member organizations in order to create awareness of beans and maize standards. EEAA has done research on aflatoxin levels on maize in the country in order to better understand the current market and how standards are being applied.

EAGC and FoodTrade Eastern and Southern Africa (ESA) will promote East African regional grades, standards, and technical regulations for maize in the member state countries, namely Kenya, Uganda, Tanzania, Rwanda, and Burundi. This will be achieved through increasing awareness and understanding of grades and standards for traded grains among producers, smallholder farmers, and traders through EAGC’s members.

TradeMark East Africa (TMEA) works with EAC institutions, national governments, the private sector, and civil society organizations to increase trade. TMEA, through Southern and Eastern African Trade, Information and Negotiations Institute (SEATINI) Uganda, will train 700 farmers directly and 55,000 households indirectly to improve compliance with maize standards and EAC edible-oil standards, create information portals for trainees on its website, and establish strategic networking forums with government and regional institutions for maize.

TGCU is starting a project focused on development of six warehouse hubs in Uganda. Key buyers will work with warehouses and information on standards for maize will be pushed out to farmers.

Limited financial offers. In general, farmer-based activities are poorly financed. VSLAs can help to provide some financing, but the very structure of VSLAs is to provide small, short-term loans to the poor. This structure is fitting for income-generating activities that provide immediate returns. Farmers need financial products that cater to their specific farming cycles: larger amounts, for example, to finance inputs at planting time over the longer term, with repayment scheduled three to six months after the loan is disbursed, once goods have been harvested and sold.

Organizations, associations, and companies working to address this constraint:

Trias strengthens local savings and credit cooperatives (SACCOs) and leverages partnerships between SACCOs, ACEs, and DFPs to provide financing specifically for farmers that takes into account their specific needs.

EAGC Uganda, a membership-based organization, works with producers, traders, and processors in the grain value chain. They are currently working on tripartite agreements with buyers in Kenya and producers in Uganda to develop financing for farmers, focused on maize and soybeans.

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24 aBi Trust has also funded equipment in labs (such as moisture meters, used to determine the degree of wetness within harvested, bagged food crops, such as corn) for organizations.
◆ **aBi Trust** provides agricultural grants to private-sector institutions, with the goal of increasing income for smallholder farmers and increasing productivity and production. This involves grants to companies or DFAs towards improving production, PHH practices, and marketing.

◆ **Alliance for a Green Revolution Africa (AGRA)** is working with small and medium enterprises (SME) or primary processors, providing technical assistance and linking them to financial providers so they can access loans to improve competitiveness and increase supply. AGRA is working in seven districts overlapping the PIN project: Tororo, Busia, Iganga, Kamwenge, Kasese, Paliso and Masindi.

◆ **Chemonics** FTF CPMA will begin financing for ACEs in 2015.

◆ **AKORION**, an emerging youth company started by Chemonics CMPA, are working via online platforms to provide service such as access to crop insurance, electronic money transfer and access to credit. They are currently working through 330 village agents in rural parts of the country. Their vision is to employ 4,000 youths as agents to provide production and marketing services to 260,000 farmers by 2017. Currently, Uganda Development Bank and three insurance companies are working with them to provide services to farmers.

◆ **Infotrade**, a private sector player and part of the firm FIT Uganda, Ltd., provides market information services for farmers in Uganda. Infotrade has developed formal partnerships with Postbank and Finbank, who will recognize their FARMIS app for farm records, streamlining farmers’ access to loans (see below for more information on FARMIS).

◆ **Peace Corps Uganda**, through its FTF project, aims to improve the finances of SMEs, including farmers; this involves enabling farmers to access VSLAs and improving their access to loans.

◆ **TGCU** will use a warehouse receipting system to link farmers to bank to obtain credit on their deposits.

◆ **Airtel and Mobile Telecommunications Network (MTN)**, funded through the Gates Foundation Financial Inclusion Program, have developed mobile platforms to allow VSLAs to deposit using mobile money. This can help farmers save money in travel to deposit to banks and ensure that money is safe at the local level.

◆ **Uganda National Agro-Input Dealers Association (UNADA).** Since 2009, credit-guarantee funds by UNADA have enabled agro-dealers to buy enough seed at the start of the planting season. Agro-input dealers pay 50% to the
FARMIS, developed by Infotrade Uganda, is designed for farmers who need a program to improve organization and increase profits from their farm production. FARMIS features the following:

- **Automated record keeping.** This platform allows farmers to track all farm business activities in one place, schedule different farm events and track all the expenses incurred for future reporting and decision making.

- **Market information.** FARMIS provides current market information throughout major markets in Uganda and information on current food prices, fuel prices, organic prices and current input prices for Uganda.

- **Access to credit services.** Farmers cite unavailability of credit and capital as one of the major constraints in their business; financial institutions cite lack of proper farmer records as a major constraint when evaluating farmers’ viability for credit. FARMIS provides a platform that enables farmers to store records and financial institutions to review farmers’ performance over a period of time to help them make an informed decision about the farmer’s capabilities to manage credit.

- **Access to genuine inputs at affordable prices.** The inputs market has been greatly affected by the emergence of counterfeit inputs on the market today. FARMIS keeps a database of all genuine input suppliers in the country, complete with contact addresses and current input prices across East Africa.

- **Market linkages to buyers and sellers.** The FARMIS platform can help to determine who is selling and buying. Using FARMIS, farmers can seek offers for their produce before harvest so that they have a market when they harvest. Traders can find offers from producers looking for markets.

- **Promotional services through the radio.** Farmers can market their produce through partnering with local radio stations and access other information like agricultural news, farming tips and current prices from all over the country.

- **Access to relevant farming tips.** FARMIS provides farming tips, agribusiness news, farmer success stories.

Infotrade is offering two applications for farmers:

1. **Short Message Service (SMS) information to farmers.** The Infotrade application profiles farmers, and these farmers receive mobile-based SMS with market information three times a week. This includes market price information, in different areas, for different, selected commercial enterprises and different languages at a cost of 220 USh (seven cents, in US currency) per message. This also includes market price information (wholesale and retail), weather alerts/forecasts, and extension information based on selected crops.

2. **FARMIS application for farmers.** FARMIS is an application built to provide web- and mobile-based farm record management capabilities to help farmers and other agricultural stakeholders better organize and understand records on their farms; it also provides farmers with identification services that help them access extension and credit services. Farmers receive SMSs on weather forecasts, agricultural extension tips based on the selected crops, and market prices. Farmers obtain links to buyers based on their forecasted production levels. The cost is 20,000 USh per farmer per annum.

3. **Infotrade also works to organize radio programming for other clients.** They train radio staff and help develop radio shows, depending on the clientele and desired messaging.

- **Grameen Bank** has designed an agricultural extension system at the village level, with volunteers who reinforce messaging to farmers. This is not a commercial model, but is paid for by NGOs or other organizations as a free service to farmers. In partnership with Ag-Inputs Activity, supplier and UNADA guarantees that the remaining 50% will be paid within two months, by which time most of the seed will have been sold to farmers.

**Farmers have limited trade and market information.** Farmers are often unaware they can obtain higher prices for different grades of grains and often receive market information from traders, who have a strong incentive to exploit farmers at the farm gate by offering them low prices.
they have developed a model similar to FARMIS, where profiled farmers are provided with information on prices and weather and linked to credit providers. This is in pilot stage with 26,000 farmers targeted for the platform within the next few years.

- The communications networks, such as MTN, Airtel Uganda and Uganda Telecommunications, provide market information (prices) to farmers.27

- Chemonics FTF CMPA Program. Traders from CMPA have been provided with smart phones and the project has trained them to use SMS to link their farmers to buyers. This provides an easier way for traders to communicate with farmers on prices and the quantity and the quality buyers are seeking, by sending one SMS to their group of farmers, instead of individual SMS. CMPA anticipates this will build stronger linkages with core market actors in the value chain and will assist farmers with ready information on buyers’ prices and preferences.

- EAGC runs the Regional Agricultural Trade Intelligence Network system, a web-based platform that provides market prices for Uganda and the EAC.

- FoodTrade ESA funds Kenyan Esoko Networks Limited, which will provide market and price information to farmers in six countries (including Uganda) through the East African Regional Market Information System (EARM). The system will enable farmers with improved knowledge, crop protocols, management of inputs, climate resilience, monitoring, linkages to markets, and options to export to foreign markets. Additionally, the EARM system will deliver information to smallholder farmers, helping them to manage water resources better through weather alerts. Farmers will also benefit from better management of inputs and receive best-agricultural-practice tips over SMS. This platform is a two-way system; farmers’ profiles enable SMEs to tailor products for them.

Expensive transportation and logistics.

- TMEA will begin an online portal, called “e-freight-ex,” to resolve issues related to backhauling and decrease speculation around information on freight services. TMEA is working with the Uganda Shippers Council to promote the use of the regional e-freight-ex initiative in Uganda.

Inadequate testing facilities and equipment.

- TMEA, with the Swedish Development Association (SIDA,) has been working with the Uganda National Bureau of Standards to coordinate quality assurance service providers, capacity building for the bureau, and publicity and awareness for SPS and standards. This is a critical component, given that the Bureau is the World Trade Organization-appointed national enquiry point for SPS and food safety.

- The EAGC and FoodTrade ESA will facilitate cross-border trade points with maize-grain testing and grading facilities, including fulfilling all required maize testing standards.

Inadequate warehouse and storage services. Farmers and small-scale traders in rural areas lack adequate storage facilities and urban centers lack bulk storage; this leads to deterioration of grain quality during storage along the value chain. Poor storage and warehouse-receipts systems and low organising capacity to build aggregated bulk storage also hinders ability to attract big volume traders.

- EAGC, in conjunction with FoodTrade ESA, has developed warehouse standards and has started certifying warehouses within Uganda and Kenya, using these standards. The plan is to certify 20 warehouses each year, for the next three years.28 Through the Northern Corridor Integration Project, Rwanda, Uganda, and Kenya Heads of State have developed a minimum level of warehouse standards, which have been accepted by each country. They are in the process of developing checklists for warehouses and training on these standards for warehouses in the region.

- TGCU is in the process of developing six warehouse hubs that will provide storage for farmers, specifically in maize. By October 2014 plans were in place for hubs in mid-western Uganda, Kiryadongo (AFGRI) and Masindi (Joseph Initiative); and Northern Uganda (AFGRI).

- Virtual City, Esoko and EAGC (Regional). Through the first round of their Challenge Fund, FoodTrade ESA will fund Virtual City (VC). The Kenyan company uses an electronic warehouse system, which includes the application of grades and

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28 The Uganda Commodity Exchange (UCX) has a mandate to certify warehouses in Uganda. However, by the end of 2013, only seven warehouses in the country had been licensed, with a total storage capacity of 22,000 MT. Since early 2013, UCX had been experiencing financial difficulties, rendering its ability to effectively supervise warehouse keepers and guarantee quality of grain in the warehouses unattainable. However, the Ministry of Trade is committed to seeing UCX restart.
standards, and a warehouse receipt system for farmers, who can access credit through institutions, such as Equity Bank. This model, which was developed in Kenya by Food-Trade ESA for tea and coffee, has created price incentives for farmers to meet higher grades and provides standard technology that is easy to adopt by warehouses. Esoko will partner with VC on this Challenge Fund to provide an SMS system backup to the farmers, supplying them with prices for their goods and other information on stock levels. Food-Trade ESA is funding the software development, as well as the marketing and roll out of this program. VC will work in partnership with EAGC to roll out the model to members within their network, targeting all EAC countries.

2.4 Constraints and Opportunities within the Business Enabling Environment (BEE)

Organizations and firms working at the BEE level to address systemic constraints and opportunities are detailed, below, around each of the issues or points of leverage within the enabling environment.

EAC standards have been recently ratified by the EAC for maize, beans, and groundnuts.

- **aBi Trust** has worked with UNBS to build capacity and train staff and has supported the training of lab staff in proper testing procedures.

- **TMEA Uganda**, with SIDA and the EU-funded Quality Infrastructure and Standards Programme, are working jointly with the Uganda National Bureau of Standards to review and amend the policy and legal framework for standards and quality infrastructure, as Uganda currently lacks a National Standards and Quality Policy.

- **TMEA**, through SEATINI Uganda, will develop policy papers to advocate for implementation of EAC standards on maize.

**Limited research for improved seeds.** Uganda’s National Agricultural Research Organization coordinates the development of crop varieties. It supervises companies and farmers’ associations to produce foundation seed, which is then passed on to outgrowers or to other seed companies to produce certified seed, supervised by the National Seed Certification Service. This has especially affected the production of groundnut seeds.

**Legal and regulatory framework at the national and regional level.** Legal and regulatory issues play a significant role at all stages in the value chain. This applies to domestic and regional laws and regulations, implementation of trade agreements, and transparent regulatory systems.

- **Chemonics’ EEEA project** currently is working with the Government of Uganda or GOU to develop a grain trade policy in conjunction with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and has developed a commodity platform, bringing together development partners, grain traders, Ministry of Agriculture and Trade staff, input dealers and farmer representatives. The platform supports dialogue on all issues affecting the staples/grain sector to address the wider regulatory and legal issues that are affecting maize and beans.²⁹ ³⁰

- **FoodTrade ESA**, through the Alliance for Commodity Trade in Eastern and Southern Africa, is working to improve the regulatory environment for seed production and trade in Eastern and Southern Africa (ESA). This will be achieved through the domestication of the newly adopted, seed-trade-harmonized regulations of the Common Market for Eastern and Southern Africa, which will help to simplify and harmonize the procedures for seed production, certification, release, and trade within the region.

- **The Northern Corridor Project** (Uganda, Rwanda and Kenya) has recently agreed upon and developed warehouse standards for the region. These are to be adopted by the other member states of the EAC in order to create regional harmonization around warehousing, which will help to facilitate trade.

- **MAAIF and Ministry of Trade** are working to implement policies that are beneficial to trade in agriculture. MAAIF is working on developing a new grain trade policy and the

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²⁹ For instance, Southern Sudanese traders can trade without registering in Uganda, which puts them on an equal footing with Ugandan traders, without any regulation governing them.

³⁰ EEEA’s focus crops are maize, beans and coffee. A platform already exists for coffee.

³¹ There is no documented information about (1) the proportion of female traders within the industry, (2) their primary trade, and (3) the specific nature of the exploitation.


³³ Amanda Shaw, “Gender and Trade in East Africa: A review of Literature” (DFID 2010).

³⁴ EASSI Action Research 2012
Ministry of Trade is partnering with TGCU, the Uganda Cooperative Alliance, the National Farmers Federation and the Uganda Coffee Federation to re-launch the Uganda Commodity Exchange, expected to begin mid-2015. Ministry of Trade is working on developing laws to support development of the exchange, such as warehouse receipting laws and laws governing derivatives and regulations through the Capital Markets Authority, which provides oversight to the Uganda Commodities Exchange. Local government policies are also critical to the enforcement of standards and agricultural policy, which affects these market systems.

Tariff and non-tariff barriers (NTBs), whether informal or formal, stop trade from occurring regionally through mechanisms such as corruption, or complicated import or export processes that hinder trade.

- TMEA is focused regionally on the removal of NTBs through work with the EAC Secretariat and EAC partner states that includes institutional strengthening. National Monitoring Committees have been established that provide technical capacity and improvements to the legal and regulatory framework. In Uganda specifically, TMEA is supporting a project focused on the removal of NTBs to transit goods through Kenya and Tanzania.

- FoodTrade ESA is funding a project to gather formal trade data for staple foods at nine border posts along the Kenya/Uganda border and the Kenya/Tanzania border and at Kisumu, Mombasa and Dar es Salaam ports to capture formal and informal trade data. This project will also monitor NTBs and other issues faced by traders at borders and feed this back to the national monitoring committees for NTBs.

EAC regional integration, leading to more formal trade among the EAC. Since the signing of the treaty establishing the EAC in 1999, the EAC established a single customs union in 2005; a common market in 2010; and a monetary union in 2013. The establishment of the EAC common market is an opportunity for Uganda to increase the flow of its goods throughout the region, without trade barriers.

- TMEA established a one-stop border post between Uganda and Kenya; introduced an electronic Single Window Information for Trade to improve the efficiency of customs processing and clearing goods; is benefiting from the introduced electronic cargo-tracking system to facilitate transit cargo in Tanzania and Kenya to the key ports of Mombasa and Dar es Salaam; and is looking to benefit from the newly commissioned Berth 19 in Mombasa Port. Regionally, TMEA is working to improve logistics services, including training of customs agents across the region, and the project is in the process of licensing agents. This will improve the regulation of customs practices across the region. Work will also be done to harmonize training and certification for long haul drivers, working to resolve axle-load limits and other freight issues that impact on trade and export.

- The East African Commodity Exchange (EAX) began trading in maize and beans this year, looking to increase the volumes of trade of goods regionally. EAX is based in Rwanda, but now operates in Uganda and Kenya.

- TMEA. Much trade occurs informally, leading to frequent exploitation, especially of female traders. Informal, cross-border trade has been estimated to account for up to 60% of all intra-regional trade and women are said to compose up to 80% of all informal cross-border traders. Gender-sensitive trade facilitation and regional integration can do much to help small-volume traders, many of whom are women, to access regional markets by promoting information on rights and obligations, safety and accountability at borders and in customs, and by sensitising officials. Female informal traders are exposed to persistent challenges, such as lack of necessary trade information and immigration requirements; and harassment and exploitation, including sexual abuse, by different actors at borders. TMEA runs a project across the EAC member states that works to encourage women to trade formally by increasing Eastern African Sub-Regional Support Initiative for the Advancement of Women (EASSI’s) advocacy role with policy makers, build the capacity of established women’s cross-border trade associations, undertake information dissemination, and increase support to female traders through the resource centers. This project will focus on four Ugandan borders: Malaba (Uganda/Kenya), Mutukula (Uganda/Tanzania), Katuna (Uganda/Rwanda), and Busia (Uganda/Kenya).

- SEATINI Uganda, with support from TMEA, has been working with Ugandan community service organizations and the private sector to enhance awareness of, and participation in, the regional formal-trade-integration process.
This section examines current engagement practices of the Uganda PIN project, gaps in current linkages, and key catalysts for change for producers and farmer groups.

The key elements in market linkages are linking with input and output markets, as indicated below in Figure 5. Surrounding these core market actors are supporting services. The key supporting services affecting producers in the PIN project at the micro level are financial services, extension services, and other messaging that reinforces production and post-harvest handling, such as radio or SMS systems.

Beyond this are the wider supporting systems, which affect all the market actors, and the enabling environment, which affects the functioning of the entire market system. For this section, while we do not ignore the impact of the wider enabling environment or supporting services that impact core market actors along the entire value chain, we are looking to analyze direct linkages, of both core market actors linked directly with producers, as well as supporting services that are directly related to producers at the micro level.

Each of these is analyzed according to current practices to engage with market players or supporting systems; further analysis is then performed to determine gaps and opportunities for the PIN project.

3.1 Input Markets
Table 3 on page 25 describes the current practices and market actors the PIN project is using to engage core market actors for input markets. It also highlights some of the key gaps that remain in engaging input market actors.

3.2 Output Markets
Table 4 on pages 25-26 details the current practices of the PIN project engaging with output markets, including gaps and opportunities to leverage for the project.

3.3 Supporting Services
As per Figure 4, there are a number of key supporting services directly impacting farmers on the micro level that can be leveraged for the PIN project. In this section we look at other training models, as well as other communication mechanisms that can be leveraged to reinforce production, PHH and standards messaging.

3.4 Access to Financial Services
Table 6 on page 26 looks at the current strategies of the PIN project regarding access to farmer financing and looks at gaps and opportunities moving forward.
There is a need for more formal arrangements and forward contracts. All of the current buyers work through informal arrangements. Buyers with high standards need good quality. With the establishment of EAC standards, consistent quality becomes critical. Some buyers do communicate with farmers and this can be leveraged through better linkages; however, there is a need to link with work by Chemonics EEA and EAGC to increase awareness of EAC standards in maize and beans.

Aggregation and warehousing. Strong ACEs are required to organize and aggregate supply and to store grains properly, according to warehouse standards. Explore whether Trias can work with ACEs or Peace Corps volunteers to help develop new ACEs and build their capacity so this is done. Links can be made with traders who provide extension support on PHH, good quality aggregation and transparent prices for farmers. This can be through the Chemonics CPMA project, or in other districts through development of a preferred buyers list. There are opportunities to link with buyers through Carana, SNV, TNS, EAGC, TUGC, Trias and AGRA who are aggregating and offering warehousing.

### Table 3. Current Uganda PIN Practices Input Markets

<table>
<thead>
<tr>
<th>Market Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FICA, Naseco and Similo Seed companies</td>
<td>Current linkages include formal MOUs with seed companies providing maize seeds for demonstration plots and who are actively involved in designing plots to maximize uptake by farmers.</td>
</tr>
<tr>
<td>Dynafarm, BioDeposit Fertilizer companies</td>
<td>This involves formal MOUs with fertilizer companies. These companies provided inputs which the PIN project used for the demonstration plots. The PIN project hopes that a formal MOU will be signed for next season (March 2015), so they can provide fertilizer and TA for demonstration plots.</td>
</tr>
<tr>
<td>Agro pro focusinput fairs National Agro Show</td>
<td>This includes informal linkages through agricultural input events, as producers were taken to Agri-Pro Focus fairs in the East and Northwest and the National Agro Show to access new input dealers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gaps</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Seed companies have not engaged with the project on groundnuts and soybean seeds, as there are limited seeds available for both these crops.</td>
<td>• Improve the supply of certified seeds in targeted districts.</td>
</tr>
<tr>
<td>• No formal linkages have been made with agro-input dealers.</td>
<td>• Naseco indicated they can provide soybean seeds for PIN demonstration plots. They also need to supply groundnut seeds.</td>
</tr>
<tr>
<td>• Counterfeit seeds are on the market, which do not germinate as well as certified seeds. This discourages farmers from investing in seeds from input dealers.</td>
<td>• There may be an opportunity to link the demand from PIN farmers to seed companies through the Agro-inputs project. This may help retailers to minimize their risk of stocking seed.</td>
</tr>
<tr>
<td>• There are financing gaps for producers to buy inputs.</td>
<td>• Link with the new initiative of the Agricultural Inputs Activity early in 2015 that will certify seed sold on the local market.</td>
</tr>
<tr>
<td>• There are access issues for farmers, as dealers are mostly in main trading centers, where there are larger markets and more customers, and are not close to rural areas. This also increases transaction costs for farmers to access seeds.</td>
<td>• Develop a preferred supplier list. There is an opportunity to develop formal linkages with agro-input dealers. In areas where Tetra Tech’s Agricultural Inputs Activity works, engage with their dealers, who will provide technical assistance and improve access at the farmer level. In areas where this program is not established, link up with pre-screened agro-input dealers. Develop a tool to identify these at the district level.</td>
</tr>
<tr>
<td>• Counterfeit seeds are on the market, which do not germinate as well as certified seeds. This discourages farmers from investing in seeds from input dealers.</td>
<td>• Financing for agro inputs. Financing for farmers is needed. PIN’s financing will assist farmers in accessing inputs.</td>
</tr>
</tbody>
</table>

### Table 4. Current PIN Practices Output Markets

<table>
<thead>
<tr>
<th>Market Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Trading Company</td>
<td>This company is in the process of linking with the PIN project; in Tororo District, PIN farmers have started to sell maize to them.</td>
</tr>
<tr>
<td>Reco Industries</td>
<td>25 tons of groundnuts were purchased in the East; only one ton was rejected by the buyer due to poor quality.</td>
</tr>
<tr>
<td>KCDP</td>
<td>In Kamwenge District, farmers sold nine tons of maize; only two tons were rejected by the buyer because of poor quality.</td>
</tr>
<tr>
<td>East African Foods</td>
<td>This company bought soybeans in Arua through the DFA, of which some PIN farmers are members.</td>
</tr>
<tr>
<td>Mt Meru</td>
<td>Ten tons of soybeans were sold by the DFA in Arua and seven tons by the DFA in Moyo, of which PIN farmers are members.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gaps</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All of the current buyers work through informal arrangements.</td>
<td>• Develop a preferred buyers list. There is a need to identify appropriate links between buyers and PIN farmers.</td>
</tr>
<tr>
<td>• There is a need for more formal arrangements and forward contracts, with prices set beforehand.</td>
<td>• An opportunity exists to link with preferred buyers in the CPMA project, but assessments in other areas where CPMA is not located can be performed to determine which buyers will work for the farmers. Buyers through Carana, SNV, TNS, EAGC, TUGC, Trias and AGRA can also be leveraged.</td>
</tr>
<tr>
<td>• Poor warehousing and stocking of grains is affecting quality.</td>
<td>• Links need to be developed with buyers before harvesting to provide a case for farmers to improve quality. There is also an opportunity to replicate SNV’s business platforms on a quarterly basis in the regions and specifically with PIN targeted crops.</td>
</tr>
<tr>
<td>• There is a limited focus on standards work; currently standards are communicated only at the time of purchase.</td>
<td>• There are opportunities to link PIN farmers with buyers who are providing warehousing in the targeted districts.</td>
</tr>
<tr>
<td></td>
<td>• It is critical to develop formal MOUs with flow prices with key buyers so farmers have a ready market.</td>
</tr>
<tr>
<td></td>
<td>• Communicate standards for maize and beans. Buyers with high standards need good quality. With the establishment of EAC standards, consistent quality becomes critical.</td>
</tr>
<tr>
<td></td>
<td>• Aggregation and warehousing. Strong ACEs are required to organize and aggregate supply and to store grains properly, according to warehouse standards. Explore whether Trias can work with ACEs or Peace Corps volunteers to help develop new ACEs and build their capacity so this is done.</td>
</tr>
<tr>
<td></td>
<td>• Links can be made with traders who provide extension support on PHH, good quality aggregation and transparent prices for farmers. This can be through the Chemonics CPMA project, or in other districts through development of a preferred buyers list.</td>
</tr>
<tr>
<td></td>
<td>• There are opportunities to link with buyers through Carana, SNV, TNS, EAGC, TUGC, Trias and AGRA who are aggregating and offering warehousing.</td>
</tr>
</tbody>
</table>
Table 5. Continued. Current PIN Practices Training in Production, PHH and Standards

<table>
<thead>
<tr>
<th>Market Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Centre of Insect Physiology and Ecology (ICIPE)</td>
<td>ICIPE has partnered with PIN to perform integrated pest management (IPM) in the demonstration plots, including the provision of companion plants as a push-pull strategy for IPM.</td>
</tr>
<tr>
<td>District Staff</td>
<td>Starting in the Fall of 2014, GOU Agricultural Extension Officers and other staff at the district level will be regularly engaged in monitoring PIN training with farmers.</td>
</tr>
</tbody>
</table>

### Gaps
- There has been minimal training on standards, except by a few larger buyers. This may be a gap in the curriculum.
- There is a need to reinforce production and PHH messages by other mechanisms: through visuals, posters, radio, SMS, and messaging by other market actors.
- It is important to ensure that training is reaching farmers in the farmers’ groups through the lead farmer.

### Opportunities
- Multiple messaging reinforces behaviour change.
  - Carana employs radio messages in the East. This model could be used in the PIN project to reinforce messaging and ensure it is reaching farmers.
  - Infotrade’s FARMIS system has agricultural extension messages that can reach farmers.
  - Links with Chemonics Agricultural Inputs’ input dealers and CPMA to reinforce messaging, as these programs are working to get input dealers and traders to push and pull information from both sides.
  - DFAs are also providing training to farmers.
- Include EAC standards in the curriculum and make the curriculum more visual.
  - Carana employs radio messages in the East. This model could be used in the PIN project to reinforce messaging and ensure it is reaching farmers.
  - Infotrade’s FARMIS system has agricultural extension messages that can reach farmers.
  - Links with Chemonics Agricultural Inputs’ input dealers and CPMA to reinforce messaging, as these programs are working to get input dealers and traders to push and pull information from both sides.
  - DFAs are also providing training to farmers.
- All farmers in farmer’s groups should receive training.
  - Incentives may be necessary to convince lead farmers to train all farmers in their producer organizations. One form of incentive could be done through the FARMIS system through Infotrade.
  - With the Carana project, farmers each receive a booklet with photos for their own use on farm. This ensures messaging is received by all farmers in farmer’s groups. The PIN project could explore this model.
  - Radio and SMS systems will reach all farmers, therefore using these forms of communication could be valuable for PIN farmers.

Table 6. Current PIN Practices Financial Services

<table>
<thead>
<tr>
<th>Market Actors</th>
<th>Description</th>
</tr>
</thead>
</table>
| Tripartite agreement between Reco Industries, POs supported by PIN and Postbank. | - Financing will be available for farmers to purchase inputs, pay for production costs and increase post-harvest practices through access to finances to purchase tarpaulins or rent storage.  
  - Links to formal financial services will be made, as bank personnel will interface with farmers.  
  - This will begin in the start of 2015. |
| Savings groups at the producer-group level | All producer groups have been encouraged to start savings groups. VSLAs can be linked to more formal financial services, and can serve as a starting point for farmers to access financial services. |

### Gaps
- Many VSLAs to which PIN farmers belong have issues with record-keeping. Furthermore, VSLAs often cash out at Christmas, leaving them with little money in January. It is also unclear how these small loans are being used. Are they for investments in agriculture, or are they for consumption purposes only?
- Farmers require a variety of financial services; additional linkages can be made to other financing products and institutions.

### Opportunities
- Strengthen VSLAs to ensure they are managed well, with accurate recordkeeping and good management structures. Determine whether VSLAs are used for consumption or productive reasons. Encourage farmers not to cash out at Christmas (use interest only to cash out), so they are not restarting in January.
- Link farmers to additional financial linkages to improve access to financing.
  - FARMIS can prepare and link farmers with banks; this can be another way for PIN farmers to access financing and allow them to have the formal records the bank requires.
  - Link with Trias, which is addressing financing at the ACE level.
  - EAGC has financing for forward contracts. There may be potential to link PIN farmers to these buyers and obtain financing through EAGC.
- Monitor the PIN financing model for success. Determine who is accessing financing (i.e., what type of farmer), what the uptake is, and what farmers are using the money for (input, output, production, etc.).

35 However, in a meeting with a Naseco Seed Company, they indicated they were open to working with PIN to execute demonstration plots for these crops, using their seeds.

36 A forward contract in this case is a contract made between a buyer and a farmer. Prices are usually set beforehand and quality and quantity may be predetermined.
4. Recommendations for leveraging Linkages

The following describes existing program-supported interventions that the Uganda PIN project could leverage in support of improving farmer production, post-harvesting practices, and market linkages.

Links to inputs. Strengthen work with seed companies, input dealers, and programs that focus on strengthening input dealers. This could occur in a number of ways: develop a preferred distributors network in each of the districts; develop strong links with seed suppliers, especially for groundnuts and soybeans, matching supply with demand from the farmer side to minimize risk of oversupply for the seed companies; and link agro-input dealers with one farmer in each group who can aggregate demand for the entire group, saving on transaction costs for farmers.

Links with buyers. Many buyers, both within the country and without (e.g., Kenya) are seeking and will pay a premium price for good-quality grains. These linkages can be made directly to buyers or buyers’ agents through projects currently working in this space (Chemonics’ CPMA, TNS, SNV, EAGC, TGCU, Carana Corporation), by developing a preferred buyers network in each of the districts; ensuring PIN farmers are involved in oilseeds platforms around the country; and copying SNV’s business platform model of linking buyers and farmers during the year to build trust and transparency.

Links with financing. Mainstream VSLAs within the POs and seek additional training through Peace Corps volunteers, Airtel and MTN to strengthen their capacity and, ultimately, their impact on PIN farmers. Monitor financing developed by the PIN project closely to measure uptake and impact and develop other tripartite agreements with buyers willing to offer POs forward contracts. Link with other providers or finance (TRIAS, CPMA and Infotrade).

Links with other training or capacity building projects. Focus on the gap areas within the PIN project, specifically: training and capacity building for ACEs and POs; standards work by TGCU, EAGC and by EEAA; and pictorial-based curricula that can be provided to farmers and POs. Carana’s use of radio could also be adapted to benefit PIN farmers.

Links to market information. The potential exists to link PIN farmers to CPMA traders, who will be using ICT to reinforce preferred buyer/seller relationships; Infotrade’s two applications could be useful for PIN farmers to access market information, weather, and agricultural tips.
5. References


SNV. “Increased competitiveness of the value chain through improved information on the markets for Soya Bean in Uganda. Soya Bean Market Analysis Uganda for Rwenzori Oilseed Platform” (May 2011).