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VALUE CHAIN GOVERNANCE AND ACCESS TO FINANCE

MAIZE, SUGAR CANE AND SUNFLOWER OIL IN UGANDA

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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ABBREVIATIONS

APEP	USAID project: Agricultural Productivity Enhancement Project
ASPS	Danida Project: Agricultural Sector Programme Support
COMESA	Common Market for Eastern and Southern Africa
DFCU	Development Finance Corporation of Uganda
DFID	Department for International Development (United Kingdom)
EAC	East African Community (customs union)
IDEA	USAID project: Investment in Developing Export Agriculture
ILO	International Labor Organization (UN)
KACOFA	Kapchorwa Commercial Farmers Association
KSGL	Kinyara Sugar Growers Ltd.
KSWL	Kinyara Sugar Works Ltd.
MEMS	USAID project: Monitoring and Evaluation Management Services
PRIME	USAID Project: Productive Resource Investments for Managing the Environment
Rural SPEED	USAID project: Rural Savings Promotion & Enhancement of Enterprise Development
SCOPE	USAID project: Strengthening the Competitiveness of Private Enterprise
UGTL	Uganda Grain Traders Ltd.
UOSPA	Uganda Oil Seed Producers and Processors Association
WFP	World Food Program (United Nations)

EXECUTIVE SUMMARY

Value chain finance leverages value chain relationships in order to successfully screen clients, monitor their activities, and enforce formal or informal credit contracts. Value chain relationships allow value chain lenders to resolve the same problems that financial institution lenders face: knowing whether the client will be able to repay, and deciding whether the client will be willing to repay.

The value chain governance structure is important in determining how well a finance provider within the value chain can screen and select clients, how well it can monitor their activities, and how effectively it can enforce contracts.¹ Three value chains in Uganda were analyzed to better understand the relationship between governance and value chain finance.²

VALUE CHAIN FINANCE

Financial instruments such as supplier credit, trader credit, warehouse receipts, and in-kind lending are familiar features of many agricultural economies. These kinds of financial transactions are referred to as value chain finance: the provision of financial services by actors within value chains (direct value chain finance), or the provision of financial services by a financial institution based on contractual relationships within the value chain (indirect value chain finance).³ For this discussion we are particularly interested in direct value chain finance, provided by value chain actors. For example, input suppliers, traders and processors provide seasonal in-kind loans to farmers in the form of seed and fertilizer. Other examples include buyers who offer short term cash loans to farmers for hiring labor to harvest their crops; large scale traders and processors who make cash advances to small scale traders for use in purchasing and bulking products from farmers; or farmers who advance their product to buyers and receive payment only after the product is sold. These types of financial instruments can be important to expanding access to credit in agricultural economies and supplying credit necessary for value chain growth.

Finance provided within the value chain differs from finance provided by a financial institution in several important ways. Value chain actors are primarily motivated by production and productivity goals, and offer finance in order to ensure the success and profitability of their business activity (growing, trading, processing, etc.), rather than to earn income from the financial transaction itself.

Value chain lenders consider all investments, including the cost of providing finance, in the context of their overall productivity and profitability. They may accept higher levels of risk and losses in their

¹ It is important to distinguish between a firm's production activities (raw materials or processed products) and their finance activities. Value chain contracts often include two agreements: one, an agreement to buy/sell a certain quality and quantity of a product; and two, an agreement to offer/accept financing and repayment.

² The field research took place in January 2006. Data in this report draws from that research.

³ A concise exploration of value chain finance and its relationship to formal finance in broadening access to finance in rural and agricultural economies is presented in the USAID RAFI Notes series (http://www.microlinks.org/ev_en.php?ID=3739_201&ID2=DO_TOPIC).

lending operation, if the profits from the resulting production provide an acceptable overall rate of return.

Value chain lenders can also more easily bear the transaction costs of thorough client screening, monitoring, and contract enforcement because these activities can be incorporated into production activities, and thus simultaneously support production and repayment goals.

Direct value chain finance also differs from finance provided by a financial institution because it creates a “two way street” for lenders and borrowers. Value chain actors are dependent on each other for producing and marketing products as well as for lending and repayment. Lenders offer credit as a means to achieve their product market objectives, such as ensuring a supply of commodities for processing activities. Borrowers are reliant on value chain lenders as input suppliers or marketing channels as well as providers of credit.

On this “two way street”, lenders must decide who to lend to, how to monitor the performance of their clients, and how to successfully collect their loans. But borrowers must also evaluate whether lenders will fulfill their part of the contract, such as supplying promised inputs on time, buying the product at harvest, and paying on time and at a competitive price. Value chain analysis that incorporates issues of governance can help to evaluate how these financial and product market relationships impact the availability of value chain finance.

VALUE CHAIN GOVERNANCE

Value chain governance is the dynamic distribution of power and control among actors in a value chain.⁴ Power refers to the degree that one firm or group of firms dominates the value chain, and has a controlling influence on the quantity, quality, and price of goods. Power relationships among firms influence value chain competitiveness, opportunities for upgrading, and access to finance. While a single governance structure for an entire value chain can be defined, there are also varying relationships at each step of the value chain that can be described with the same terminology.

Governance can be characterized along a continuum of four types of relationships:⁵

Market relationship: Arms-length transactions in which there are many buyers and many suppliers (spot market); commodity is undifferentiated; repeat transactions are possible but not necessary; little information is exchanged between firms; interactions between firms are limited; and technical assistance is not provided.

Balanced relationship: Both buyers and suppliers have similar alternatives - if supplier has few buyers, then buyer has few suppliers; extensive information flow in both directions, with buyer often defining the product (design and technical specification); both sides have capabilities that are hard to substitute; both sides are committed to solving problems through negotiation rather than threat or exit.

⁴ There are a variety of definitions of value chain governance and typologies of governance structures. For additional sources, see Kaplinsky and Morris (2001) and Gereffi, Humphrey, and Sturgeon (2005).

⁵ These descriptions draw from microNOTE #6 AMAP BDS K&P Task Order Lexicon, which provides concise definitions of value chain terminology. For more information on governance, see http://www.microlinks.org/ev_en.php?ID=9893_201&ID2=DO_TOPIC

Directed relationship: Main buyer takes at least 50 percent of supplier's output; buyer defines the product (design and technical specification) and monitors the supplier's performance; buyer provides technical assistance; buyer knows more about supplier's costs and capabilities than supplier knows about buyer's; supplier's exit options are more restricted than buyer's.

Hierarchical relationship: Vertical integration of value-added functions within a single firm; supplier is owned by buyer or vice versa; limited autonomy to make decisions at the local level.

In a directed value chain, buyers exert significant influence over the quantity, quality, and price of goods traded in the market, and sellers have limited negotiating power. Regardless of the “unequal” power structure, a directed value chain may be a lucrative opportunity for both buyers and sellers. An export horticulture value chain, in which one dominant buyer guarantees a fixed price for specified quantities and qualities of product from smallholder farmers, may be an excellent opportunity for farmers to improve livelihoods and upgrade their skills and knowledge of export market demands. However, there may be concerns about equity and the distribution of benefits to smallholders.

In a balanced value chain, opportunities to identify alternative buyers or sellers creates more symmetrical power between buyers and sellers, and provides incentives to negotiate predictable shared standards for quantity, quality and price. In a market based value chain, many buyers and sellers engage in independent transactions in which quantity, quality and price are determined by the market, not by the firm, and there are limited incentives to create on-going relationships.

HOW DOES GOVERNANCE AFFECT ACCESS TO FINANCE?

A *market* based value chain has little opportunity for a value chain lender to screen or monitor specific clients, and little leverage for enforcing contracts. A *balanced* value chain has incentives for firms to cooperate by sharing information, jointly ensuring product targets are met, and respecting contracts that reflect interdependencies. A *directed* value chain provides the lead firm with more access to information, control over supplier production, and power to enforce contracts. Therefore, we expect to see more examples of successful financing among actors in value chains with a directed governance structure, and fewer examples in value chains with a market governance structure.

To better understand the relationship between governance and value chain finance, three value chains in Uganda are discussed below. The maize, sugar cane and sunflower oil value chains highlight various governance structures and examples of value chain finance.

For each value chain, the participants' ability to resolve the basic financial functions of client screening, monitoring and formal or informal contract enforcement are examined in the context of the governance relationships among the value chain actors.⁶ Importantly, the absence of value chain finance is also considered in relation to the governance structure. Finally, some conclusions are drawn about how governance structures and value chain production goals affect the availability of value chain finance.

⁶ Contract enforcement does not necessarily imply legal/judicial enforcement. It may take the form of sanctions that ensure that the cost to the borrower of defaulting is higher than the cost of repayment.

MAIZE VALUE CHAIN

The maize value chain in Uganda has a market governance structure. Many buyers and many sellers at each step in the value chain conduct transactions on a spot market basis. Quality standards and grades are just beginning to emerge. Competitiveness is based on price and availability of product. Demand is irregular and prices are volatile. Value chain actors operating in this market governance structure generally do not form long term relationships or enter into contracts. They cannot fulfill the basic functions of client screening, monitoring, and contract enforcement necessary for successful production contracting or for offering value chain finance nor are there incentives to do so.

Small scale farmers represent 90-95 percent of the total maize farmers and produce 80 percent of the total output. They use traditional production techniques without purchased inputs.⁷ They grow maize for household consumption and sell small surpluses to rural traders at the farm gate for immediate cash payment, or transport a short distance to a rural store.

Rural stores are simple one room storage facilities that service 30-50 nearby farmers, either directly or through rural traders. There is no evidence of finance offered by rural store owners or rural traders to farmers, given the number of farmers and traders in a given area, and the opportunity for farmers to sell to a variety of rural stores.

Rural store owners consolidate quantities of maize throughout the season, and sell these larger amounts to regional traders. The regional traders are located in urban trading centers and buy maize from 10-30 rural stores. Regional traders supply finance in the form of advance payments to rural stores. These advance payments provide the liquidity necessary for rural store owners to bulk adequate quantities of maize. These advance payments were the only example of direct value chain finance in the maize value chain.

The relationship between rural store owners and regional traders has a balanced governance structure. Regional traders rely on rural store owners to bulk adequate quantities of maize—they cannot support the transaction costs of purchasing small quantities from many small farmers. Rural store owners are dependent on regional traders as marketing outlets—they do not have the resources to transport significant quantities of maize to national markets. They are therefore interdependent and equally committed to maintaining long term relationships. These factors facilitate the screening, monitoring and contract enforcement that are important for value chain finance.

Regional traders screen rural store owners through their existing relationships with the rural store owners from their home villages, or by developing relationships through a series of small

MAIZE SEED (ORV. LONGIT)		1 Acre (1.5ha)
1 - SLEAVING		15,000
2 - 1 st PLOUGHING		45,000=
3 - 2 nd PLOUGHING		45,000=
4 - SOWING / SEEDS (1kg)		12,000=
5 - SOWING		15,000=
6 - 1 st WEEDING		15,000=
7 - 2 nd WEEDING		15,000=
8 - HARVESTING		25,000=
9 - ACETIC LIQUID		3,000=
10 - SORTING		5,000=
11 - SHELLING REJECT		2,000=
TOTAL COSTS =		197,000F
NB Cost of Seed is 1200F per Kg		
- AVERAGE YIELD 12,000kg		
- SICK GRAIN IS 800KG		
- DRY GRAIN IS 400KG		
Therefore, 800kg x 360 = 288,000F		
400kg x 200 = 80,000F		
TOTAL REVENUE = 368,000F		

**Maize Profit Analysis -
Uganda National Farmer
Federation Branch Office**



Maize Miller and Retailer

⁷ Only 5–15 percent purchase improved seed, and less than 2 percent use fertilizers or pesticides.

transactions. The value of advance payments increases as rural store operators prove trustworthy through repeat transactions. Client monitoring is also accomplished through repeat, short term transactions during the marketing season. The length of the loan is short (2 days to 2 weeks) which makes it easier to monitor. The fact that rural store owners are tied to their physical store location provides an additional avenue for monitoring. Family and community networks and personal visits are used to monitor the store owner's operations. The primary method of contract enforcement is the threat of refusing future transactions, and the threat of damage to the rural store owner's reputation which will also prevent other traders from providing advances. Rural store owners simply cannot accumulate adequate inventory and rent storage space without access to the trader's capital. Therefore, the sanction of loss of future transactions is sufficient to ensure contract fulfillment and loan repayment.

At the remaining steps in the maize value chain, the market governance structure dominates. Many regional traders sell to Kampala based national traders and brokers on a spot market basis with immediate cash payment.

Millers form the last step in the value chain, before sale to end users. Many small “posho” millers serve the domestic household consumption market. Large millers serving the institutional or export trade are often subsidiaries of the Kampala trading companies and operate on a fee for service basis.⁸

The maize value chain demonstrates the limitations of direct value chain finance within a market governance structure. At most steps in the value chain, the large number of actors and the undifferentiated commodity limit production contracting and value chain finance. Only where a balanced relationship exists, between regional traders and rural stores, is direct value chain finance available, because the lenders can screen and monitor the rural store owners and use a credible threat of refusing future transactions to enforce contracts.



Posho Miller

SUGAR CANE VALUE CHAIN

Sugar cane is a domestic consumption crop in Uganda. Currently, domestic production of sugar is approximately 200,000 tons and imported volume is approximately 40,000 tons. Domestically produced sugar, with reduced transportation and tariff costs, enjoys a competitive advantage over regional imports, and is protected by a 100 percent tariff on sugar imports from outside of the East African Union.⁹ In addition, the per capita consumption of sugar in Uganda is exceptionally low.¹⁰ Domestic competitive



Fire Lookout at Kinyara

⁸ Although there are no additional examples of direct value chain finance, the Kampala based traders do access collateralized loans from banks, and posho millers may receive cash flow based microenterprise loans.

⁹ Uganda Sugarcane Technologists' Association Seventh Annual Report for Calendar Year 2004.

¹⁰ ibid. Domestic consumption estimated at 9 kg per year, compared to a regional average of 14 kg and a world average of 23 kg per year.

advantage and the potential for increased demand in the domestic market indicate strong potential for growth in the Ugandan sugar industry.

Kinyara Sugar Works Ltd. and Kakira Sugar Works Ltd. are two of the three major sugar cane producing and processing firms in Uganda. Both are undergoing major expansions in response to the industry's growth potential.

In 2006, Kinyara had 900 outgrowers and processed 670,000 tons of sugar cane. Their expansion goal was to increase to 1700 outgrowers and process 1,000,000 tons of sugar cane. Kakira operates on a much larger scale. In 2006, they had 3600 outgrowers and processed 990,000 tons of sugar cane. Their expansion target was to reach 6000 outgrowers and to process 1,500,000 tons of sugar cane. Their differing strategies to attain these goals present interesting lessons about the role of direct value chain finance in value chain expansion or upgrading strategies.

Both Kinyara and Kakira operate on the sugar estate model. A sugar estate is a production unit consisting of a processing factory, a 'nucleus estate' (plantation) on which sugar cane is grown by wage employees, and an area surrounding the nucleus estate where sugar cane is grown by independent farmers. These farmers may be formally contracted outgrowers, or simply independent farmers who offer their cane on a spot market basis to the sugar company.

Formally contracted outgrowers receive finance from the sugar firms in the form of in-kind credit for land preparation, seed cane, fertilizer, farm labor, harvesting, and transportation to the factory. In return, they are obligated to sell 100% of their cane production to the sugar estate and to allow the loan repayments to be deducted from the sale price.

The estate model is a directed value chain, with a lead firm that has significant buying power over its outgrowers, where there are few opportunities for side selling, and where contracts are used to control production and ensure supply. In some areas, however, small-scale jaggery mill operators compete for purchasing sugar cane. Jaggery is an unrefined form of sugar cane juice, which is used in Uganda for local alcohol production. When competition from jaggery mills increases, the value chain can move towards a balanced governance structure with increased opportunities for side selling.

Differences between Kinyara and Kakira in value chain governance structures, outgrower contract management, expansion goals, and local competition have resulted in different outcomes for their value chain finance programs.

Kinyara operates a purely directed value chain. There is virtually no opportunity for side selling in Kinyara's geographic region. Kinyara purchases only from contracted outgrower farmers, never from independent farmers. They conduct very thorough client screening before contracting with a farmer. They train farmers to fulfill strict quality standards and production schedules. Kinyara is quite rigid about abiding by contracts, providing inputs, harvesting on schedule, and paying according to the



Sugar Cane Harvest



Sugar Cane Processing

agreements. They also enforce contracts, through the sanction of eliminating a farmer from the outgrower scheme who does not fulfill quality and schedule requirements. Kinyara offers full financing for planting, fertilizing, harvesting, and transport, which is repaid through a deduction from the farmers' sale price. Kinyara has maintained this model despite pressure to increase production. They have brought 800 new contracted farmers into the system, while enjoying a 99.5 percent repayment rate and satisfying all production and expansion targets.

Kakira purchases from both contracted and non-contracted farmers. Kakira also faces competition from jaggery mill operators, and from another sugar company located 50 km. from Kakira. This creates a balanced value chain governance structure, in which Kakira has a range of farmers from which to buy cane, and farmers have a variety of competing buyers.

Kakira's contracted outgrowers receive full financing for planting, fertilizing, harvesting, and transport. The firm's client screening and monitoring are less rigorous than those of Kinyara. Production schedules and quality standards are not as controlled, since Kakira may buy from non-contracted farmers over whom it has little influence during the growing season. Kakira's contract enforcement is less effective, since the sanction of ending the outgrower contract does not eliminate the farmer's income from sugar cane production—the farmer may still sell to Kakira as a non-contracted farmer, or may sell to the jaggery mills.

In 2004-2005, Kakira responded to the pressure to increase production and the opportunity of low spot market prices by purchasing cane from non-contracted farmers while delaying the harvests of the contracted farmers. This was a violation of their contracts with the farmers that guaranteed a specific harvest time. Immediate cash flow needs, and improving prices from jaggery mills, drove many contracted farmers to side sell and thereby default on their loans from Kakira. Side-selling of sugarcane skyrocketed and the default rate sharply increased from less than one percent to 25 percent. Kakira estimates that it lost 150,000 tons of sugarcane (15 percent of expected production) to the jaggery market in 2005.

However, Kakira met its need for increased processing of sugar cane. Kakira was able to ramp up production by 40% and add 2400 new contracted outgrowers at an acceptable cost.

These two examples demonstrate that governance structures can affect the success of value chain finance, even when fairly similar models are used to produce the same product. Greater competition and less rigorous client screening and monitoring will weaken the firm's contract enforcement and have a potentially negative impact on the fulfillment of production and credit contracts.

However, repayment rates are only one factor that value chain actors consider when deciding to offer finance as part of an expansion or upgrading strategy. Screening and monitoring clients and enforcing contracts can improve repayment rates, but the transaction costs of completing these tasks thoroughly may not be the optimal use of capital. A value chain lender may accept higher default rates when pursuing other strategic goals such as quickly increasing production.



Sugar-Final Product

SUNFLOWER OIL VALUE CHAIN

There are two main channels in the sunflower oil value chain. The first comprises an estimated 30,000 small scale farmers, independently producing local variety sunflower seed and marketing to local millers for processing into oil. This independent channel has a market governance structure, with most transactions occurring on the spot market and few examples of contracting or direct value chain finance.

One example of direct value chain finance within the independent channel is delayed payments offered by oil wholesalers to retailers. Oil wholesalers purchase oil from millers for distribution. Oil is sold in progressively smaller unlabelled plastic containers throughout the distribution channel. Wholesalers serve informal “territories” and form on-going relationships with retailers within those areas. Retailers operate small stores or public market stalls. There is a significant level of advances of oil from wholesalers to retailers, who delay payments until they have sold the product.

The relationship between wholesalers and retailers has a balanced governance structure, since retailers and wholesalers within a certain territory rely on each other to service the area. Wholesalers develop trust relationships over the long term by regularly visiting retailers to check on inventory and collect payment. Contract enforcement is based on the sanction that wholesalers can refuse to deliver new stock until prior stock is paid for. Retailers, generally served by one wholesaler, would be challenged to develop a new relationship with another wholesaler.

The second channel is an outgrower scheme run by Mukwano Industries, a large Ugandan conglomerate. Mukwano has 7,500 farmers under contract to produce sunflower seed from the hybrid PAN 7351.¹¹ Mukwano’s stated goal is to have 100,000 farmers producing 300,000 tons of seed throughout three regions of Uganda. They plan to build a 300 ton mill in the Lira region. However, Mukwano has been unable to source the necessary amount of hybrid seed from the producer in South Africa, and currently can only contract with a small number of farmers.

Mukwano has attempted to establish a directed governance structure: the firm contracts to be the sole input provider and buyer of the farmers’ production. The small farmers are organized into farmer groups and supervised by Mukwano site coordinators. Each site coordinator takes part in a screening and training program with the firm, and is supervised by a Mukwano employee. These site coordinators are not Mukwano employees, but receive a commission based on their groups’ production.



Drying Sunflower Seed



Sunflower Farmer Group

¹¹ Data as of 2006.

Farmers enter into contracts that specify that all of their production must be sold to Mukwano. The contract establishes quality standards and sets a floor price, and commits Mukwano to providing input seed and free extension services. Mukwano does not provide any input financing. Farmers are limited to purchasing six kgs of hybrid seed and must pay cash when orders are taken two to three months before planting. At harvest, farmers are responsible to deliver their seed to a collection site operated by the site coordinator, where they receive immediate payment. Mukwano is entitled to institute appropriate legal action in the event of side selling, although there is no evidence that they have resorted to this action.

The only direct value chain finance within Mukwano's outgrower scheme is cash advances provided to contracted site coordinators for purchasing the harvest from farmer groups. These are very short term (1-2 days) advances, given to a borrower who is well known to Mukwano, and who has made an investment in developing a relationship with the firm.

Mukwano's sunflower outgrower scheme is an interesting case of a lead firm choosing not to offer financing for production, though they have tried to establish a directed value chain governance structure that could facilitate such lending. Although much of the procurement infrastructure is similar to that of the sugar industry, with site coordinators, organized farmers and use of contracts, Mukwano has not chosen to provide in-kind lending of inputs.

There are three reasons that Mukwano has decided not to offer input financing. First, Mukwano does not need to offer finance in order to meet production goals. There is a limited amount of PAN 7351 seed available, and Mukwano recruits enough farmers who can pay in advance for the seed.

Secondly, although the Mukwano channel considered in isolation has a directed governance structure, the independent channel provides ample opportunities for side selling to millers that can process local variety or the hybrid. Farmers producing for Mukwano are likely to side sell when higher prices are offered by local millers. Mukwano has not been willing to compete on price or create more effective sanctions to prevent side selling. The ease of side selling increases the risk of direct value chain lending.

Finally, Mukwano management expresses reluctance to lend to farmers at an interest rate that would cover its risks and costs. Because of the history of Asian owned businesses in Uganda, Mukwano feels particularly vulnerable to charges of exploitation of poor farmers. Mukwano has worked with several donor funded efforts to identify other sources of finance for farmers. Mukwano would prefer to have other sources of income in place when adequate hybrid seed becomes available and they are required to greatly expand the number of outgrowers.

Mukwano is in a pilot phase of sunflower oil production, and is making a strategic decision not to invest resources in financing farmers or in strict contract enforcement. This strategy may change,



Sunflower Oil Press



Sunflower Oil Retailer

however, when Mukwano attempts to scale up the program to attain its stated goals of 100,000 farmers producing adequate seed to supply a 300 ton mill. When enough supply of PAN 7351 is available, Mukwano will need to work with many more poor farmers who are likely to need input financing. Mukwano will also need to ensure that they capture all of the harvest in order to keep the mill running at capacity.

CONCLUSIONS

IMPACT OF GOVERNANCE ON VALUE CHAIN FINANCE

Agents in the value chain face the same challenges as financial institutions when they make loans. They must develop ways to effectively and efficiently screen and monitor clients and enforce loan contracts. Their relationships within the value chain may facilitate accomplishing these tasks. However, the governance structure also has an important impact on firms' ability to complete these necessary steps.

The directed governance structure of the sugar value chain provided the lead firms with the ability to screen and monitor farmers, and to offer a credible threat of a serious sanction in case of default. These cases provided the only examples of direct value chain finance for production. The Kakira Sugar Works Ltd. experience, however, shows that even in a directed value chain, when the production aspect of contracts was broken by the firm, value chain finance was likely to fail also. The "two way street" of value chain relationships require that agreements around both finance and production are respected by both parties.

The market governance structure of the maize and sunflower value chains does not allow for the effective screening, monitoring or contract enforcement necessary for successful financial transactions within the value chain. Spot market transactions for undifferentiated products such as maize and sunflower seed do not enable potential lenders to screen or monitor clients. Easy access to alternative buyers increases the options for borrowers to side-sell and avoid loan repayment. This prevents contract enforcement, because the lender would have little leverage. In addition, the availability of many sellers also reduces the incentive for buyers to make loans tied to production contracts.

Value chain finance for trading, however, was found within the maize and sunflower value chains, where a balanced governance structure existed between the actors. Rural stores and regional traders in the maize value chain, and wholesalers and retailers in the sunflower value chain, are interdependent. Both parties rely on each other to meet product market goals, and neither is easily replaced. The geographic delineation of territory for rural store owners bulking maize, or for sunflower oil distributors delivering product, creates relationships with incentives for maintaining long term cooperation and coordination. Through repeat transactions on these "two way streets", rural store owners develop confidence that regional traders will consistently buy their product at an acceptable price, and regional traders develop confidence that rural store owners will provide the product they need in a timely fashion. Sunflower oil distributors build confidence that small retailers will buy product from them and repay the advance of product with cash from sales. This kind of screening and monitoring enables direct value chain finance, even though lending is limited in size and term.

ADDITIONAL DETERMINANTS OF VALUE CHAIN FINANCE

The governance structure, however, is not the only determinant of the availability of value chain financing. Even when the necessary functions of client screening, monitoring and contract enforcement cannot be ensured, production goals may drive a value chain actor to provide finance. Value chain actors offer credit only when it contributes to their production objectives, and they consider the costs of offering credit as an additional cost of doing business. As long as their main business activity is successful, an agent in the value chain that makes informal loans may be able to absorb these transaction costs and tolerate a higher default rate on its loans than can a financial institution whose primary business and source of income is lending. For example, Kakira chose to pursue production expansion goals at the expense of increased losses from lending.

The production relationships among value chain actors also lower transaction costs for value chain lenders. The transaction costs involved in value chain lending are less than those faced by financial institutions because the lenders are already conducting other transactions with their borrowers as part of their main business of trading and/or processing agricultural products. These other transactions, such as registering outgrower farmers, or picking up stocks from a rural store, also serve to screen and monitor clients.

However, value chain actors offer finance only if it is necessary to attain their production goals. Mukwano chooses not to offer finance because they can attain their production goals without offering finance. If Mukwano chooses an expansion strategy, similar to the sugar companies, they may have to offer finance in order to recruit enough farmers. However, they will also need to deal with the presence of alternative buyers from the independent channel, which impacts the value chain governance structure.

CONSIDERATIONS FOR DONOR INTERVENTIONS

The analyses in this paper explore how governance structures influence the availability of finance within value chains. It appears that direct value chain finance may not be feasible in value chains with a market governance structure, where a multitude of buyers and sellers of identical commodities increases the opportunities for side selling, thus making contracting, client screening, monitoring and enforcement difficult and risky. It is not likely that interventions to increase direct value chain lending within these types of value chains will be successful. However, alternative sources of finance that reduce risk or enable contracting, such as warehouse receipt lending, may succeed.

Balanced and directed value chain governance structures provide greater opportunities to increase lending within the value chain to achieve expansion or upgrading objectives.

In a balanced value chain, lenders and borrowers have strong incentives to abide by contracts because they can have relatively equal impacts on each other's businesses. Financial transactions in these types of value chains employ trust and long term relationships between buyers and sellers. Interfirm cooperation among competitors to exclude defaulters from participating with any of the other actors in the value chain increases the severity of the sanction for breaking a contract. Interventions which enhance contract enforcement could have important impact in a balanced value chain. In a directed value chain, a monopoly buyer holds power and control which enable effective contracting, client screening, monitoring and enforcement. It is most common to find direct value chain finance operating well within directed value chains. Directed value chains producing high value products often present good opportunities to increase economic activity in a community and improve farmer

livelihoods. These types of structures, however, also have inequitable distribution of power and benefits along the chain, which may reduce bargaining power and choices for producers. Interventions to strengthen these types of value chains, including efforts to increase financial flows, should initially be evaluated for impact on the smallholder. Within directed value chains, interventions to increase options for smallholders, in terms of access to finance or the production of alternative commodities, may be useful. These types of interventions could affect the governance structure, the distribution of benefits, and the overall competitiveness of the value chain.

INTRODUCTION

VALUE CHAIN FINANCE

Financial tools such as supplier credit, trader credit, warehouse receipts, and in-kind lending are familiar features of many agricultural economies. These kinds of financial transactions are referred to as value chain finance: the provision of financial services by actors within value chains, or the provision of financial services by a financial institution based on contractual relationships within the value chain.¹² For example, some input suppliers, traders and processors provide seasonal in-kind loans to farmers in the form of seed and fertilizer. Others provide short term cash loans so farmers can hire labor to harvest their crops. Large scale traders and processors sometimes make cash advances to small scale traders for use in purchasing and bulking products from farmers. Manufacturers and wholesalers provide supplier credit to retailers and petty traders as part of their strategy to increase product sales. These types of financial tools can be important to expanding access to credit in agricultural economies and supplying credit necessary for value chain growth.

Value chain finance differs from finance provided by a financial institution in several important ways. Value chain actors are primarily motivated by production goals, and offer finance in order to ensure success and profitability of value chain production, processing or marketing. Value chain lenders consider all investments, including the cost of providing finance, in the context of their overall productivity and profitability. They may accept higher levels of risk and losses in their lending operation, if the profits from the resulting production provide an acceptable overall rate of return.

Value chain lenders can also more easily bear the transaction costs of thorough client screening, monitoring, and contract enforcement because these activities can be incorporated into production activities, and thus simultaneously support production and repayment goals.

Value chain finance also differs from finance provided by a financial institution because it creates a “two way street” for lenders and borrowers. Value chain actors are dependent on each other for producing and marketing products as well as for lending and repayment. Lenders offer credit as a means to achieve their product market objectives, such as ensuring a supply of commodities for trading and processing activities. Borrowers are often reliant on value chain lenders as input suppliers or marketing channels as well as providers of credit.

On this “two way street”, lenders must decide who to lend to, how to monitor the performance of their clients, and how to successfully collect their loans. But borrowers must also evaluate whether lenders will fulfill their part of the contract, such as supplying promised inputs on time, buying the product at harvest, and paying on time and at a competitive price. Value chain analysis helps us to evaluate how these financial and product market relationships impact the availability of value chain finance.

¹² A concise exploration of value chain finance and its relationship to formal finance in broadening access to finance in rural and agricultural economies is presented in the USAID RAFI Notes series (http://www.microlinks.org/ev_en.php?ID=3739_201&ID2=DO_TOPIC).

Successful donor interventions in value chain finance can develop from a deeper understanding of existing value chain finance relationships, in the same way that effective support to the microfinance industry developed from a deeper understanding of existing informal credit markets. Understanding the features of successful value chain finance will contribute to understanding what conditions are required to make this type of finance possible, how donor interventions may support and further the provision of this kind of finance, and the strengths and weaknesses of financing provided by value chain actors.

VALUE CHAIN GOVERNANCE

The simplest definition of value chain governance is: a description of the dynamic distribution of power and control among actors in a value chain.¹³ Power refers to the degree that one firm or group of firms dominates the value chain, and has a controlling influence on the quantity, quality, and price of goods. Power relationships among firms influence value chain competitiveness, opportunities for upgrading, and access to finance. While a single governance structure for an entire value chain can be defined, there are also varying relationships at each step of the value chain that can be described with the same terminology.

Governance can be characterized along a continuum of four types of relationships¹⁴:

Market Relationship: arms-length transactions in which there are many buyers and many suppliers (spot market); commodity is undifferentiated; repeat transactions are possible but not necessary, and little information is exchanged between firms; interactions between firms are limited and no technical assistance is provided.

Balanced Relationship: both buyers and suppliers have alternatives; supplier has various buyers; if supplier has few buyers, then buyer has few suppliers; extensive information flow in both directions, with buyer often defining the product (design and technical specification); both sides have capabilities that are hard to substitute; both sides are committed to solving problems through negotiation rather than threat or exit.

Directed Relationship: main buyer takes at least 50 percent of supplier's output; buyer defines the product (design and technical specification) and monitors the supplier's performance; buyer provides technical assistance; buyer knows more about supplier's costs and capabilities than supplier knows about buyer's; supplier's exit options are more restricted than buyer's.

Hierarchical Relationship: vertical integration of value-added functions within a single firm; supplier is owned by buyer or vice versa; limited autonomy to make decisions at the local level.

In a directed value chain, asymmetrical power allows one firm to exert significant influence over the quantity, quality, and price of goods traded in the market. In a balanced value chain, symmetrical power (or a “win-win relationship”) describes the situation where power is distributed in a more

¹³ There are a variety of definitions of value chain governance and typologies of governance structures. This paper draws on work done by USAID. For additional sources, see Kaplinsky and Morris (2001) and Gereffi, Humphrey, and Sturgeon (2005).

¹⁴ These descriptions draw from microNOTE #6 AMAP BDS K&P Task Order Lexicon, which provides concise definitions of value chain terminology. For more information on governance, see http://www.microlinks.org/ev_en.php?ID=9893_201&ID2=DO_TOPIC.

balanced manner among actors. In a market value chain, buyers and sellers engage in independent transactions in which quantity, quality and price are determined by the market, not by the firm.

HOW DOES GOVERNANCE IMPACT ACCESS TO FINANCE?

Value chain finance operates with the same logic as any other financial transaction. Value chain lenders face the same information asymmetries (knowing whether the client can pay) and moral hazard problems (deciding whether the client will pay) that financial institutions face. Successful financial relationships require a formal or informal contract, and some form of client screening, client monitoring and contract enforcement.¹⁵

The value chain governance structure is important in determining how well a lender can screen and select clients, how well they can monitor their production, and how effectively they can enforce contracts. A directed value chain provides the lead firm with more access to information, control over supplier production, and power to enforce contracts. A balanced value chain has incentives for firms to cooperate, sharing information, jointly ensuring product targets are met, and respecting contracts that reflect interdependencies. A market based value chain has little opportunity for a value chain lender to screen or monitor specific clients, and little leverage for enforcing contracts. Therefore, we expect to see more examples of successful value chain finance in directed value chains, and fewer if any successful example in value chains with a market relationship governance structure.

WHAT THIS PAPER OFFERS

The research goal was to understand the conditions in which value chain finance is available without any donor intervention. We focused specifically on the impact of the value chain governance structure on the availability of finance. At each step in the value chains, we determined whether value chain finance was present or absent. We examined whether value chain actors could accomplish the necessary client screening, monitoring and contract enforcement, and the impact this had on the availability of value chain finance. With an understanding of the governance structure, we also considered the “two way street” in which the actors’ product market goals influenced whether they offered value chain finance, particularly in situations where lenders accept higher levels of risk and loss in return for attaining their product market objectives.

Some general conclusions were reached about the governance structures under which value chain finance is likely to succeed. These conclusions can guide donors and practitioners in understanding existing conditions prior to designing value chain finance interventions.

The field work and analysis for this research followed five basic steps:

1. Select value chains to illustrate a variety of value chain governance structures, and both the presence or absence of value chain finance.

¹⁵ Contract enforcement does not necessarily imply legal/judicial enforcement. It may take the form of sanctions that ensure that the cost to the borrower of defaulting is higher than the cost of repayment.

2. Describe the value chains, governance structure, and production process. Identify existing value chain finance and financing provided by financial institutions.¹⁶
3. Where value chain finance is identified, outline the key features of the written or verbal financial contracts.
4. Analyze how the agents in successful value chain finance transactions resolve the required functions of client screening, monitoring and contract enforcement.
5. Draw lessons learned about how governance enables or prevents financial transactions within the value chains.

¹⁶ Financial services provided by financial institutions are important to understanding the entire financial system of the value chain, particularly the liquidity available for value chain lending. The role of financial institutions in each value chain is described but not examined in detail for this paper.

VALUE CHAIN GOVERNANCE AND ACCESS TO FINANCE IN UGANDA

WHY UGANDA?

Uganda is often cited as a model in Africa of a country that has undertaken major economic, financial and agricultural reforms. Therefore, it is possible to gain insights into how financing for agriculture is affected by and evolves after these reforms, and to identify the opportunities and challenges that remain.

In countries like Uganda prior to liberalization, state-owned agricultural and commercial banks, parastatal marketing boards, and agricultural cooperatives attempted to resolve bottlenecks in farmer access to markets, modern inputs, and credit. With liberalization, many of these efforts were discontinued and farmers found themselves without access to production inputs, credit to pay for them, or marketing channels for selling their output. Private firms have begun to emerge to fill this vacuum, and some use value chain finance as a tool in accomplishing their primary business objectives of production or marketing. This presents new opportunities for growth and profitability. Understanding value chain finance in these situations can provide important guidance for donors and practitioners.

VALUE CHAIN SELECTION AND RESEARCH

The following criteria were established for selecting value chains for detailed study:¹⁷

- Value chains with a variety of financing arrangements and governance structures so as to provide opportunities to compare and contrast results.
- Relative importance of the value chain as a source of income and employment for small farmers.
- Potential for generating information about value chain financing that would be generally useful beyond the potential contribution that the research would make to the specific circumstances of Uganda.

Using these criteria, three agricultural commodities were chosen for detailed analysis: sugar, maize and sunflower oil. The recognized differences in the availability of value chain finance in these commodities suggested that comparisons among them would yield useful insights about the factors that facilitate or inhibit the development of financial services. Taken together, these commodities offer interesting possibilities for agriculture, and especially for small farmers, through expanded import substitution and/or export.

¹⁷ The field research took place in January 2006. Data in this report draws from that research. Given that our goal was to understand the success or failure of private sector finance within value chains, we did not seek to study donor activities or interventions although we make note of them when appropriate.

Following the selection of the value chains, the team undertook a series of interviews and meetings with key actors in the chain as well as with support institutions in Kampala and four upcountry locations: Lira, Mbale, Masindi and Jinja. Included were farmers, processors, traders, retailers, financial institutions, and donor institutions.

UGANDAN CONTEXT

Yoweri Museveni's government came to power in 1986 facing the huge task of reforming and reinvigorating a country that was staggering under the effects of decades of conflict and devastating economic policies that caused massive capital flight and a breakdown of institutions. Uganda has been applauded for being the pioneer of macroeconomic stabilization and structural adjustment in Sub-Saharan Africa, with success in restoring macroeconomic stability, boosting the economic growth rate, and reducing poverty. Reforms that were intended to assist agriculture included liberalized exchange rate and trade policies, liberalization and restructuring of the banking sector, and a reduction in the role of parastatal marketing boards.

Uganda's annual GDP growth rate averaged over 6 percent from 1987 to 2000, but declined to below 2 percent in the early 2000's. Population growth, however, cut per capita GDP growth to 3 percent and below. The slow down in growth indicates that some of the easier methods of improving growth and reducing poverty have been exhausted, and the next steps such as modernizing agriculture and broadening access to financial services will be more challenging.

FINANCIAL SECTOR PERFORMANCE AND REFORMS

The financial sector in Uganda faced serious problems in the 1980's and 1990's including political interference and poor government policy, failing institutions, and high rates of non-performing loans. Major financial sector reforms were initiated in 1987, including greater independence for the central bank (Bank of Uganda - BOU), enhanced powers for the BOU to supervise and monitor the financial sector and greater liberalization of the banking sector. The financial system now includes fifteen commercial banks, a development finance corporation (DFCU), four newly licensed microfinance deposit-taking institutions (MDIs), and thousands of unregulated microfinance institutions (MFIs), savings and credit cooperatives (SACCOs), community-based organizations (CBOs), and other informal providers of financial services (Meyer, Roberts and Mugume, 2004).

The performance of the financial system improved following the reforms although weaknesses in the banking sector remain. The structure of bank assets still reflects a high level of risk aversion, with a majority of funds invested in high yielding government securities or in foreign assets. Real lending interest rates have substantially increased following reform with large spreads between lending and borrowing rates, due to lack of competition and high interest rates on government securities.¹⁸ Branch closings and population growth have increased the number of customers per bank branch to 190,000, which compares poorly with the average of 7,000 customers per bank branch for the Common Market for Eastern and Southern Africa (COMESA) region (Meyer, Roberts and Mugume, 2004).

¹⁸ Bank assets are highly concentrated with Stanbic Commercial Bank and Standard Chartered holding about 55 percent of all bank assets in 2002.

AGRICULTURAL PRODUCTION AND MARKETING

According to the Government of Uganda's Plan for the Modernization of Agriculture (2000), agriculture accounts for over 80 percent of all employment, supports the livelihoods of the majority of the rural population that constitutes 85 percent of Uganda's population, and accounts for 85 per cent of Uganda's export earnings. For Uganda, reducing poverty necessitates increased efficiency and profitability in agriculture.

Agricultural growth rates were highly variable during the 1990s, ranging from 2 to 8 percent. Growth rates of cash crops generally outstripped those of subsistence crops. High growth rates and a reduction in rural poverty in the 1990s were attributed to a restoration of peace, investments, the coffee boom in the mid 1990s, and liberalization of agricultural markets. However, the deterioration of coffee and other commodity prices in recent years contributed to a reversal in positive trends towards reduced rural poverty. Food insecurity remained a problem for 63.5 percent of the population in 2002.

Uganda has fertile soils, and bi-modal rainfall patterns in parts of the country permit double cropping. The modernization of agriculture, however, is complicated by the fact that most of the country's farmers operate small farms of 1 to 3 hectares, produce mainly for subsistence, and employ traditional farming technology with land clearing and tillage often performed by hand. Less than 10 percent of the farmers use fertilizer and the share is even lower among small farmers. An estimated 60,000 more commercially oriented individual farmers produce on a larger scale, use somewhat more modern production techniques, and sell a larger share of their production. Problems of access to land, modern inputs, and markets, wide fluctuations in commodity prices, and erratic weather patterns constrain agricultural modernization and contribute to rural poverty.

High transaction costs characterize the assembly and marketing of farm products because of small scale farm production and poor roads and transport. The first step in the marketing chain for many products are "debe boys" who purchase commodities by travelling the back roads and trails with five gallon plastic containers (debes) strapped to the back of bicycles. The next step are petty traders who transport a larger volume on light weight motorcycles ("bodas") also used to carry passengers. Rural stores with one room storage facilities consolidate product from these small scale traders for sale to the next step in the chain, larger scale traders with pickups and trucks who assemble and transport larger volumes to processing facilities and warehouses. Lack of appropriate storage and processing facilities causes high post harvest losses. It also restricts the size of transactions, reduces bargaining power, and increases the bulking cost for traders. Product quality is generally poor because farmers don't practice proper harvest and post-harvest techniques. Information asymmetry between producers and traders exists for all crops, but efforts are being made to increase access to price information. The USAID supported Foodnet system supplies price information for 24 crops at 21 market sites through FM radio, SMS messages to cell phones, emails, and on a website.

Private marketing firms, both foreign and domestic, are emerging after liberalization but they tend to be small and undercapitalized. Most trading operations were started with savings rather than borrowed funds and continue to operate on a small scale. Over three-quarters reported buying from regular suppliers, normally without contracts, and they in turn are free to sell to any buyers. Some traders offer credit to buying agents to aid them in bulking supplies. About half the traders in Kampala belong to trader associations, compared to less than a quarter for those located elsewhere indicating a lack of cohesiveness and weakness for taking collective action (Nkonya, 2002). Lack of

established networks also reduces the exchange of information that is important for successful trading.

ACCESS TO RURAL FINANCIAL SERVICES¹⁹

There is little quantitative data available on the access to and use of financial services by Ugandan farmers but it is generally believed that they lack access to formal financial services. Analysis of data from a 1999/2000 survey showed that 32 percent of those interviewed did not know where to apply for a loan or did not have a source of supply.²⁰ Farmers largely self-finance their operations or engage in a variety of informal financial arrangements, and rarely have bank deposit or savings accounts. Most small agro-businesses that sell to and buy from farmers also rely on self or informal finance but they are more likely to be located in towns so more frequently use banks for transaction purposes.

The share of total commercial bank loans and advances to agriculture steadily declined from over 20 percent at the end of the 1980s to less than five percent in 2004 (Mugume, 2005). The large commercial banks tend to provide financial services only to large farms, estates, and large agro-industries. The Centenary Rural Development Bank is the only commercial bank that has made a major effort to make individual loans to medium size farmers, with about 25 percent of its total portfolio in agricultural loans.

The Development Finance Corporation of Uganda (DFCU) makes loans and leases equipment to agriculture and agro-processing businesses. While some MFIs have initiated operations outside of the saturated urban markets in and around Kampala, their loan products are still short term loans with frequent regular payments. Most of the thousands of Savings and Credit Cooperatives (SACCOs), credit unions, Community-Based Organizations (CBOs), farmer groups and other member owned organizations that serve rural populations are small, weak and poorly managed.²¹ But even the proportion of persons that reported having savings in ROSCAs, ASCAs, and SACCOs was only 2 to 12 percent depending on the region of the country (Pelrine and Kabatalya, 2005).

There are limited examples of processing firms, traders, and input suppliers providing value chain finance. However, in certain crops, small scale farmers receive subsidized inputs directly through donor/government/NGO programs, as a means of mitigating the high cost and accessibility of formal credit. For example, cotton farmers receive free seeds and coffee farmers were previously supplied with free seedlings. There is a proliferation of donor and NGO programs providing free or subsidized input kits (especially in Northern Uganda) and for farmer demonstration purposes. The total value of these sources is estimated to greatly exceed the total value of formal agricultural production loans each year. Many of the input suppliers would collapse without this donor/NGO market.²²

¹⁹ Unless otherwise noted, the information included in this section was obtained from interviews or from Meyer et al. (2004).

²⁰ Two studies report on analyses of the data collected in the Uganda National Household Survey in 1999/2000 (Mpuga, 2005; Okurut, et al., 2000) something missing here? 4 tended to apply for and be successful in getting larger loans from financial institutions than were those engaged in agriculture.

²¹ Uganda Cooperative Alliance Limited is investing in establishing 592 model SACCOs to engage in financial activities in sub-counties where there are none currently (The New Vision, January 23, 2006). Eligibility requirements were reported as the potential to raise a minimum of 150 community members with the capacity to contribute membership fees of Ushs 5,000, buy one share of stock for at least Ushs 10,000, and have a savings account of at least Ushs 10,000.

²² Personal correspondence with Clive Drew, Managing Director USAID/Uganda APEP project.

Access to long term finance is especially difficult for farmers, traders, and processors who want to make large capital-intensive investments in vehicles, machinery and equipment. Problems concerning legal ownership and title to land prevent it from being used efficiently as collateral for long term loans.²³ Leasing offers a partial solution to the problem and the larger traders use the system of warehouse receipts to help reduce the collateral problem in borrowing from large banks to finance the bulking and storage of commodities.

²³ Annex three in Meyer et al., 2004 summarizes the key problems in using land as loan collateral.

VALUE CHAIN FINANCE ANALYSIS: SUGAR, MAIZE AND SUNFLOWER OIL

To better understand the relationship between governance and value chain finance, three value chains were analyzed. The analyses for the sugar, maize and sunflower oil value chains highlight the value chain governance structure, the availability of value chain finance, and the key features of the financial relationships between agents in each value chain. For each value chain finance relationship, the written or verbal financial contracts are described, and the ways in which the participants resolve the basic financial functions of client screening, monitoring and contract enforcement are examined.

VALUE CHAIN FINANCE ANALYSIS: SUGAR

OVERVIEW OF THE SUGAR INDUSTRY

Sugar is a domestic consumption crop in Uganda. Currently, domestic production is approximately 200,000 tons and imported volume is approximately 40,000 tons, so there room for further expansion of domestic production. Domestically produced sugar, with reduced transportation and tariff costs, enjoys a competitive advantage over regional imports, and is protected by a 100 percent tariff on sugar imports from outside of the East African Union.²⁴ In addition, the per capita consumption of sugar in Uganda is exceptionally low.²⁵ Domestic competitive advantage and the potential for increased demand in the domestic market indicate strong potential for growth in the Ugandan sugar industry.

Ugandan sugar is produced by 3 active sugar estates: Kinyara Sugar Works Ltd., Kakira Sugar Works Ltd. and Sugar Company of Uganda Ltd. (SCOUL). From 1976-1995, political instability, expulsion of Asians, government mismanagement, economic decline, and destruction of the infrastructure at the estates led to very low production.²⁶ In approximately 1987, it became a State priority to restore the industry by increasing production and privatizing the firms. As of February 2006, the Kakira estate is 100 percent privately owned (having been restored to its original owners), the Lugazi estate is 76 percent private and 24 percent government owned, and the Kinyara estate is 100 percent government owned but currently undergoing privatization.

²⁴ Uganda Sugarcane Technologists' Association Seventh Annual Report for Calendar Year 2004.

²⁵ Domestic consumption estimated at 9 kg per year, compared to a regional average of 14 kg and a world average of 23 kg per year. Uganda Sugarcane Technologists' Association Seventh Annual Report for Calendar Year 2004.

²⁶ On August 4, 1972, Idi Amin gave Uganda's 50,000 Asians (mainly of Indian origin) 90 days to leave the country. Among those expelled was the Madhvani family, owners of Kakira Sugar Works Ltd. The sugar estate was nationalized. It was restored to the Madhvani family in the mid-1980's under President Museveni. Although no direct compensation was provided for the destruction and deterioration of the property, the Government, the World Bank and other agencies, such as the African Development Bank, provided \$53 million loan needed for the rehabilitation of the sugar plant.

This report examines the value chains producing for the Kinyara and Kakira sugar companies.²⁷ Given the competitive advantage of domestic sugar producers and the opportunity for growth in market share and size, both Kinyara and Kakira are undergoing major expansions. Kinyara's expansion should increase its capacity from 65,000 to 93,000 tons per year, while Kakira plans to increase production from 100,000 to 140,000 tons per year. Their strategies for managing growth have had interesting impacts on the success of their value chain financing programs.

THE SUGAR VALUE CHAIN

The sugar value chain in Uganda is generally a directed value chain, with a lead firm that has significant buying power over its outgrowers, where there are few opportunities for side selling, and where contracts are used to control production and ensure supply. Kinyara and Kakira have chosen somewhat different business models for their outgrower operations, but they both operate on the sugar estate model. A sugar estate is a production unit consisting of a processing factory, a 'nucleus estate' (plantation) on which sugar cane is grown by wage employees, and an area surrounding the nucleus estate from which the sugar company purchases sugar cane grown by independent farmers.

Independent farmers who produce sugar cane for the factory on their own land may be formally contracted outgrowers, or simply independent farmers who offer their cane on a spot market basis to the sugar company. Formally contracted outgrowers often receive in-kind credit from the sugar company in the form of land preparation, seed cane, fertilizer, farm labor, harvesting, and transportation to the factory. In return, they are obligated to sell 100 percent of their cane production to the sugar estate and to allow the loan repayments to be deducted from the sale price.

Other than sale to the sugar estates, cane farmers in these value chains have limited options for selling their product. The bulk and weight of sugar cane make it cost-prohibitive to transport long distances. This eliminates most competition among the estates to buy farmers' cane, since they are geographically distant. There is limited side selling for personal consumption, but the type of cane preferred for chewing is different than the type of cane grown for sugar production.²⁸ Finally, in some areas jaggery mill operators compete for purchasing sugar cane. Jaggery is an unrefined form of sugar cane juice, which is used in Uganda for local alcohol production. Jaggery mills are small, oxen-powered, portable mills that can be brought directly onto a farmer's field to process his cane. Where jaggery mills are competitive on price, the value chain can move towards a market governance structure.

Kinyara and Kakira are both constrained by the amount of land available for the company to purchase or lease. Therefore, their aggressive expansions will rely upon increasing productivity on their own estates and increasing the number of farmers and acreage under production in their outgrower schemes. During the rehabilitation and expansion phases to date, the cane purchased from small scale outgrower farmers by these two companies increased by almost 100 percent, from 340,234 tons (2000) to 677,263 tons (2004). The firms are also under political pressure to support the Government of Uganda's Poverty Eradication Action Plan, which places a large emphasis on reducing poverty for

²⁷ Time/resource constraints prevented an examination of all three firms. These two firms were selected because they use similar production and financing models, but have had very different results.

²⁸ Side selling is a term for a producer selling his harvest to a buyer other than the buyer from whom he received credit, thereby defaulting on his loan.

smallholder farmers and rural populations. The outgrower schemes are seen as positive contributions to this national action plan.²⁹

In marketing, both firms demand advance payment for sales from the factory to sugar wholesalers. The product is primarily sold in 50kg bags. Sugar wholesalers distribute these bags to sugar retailers (small stores located throughout the country), who sell to individual customers in custom amounts packaged in plain plastic bags. At this level, there is little opportunity for product differentiation or branding. However, both firms have begun a pilot program of packaging 1kg branded bags for sale in supermarkets.

THE SUGAR PRODUCTION PROCESS

One planting of sugar cane can yield 4-6 harvests. The sugar cane crop cycle varies according to climate, but is generally 18-20 months for the first harvest and 16-18 months between each subsequent harvest (ratoon harvest). This long crop cycle demands an equally long loan term.

The stages of production include:

- Land preparation (clearing, ploughing, furrowing)
- Planting
- Weeding (4 times per crop cycle) and fertilizing
- Harvest (fields are first burned to eliminate leaves, etc., then cane is cut manually)
- Transportation to factory (cane must arrive at factory no later than 36 hours after it is burned to preserve minimum quality standards)
- Factory processing (sugar cane is squeezed to release juice, and the liquid is processed into sugar granules). Molasses and bagasse are by-products. Molasses is most often simply dumped, while bagasse is used as biomass for the factory boilers and for electricity generation.

As discussed below, outgrower farmers often obtain in kind credit from either the sugar estates or their outgrower associations for most stages of production: inputs, labor for harvesting, and transportation. Smaller farmers may use only family labor, but as farm plot size increases there is also an increased demand for credit to pay wage laborers.

Outgrower farmers are paid according to a national formula which was established during liberalization with the support of the World Bank in collaboration with the Government of Uganda and the owners of the sugar estates. The formula is:

$$(35\%) \times (\text{annual average price of sugar per ton}) \times (\text{annual average rendement})^{30}$$

General practice is to pay farmers upon delivery 90 percent of their ‘interim payment’ which is calculated on the basis of the previous year’s price and rendement. Loan payments are deducted at this time. At the end of the fiscal year, the sugar estate calculates the ‘total payment’ based on the current year’s price and rendement, and pays farmers the outstanding difference.

²⁹ 2004 revenues to the outgrowers were 21,126 million UGX (approximately \$11.6 million).

³⁰ Rendement is the percentage yield of sugar per ton of cane.

An examination of the two firms revealed that differences in outgrower management, contracting mechanisms, and local competition resulted in varying repayment rates to the estates offering value chain finance to smallholder farmers. The firms also made different strategic choices in their effort to balance the success of their credit programs and the achievement of production targets.

KINYARA SUGAR WORKS LTD.: SUCCESSFUL OUTGROWER CREDIT AND EXPANSION

Kinyara Sugar Works Ltd. (referred to below as Kinyara) is a 100 percent government owned sugar estate in the Masindi District in northwestern Uganda, which is in the process of being privatized. It is currently under management by the international management firm Booker Tate Inc.

Kinyara produces sugar cane on 14,000 hectares of land, with 7,200 ha on the nucleus estate, and 6,800 ha farmed by 900 contracted outgrowers. The average farmer has 3 ha of land total. The outgrowers for Kinyara are organized into a limited liability company, Kinyara Sugar Growers Ltd. (referred to below as KSGL). In an agreement between the outgrowers' company (KSGL) and Kinyara, shareholding in the company is mandatory for all outgrowers (minimum of 2 shares at \$50 each). Kinyara assists by deducting share payments from the farmers' payments at harvest time. KSGL has also formed a SACCO, capitalized with member shares. KSGL provides in kind and cash credit through the SACCO.

Kinyara is currently implementing an expansion plan detailed in the table below.

	Total number of outgrowers	Total tons of cane produced	Total tons of sugar produced	Percentage produced by outgrowers
Current production	900	669,561	57,137	32%
Expansion targets	1700	1,000,000	93,000	55%

Kinyara only purchases sugar cane from formally contracted outgrowers, and outgrowers agree to exclusively sell to Kinyara. There are no other sugar estates in the Masindi district, and there are very limited opportunities to sell cane for consumption (chewing) or for the production of local alcohol. The value chain has a directed governance structure, since Kinyara has an effective monopoly on purchase of sugar cane.

Value Chain Finance

Both Kinyara and KSGL (the outgrowers' company) provide in kind credit to farmers. This credit takes the form of supplier credit (for inputs) and production credit (for equipment, labor, transportation).

Kinyara provides:

- Equipment and services for land preparation
- Inputs: Seed cane and fertilizer
- Transportation of cane (Kinyara owned trucks)

KSGL provides:

- Equipment and labor for land preparation
- Labor for planting, weeding, and harvest

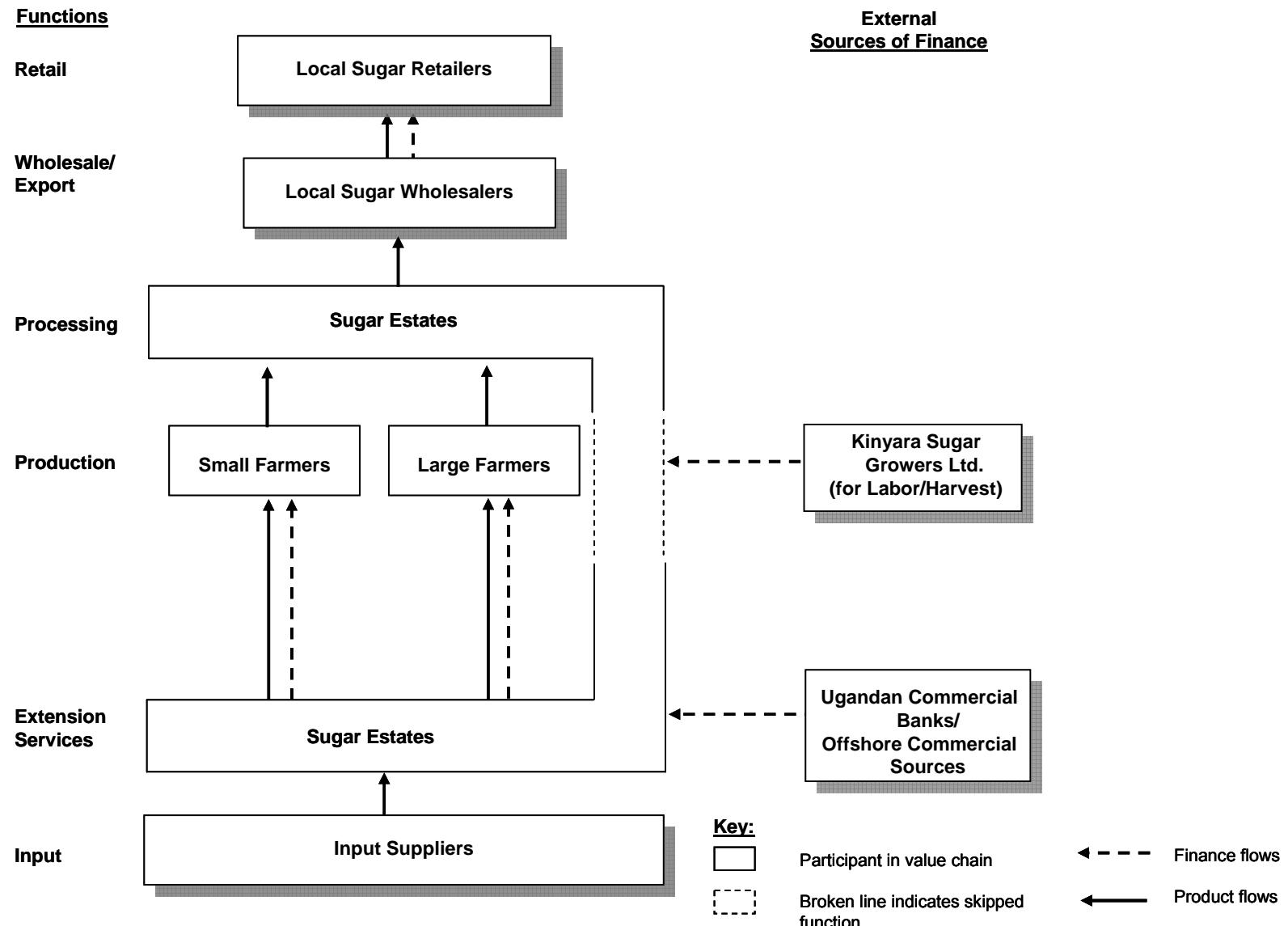
Kinyara will not provide any credit for labor for planting, weeding or harvesting. Kinyara would have to employ and manage hundreds of additional workers to provide these services, or they would have to provide cash credit. These options are too expensive and too risky for Kinyara. These services are organized only through KSGL. KSGL hopes to increasingly compete with Kinyara to provide land preparation, and other services in the future, at rates below those of Kinyara. KSGL's SACCO will provide emergency cash loans, and in kind credit for plowing land for food production.

Loans from Kinyara to the farmers are priced at prime plus 2 percent (in January 2006 Kinyara reported its rate to farmers was annual compound interest of 18 percent). As of February 2006, Kinyara had an outstanding loan portfolio of 3 billion UGX (\$1.7 million). Fertilizer is priced at 5-10 percent above Kinyara's cost, which is below local market rate for low volume purchases. Land preparation services and transportation are priced according to a publicly available annual schedule. Loans from KSGL to the farmers are priced at 1.6 percent per month, with a 2 percent up-front commission. Loans are due in full each year. Kinyara deducts loan payments for both its own loans and for KSGL's loans from the farmers' interim payment.

Interfirm cooperation between Kinyara and KSGL for organizing the various inputs of production (land preparation, seed and fertilizer distribution, labor for harvesting) and the credit transactions contributes to the success of the crop production and the availability of credit. Access to credit and successful production are a "two way street"—farmers rely on credit for production inputs, and Kinyara provides credit to ensure that farmers produce. KSGL has stepped in to meet farmer demands for credit and services that Kinyara chooses not to provide (emergency consumption loans, in-kind lending of labor for harvesting) but which are equally important to organizing successful production.

Kinyara has been very successful in both directly providing and facilitating value chain finance to farmers. The farmers have been successful in producing sugar cane at expected levels and quality with extremely high repayment rates (99.5 percent), and adherence to contracts for production and credit. Kinyara's business model, outgrower management procedures, and the lack of competition for sugar cane purchasing ensure that credit and production contracts are successful through effective client screening, monitoring and contract enforcement.

KINYARA SUGAR WORKS LTD.



Elements of Successful Value Chain Lending: Contracts, Screening, Monitoring, Enforcement

The Contract

A key part of Kinyara's business model is its commitment to purchase cane only from formally contracted outgrower farmers. Kinyara signs a formal written contract with each individual outgrower farmer. In addition, Kinyara has a business policy that acts as an "agreement" with the outgrower community that promises that the company will not purchase sugar cane from any non-contracted farmers. This implicit "contract" provides a sanction for the breaking of the formal written contract: if a farmer breaks his written contract and loses his status as an outgrower, he loses all possibility for future earnings from Kinyara. The lack of other selling opportunities for sugar cane, the lesser profitability of other cash crops, and the lack of other sources of credit for agricultural production increases the severity of the sanction.

At the same time, Kinyara is obligated to purchase all of the sugar cane grown by a contracted farmer, and to adhere to a harvesting schedule so that the farmer can predict when he will harvest and be paid. Kinyara also faces potential business threats from the farmers if it fails to uphold these obligations. Farmers have a lot of power, since they control a large percentage of the raw materials required for Kinyara's business. In the event that individual farmers fail to deliver their cane, or they organize collective action against Kinyara, Kinyara has only the cane from its nucleus estate to serve as 'buffer stock' to maintain factory operations. As Kinyara expands, the cane production capacity of the nucleus estate will fall from 69 percent of the factory's processing capacity to 45 percent of capacity. This will make it even more critical for Kinyara to offer contract terms acceptable to farmers and to abide by its contractual obligations.

The contract defines the cultivation and harvesting responsibilities of the farmer, the input supply and technical assistance responsibilities of the firm, the mutual obligation to complete the sale of 100% of sugar cane produced, and the payment calculation and terms including a harvest schedule. The contract also defines the terms of financing and repayment.

Client Screening

Kinyara has an extensive outgrower management program. It begins with the process of interviewing and educating farmers before contracting them as outgrowers. Kinyara determines its needs for farmers in a specific area. It notifies the outgrowers' company (KSGL) of its needs, and also announces to the local council its need to recruit farmers. Farmers are required to apply to the company, and to have their land inspected and approved for cultivation. The application includes information about:

- The quality of the farmer's land (including ownership, or lease terms)
- The farmer's plans to manage the cane plot (labor, tools)
- The farmer's agricultural qualifications
- Finance required and how the farmer will gain access to this finance

Following this approval, a meeting between Kinyara outgrower management and KSGL (who have long term personal knowledge of area residents) will review and approve all new outgrowers. Finally,

a signature of the local government (Local Council) leader is also required, which confirms the farmer's right to cultivate the plot, given the lack of land titling in Uganda.

Upon approval, the farmer is required to attend a one-day training course at the sugar estate. During this course, the outgrower management team presents the following curriculum:

- Know your contract (responsibilities of the farmer and the company, loans and interest rates, the payment formula)
- Sugar cane production
- Budgeting (what are the likely costs of production and what is the likely profit? what is the impact of varying yields on profitability?)
- Interim statement and managing finances (understanding the interim and final payments, deductions for loans, and need for savings)

The farmer is formally contracted as a Kinyara outgrower only after completion of this course, and confidence on the part of the outgrower management team that the farmer has understood and is capable of fulfilling the requirements of the partnership. In our conversations with farmers, we found a high level of understanding of the terms and conditions of the Cane Production Contract and the credit agreement.

Client Monitoring

Kinyara employs an extension staff responsible for monitoring outgrower performance. The outgrowers are divided into 3 zones of approximately 300 farmers. Each zone has a zone superintendent, 2 extension officers (responsible for knowing all farmers by name) and 4 assistant extension agents, for a total of 6 hands-on staff for every 300 farmers (ratio of 1 to 50). Routine inspections are carried out on each farmer's plot at 3, 5 and 7 months. Once the crop is more advanced, the extension agents reduce formal inspections. Since the company is required to do this level of monitoring in order to ensure the required volume and quality of production, the simultaneous 'monitoring' for ultimate repayment of the credit has no additional transaction costs. It also assists Kinyara in performing tonnage forecasts, a task that becomes more critical as outgrower supply represents a greater proportion of total cane processed.

Kinyara has a requirement that one-third of a farmer's land is reserved for cultivation of food crops. The extension staff monitors this production as well as the cane production. They offer information about intercropping food and cane, and other informal agricultural assistance not related to cane growing. These services help to ensure that farmers are not forced to harvest their cane early, or to consider side selling, due to hunger. It also maintains a positive corporate image for Kinyara, avoiding any perception that farmers' choices to grow sugar cane instead of food contribute to malnourishment.

Contract Enforcement

In the **Kinyara** business model, credit contracts are enforced through the direct deduction of payments from the harvest payment, through threat of sanctions for non-performance in a given crop cycle, and the threat of refusal to renew the contract in the future. The provision of all in-kind credit, including labor, reduces the risk that funds could be diverted for other uses. The lack of opportunities

to side-sell ensures that the entire crop (collateral) is delivered to Kinyara, the lender. The interfirm cooperation between Kinyara and KSGL ensures that all loans are repaid in full from the value of the crop. The explicit sanctions in the contract include a penalty of 5%-20% of crop value for unplanned burning, which farmers initiate in order to force an early harvest of their fields and receive early payment. Other sanctions include the right of Kinyara to take over management of the crop if the farmer is not cultivating properly, and rejection of the crop for poor quality. Ultimately, if a farmer does not abide by the contract, he becomes ineligible for future contracts. The value of this relationship with Kinyara and the profitability of the crop make this sanction a serious one for most area farmers. Kinyara continues to enjoy an exceptionally low default rate of 0.5%.

KAKIRA SUGAR WORKS LTD.: BROKEN CONTRACTS AND THE CHALLENGE OF SIDE SELLING

Kakira Sugar Works Ltd. (referred to below as Kakira) is a privately owned firm founded in the 1930s in Jinja, Uganda. Kakira is one of the Madhvani Group of Companies, a conglomerate of over 20 companies engaged in various industries in Uganda such as tea production, flower production, confectionaries, software, and communications. During Idi Amin's rule, Kakira's Asian owners were forced to abandon the sugar estate and it was nationalized. The owners returned in the mid-1980s and began the estate and factory rehabilitation.

Kakira has a nucleus estate of 9,700 hectares, with 6,500 estate employees, (including factory workers, cane growers, cane cutters and administration). In addition to its nucleus estate, Kakira works with 3,600 contracted outgrowers, who grow sugarcane on an additional 11,000 hectares of land. The average size of a Kakira outgrower's plot is 2.5 hectares in cane, while very few larger farmers may have up to 200 hectares in cane.

Kakira is currently implementing an expansion plan detailed in the table below.

	Total number of outgrowers	Total tons of cane produced	Total tons of sugar produced	Percentage produced by outgrowers
Current production	3,600	989,165	84,162	47%
Expansion targets	6,000	1,500,000	140,000	65%

With Kakira's assistance, outgrower farmers are in the process of organizing an NGO, the Kakira Outgrowers' Rural Development fund (KORD). KORD's primary objective is to develop financial linkages to meet the outgrowers' demands for financial services that are not met through the in-kind credit relationship with Kakira. The outgrowers interviewed in January 2006 said that while the in-kind credit scheme with Kakira meets their financial demands at planting and harvesting time, they often also need cash loans during weeding and crop maintenance seasons. KORD, Kakira and the outgrowers are exploring several options including the creation of a savings and credit cooperative (SACCO) and/or establishing linkages with microfinance institutions and/or banks. Microcredit is available in the area, notably from FINCA. However, farmers complained that the interest rates were too high. They believed that their own SACCO could provide more affordable rates, and that the profits would benefit themselves. In addition, the Government of Uganda had recently announced a large scale grant program for SACCOs.

Value Chain Finance

Kakira works with farmers in three ways. Some farmers register with Kakira and sign a contract to deliver cane, but do not choose to receive any finance. Other contracted farmers choose to receive financing from Kakira. The third category is farmers who do not register or make any commitment to deliver cane, but may still grow cane and sell it on the spot market to Kakira or other buyers.

Farmers who receive financing from Kakira receive in-kind credit for land preparation, seed cane, and fertilizer. Kakira also provides a cash advance payment for harvesting and transportation costs. KORD does not currently provide any credit.

Credit in January 2006 was priced at an annual compounding interest rate of 25%. Principal and interest are deducted from the interim payment when cane is delivered. Kakira has a multi-year repayment schedule:

- 40 percent of the initial balance is paid upon delivery of first harvest, 18 months after planting.
- 30 percent of the initial balance is paid upon delivery of second (ratoon) harvest, approximately 34 months after planting.
- Remaining 30 percent of the initial balance is paid upon delivery of third (ratoon) harvest, approximately 50 months after planting.

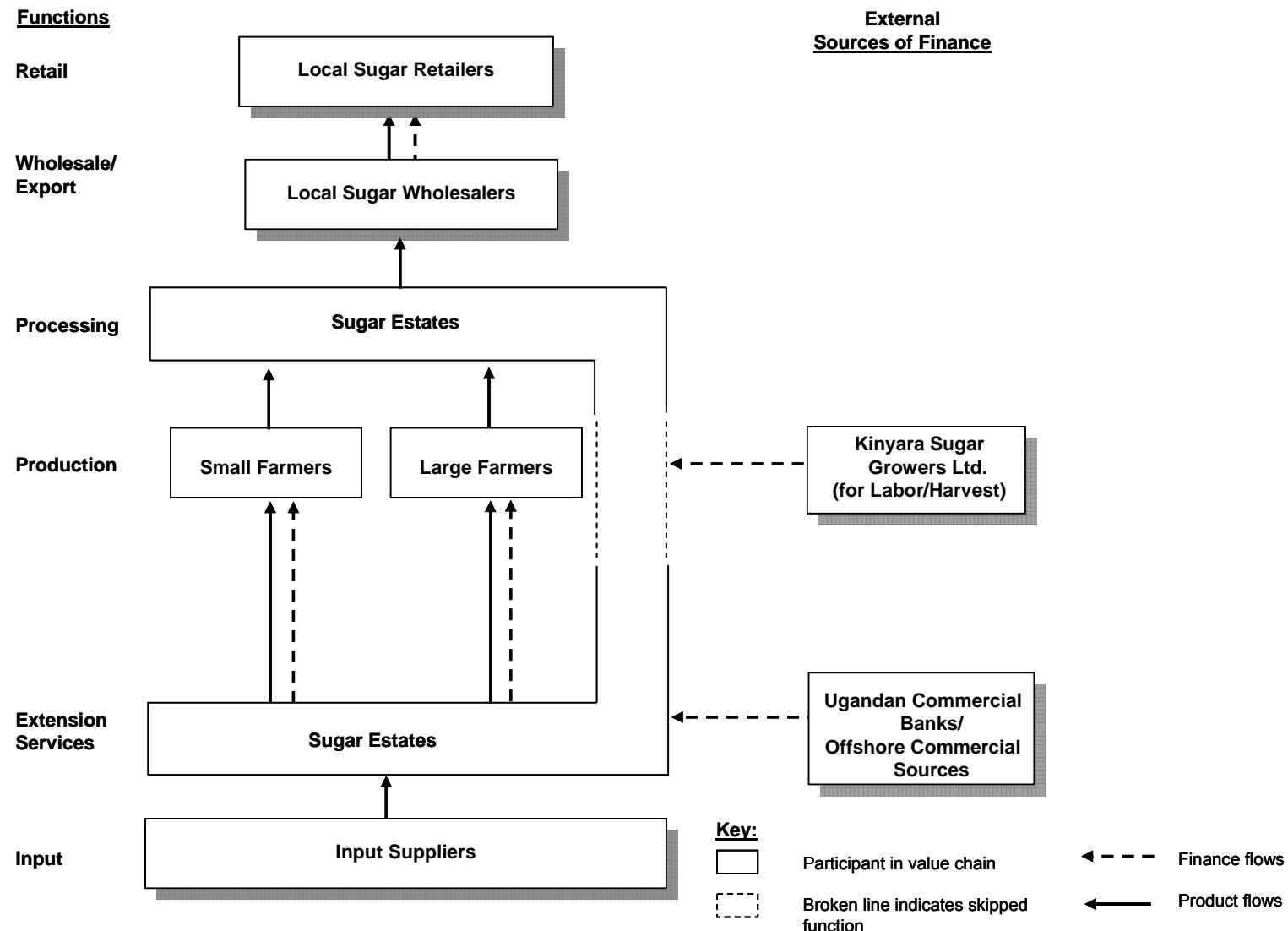
Amongst the contracted outgrowers, the majority have credit contracts with Kakira. From 1994-2004, the aided farmers default rate was extremely low (.01%), as they delivered the contracted amounts of sugarcane to Kakira regularly and their loans were deducted on schedule.

All of Kakira's outgrowers manage their own harvesting, loading and transport of cane to the factory. In the area surrounding Kakira, there are independent support services (wage laborers, traders, transporters) that the farmers engage directly to accomplish these tasks. When requested by the outgrower, Kakira will pay the truckers for their services upon delivery of sugarcane and deduct the cost from the outgrower's sale of the cane delivered. Because Kakira does not pay outgrowers in cash but instead pays via deposits into their bank accounts, there is a one week delay between delivery of sugarcane and payment.³¹

Interviews with farmers and representatives of KORD revealed that no financial institution lending was used for sugar cane production, due to the long loan term required. Farmer households may access MFI or SACCO loans, but no loan product was available that could directly finance sugar cane production.

³¹ Contracted farmers have accounts at Tropical Bank of Uganda. Farmer and KORD interviews report that despite lobbying efforts by KORD, and individual farmers, no lending has been available from Tropical Bank.

KINYARA SUGAR WORKS LTD.



Elements of Successful Value Chain Lending: Contracts, Screening, Monitoring, Enforcement

The Contract

All registered farmers sign a contract with Kakira. Kakira prefers to work with contracted outgrowers and normally buys only a small percentage of cane from unregistered farmers, when estate and outgrower production is insufficient. Kakira's contract states if the farmer does not deliver the cane, or defaults on the loan, that Kakira will not buy from the farmer in the future. However, the common knowledge that Kakira will buy from either registered or unregistered farmers reduces the perceived severity of that sanction.

The contract describes the farmer's commitment to cultivating cane on a specified area, and for repaying any credit advanced. If credit is provided, the contract also describes the firm's commitment to provide inputs and ploughing. The contract commits the firm to purchase all cane produced and to identify reliable transporters. The terms and conditions of each contract are described below, as well as the conditions for unregistered farmers.

Contracted Outgrower (does not receive credit)

- Farmer signs a written contract to plant at least 2.5 hectares of sugarcane and sell exclusively to Kakira at a guaranteed price based on the national cane price formula
- Kakira commits to purchasing all cane produced and to identify reliable transportation
- Farmer self-finances (through savings or family/friend borrowing) all aspects of land preparation, seed cane, materials, labor and transportation

Contracted Outgrower (receives credit)

- Farmer signs a written contract to plant at least 2.5 hectares of sugarcane and sell exclusively to Kakira at a guaranteed price based on the national cane price formula
- Kakira provides in-kind credit for land preparation, seed cane, and fertilizer
- Kakira provides a cash advance payment for harvesting and transportation costs
- Kakira has a multi-year repayment schedule:
 - 40 percent of the initial balance is paid upon delivery of first harvest, 18 months after planting
 - 30 percent of the initial balance is paid upon delivery of second (ratoon) harvest, approximately 34 months after planting
 - Remaining 30 percent of the initial balance is paid upon delivery of third (ratoon) harvest, approximately 50 months after planting
- Kakira commits to purchasing all cane produced and to identify reliable transportation

Non-Contracted Farmer

- Grows sugarcane independently and has no formal or informal contract with Kakira

- Sells on the spot market to a variety of buyers:
 - Kakira Sugar Works:
 - Lugazi Sugar Company of Uganda Limited (located approx 50 km from Kakira)
 - Jaggery mill operators
 - Vendors of sugar cane for consumption

Client Screening

Kakira also has a standard process for selecting contracted outgrowers, both aided and unaided. The unregistered farmers, however, do not go through any selection process, as they produce and harvest cane entirely independently and sell to Kakira on the spot market.

Before selecting an outgrower, a KSW extension worker visits the plot to inspect the land, to ensure the following criteria are met:

- within 25 km of the factory
- cannot be swampland
- must be free of trees and stumps
- must have at least 2.5 hectares available for sugarcane production.
- must be large enough for the farmer to maintain 1/3 of his property for subsistence farming (food for household consumption) while devoting 2.5 hectares to sugarcane production.

If all of these criteria are met, a farmer may sign a contract to participate in the Kakira outgrower scheme. Unlike at Kinyara, there are no additional pre-contract training or education sessions addressing either the production of sugar cane, the profitability of sugar cane, or the business relationship with the company. Neither is there involvement of the outgrowers association, or the local village council representatives. While Kakira's client selection process is less thorough, it also has lower costs.

Client Monitoring

Kakira also supplies an extension staff. Similar to Kinyara, outgrowers are divided into three zones. Each zone is assigned a Superintendent, 2 Supply/Production Supervisors, 1 Land Development Supervisor and nine Field Assistants, for a total of 9 hands-on staff for every 1200 farmers (ratio of 1 to 133). These extension workers train the outgrowers in sugarcane land preparation, planting, weeding and harvesting. They also communicate the harvesting schedule to the outgrowers, informing them when they should cut their cane and transport to the factory. Given the lower ratio of extension workers to farmers, Kakira's active monitoring of the farmers' production and ultimate loan repayment is less intensive than Kinyara's.

Contract Enforcement

Kakira does not have practices in place that enforce their contracts with the outgrowers. Outgrowers who engage in side-selling and do not deliver their contracted amount of cane to the factory are not penalized. Kakira purchases whatever amount of cane they deliver and will issue subsequent contracts.

The outgrowers are also aware that Kakira purchases cane from unregistered farmers. They understand that with or without the contract, they may be able to sell to Kakira. This creates a more balanced governance structure. The “two way street” of farmers relying on Kakira for finance and as a buyer, and Kakira’s reliance on the farmers to repay loans and provide product, creates interdependencies that must be respected for the success of both finance and production objectives.

Kakira’s Broken Contracts

In 2004, there was an overproduction of sugarcane in the Jinja area. This coincided with a period when a surge of illegal imports of sugar flooded the Uganda market. In this year, the outgrowers and unregistered farmers grew more sugarcane than the factory could process, and as illegal imports undercut domestic sales, the Ugandan firms had high levels of inventory and their demand for raw materials dropped. Since supply outstripped demand, spot market prices dropped while the contracted outgrowers retained their right to a guaranteed price. Kakira made a strategic decision to purchase cane on the spot market in order to take advantage of low prices, and to slow down its overall rate of purchasing. As a consequence, they delayed scheduling the harvest of many contracted outgrowers’ fields. While the normal crop cycle for sugarcane at Kakira is 18 months, in 2004 some outgrowers’ harvests were delayed for 6–12 months. This created a major cash flow crisis for many individual farmers. It also was a violation of Kakira’s contract with its outgrowers.

In 2005, a decrease in the level of regional conflict led to the opening of the borders with Sudan and Congo and a subsequent spike in demand and price for local alcohol. The local jaggery mill demand for sugar cane surged, and they aggressively pursued cane farmers, offering good prices, immediate harvest (since the portable mills are brought directly onto the farmers’ fields) and immediate payment. Side-selling of sugarcane skyrocketed and the default rate among aided farmers sharply increased to 25 percent. Kakira estimates that it lost 150,000 tons of sugarcane (15 percent of expected production) to the jaggery market in 2005.

Our interviews with Kakira extension workers, outgrower credit managers, and farmers revealed that the 25 percent default rate among aided farmers in 2005 was a reaction to Kakira’s breaking of the outgrowers’ contract by delaying the harvest and purchase of cane in 2004. All actors reported that the price offered by the jaggery mill operators was similar to Kakira’s price for cane. Price, though a factor, was less important than the security of having the field harvested and receiving payment immediately. Farmers’ cash flow needs were paramount, particularly in a long production cycle crop like sugarcane.

LESSONS FROM THE CANE FIELDS

We found that differences between Kinyara and Kakira in their governance structures, their outgrower management, and the level of local competition resulted in different repayment rates when the estates offered value chain finance to smallholder farmers.

Kinyara is a purely directed value chain, in which it only purchases from contracted farmers, maintains very thorough client screening and monitoring, and is quite rigid in both abiding by its contracts and in enforcing its contracts. There is virtually no opportunity for side selling. Kinyara has continued to experience very high repayment rates and satisfied all of its production targets, even during an aggressive expansion phase. This business model has supported a 43 percent increase in production capacity and the addition of 800 new outgrowers at an acceptable cost.

Kakira is a blend of a directed value chain (for its contracted outgrowers) and a market value chain (for non-contracted farmers). The sugar value chain as a whole, including the jaggery mills, tends towards a market governance structure for all farmers. Kakira engages in less thorough client screening and monitoring, and limited contract enforcement. They have made strategic choices to fulfill their increased needs for cane during the expansion by regularly buying from non-contracted farmers and continuing to buy from contracted farmers who have broken their contracts. In 2004-2005, Kakira also made a choice to take advantage of low spot market prices and to purchase from non-contract farmers while delaying the harvests of the contracted farmers. These choices have resulted in high default rates during 2005. However, they have also fulfilled Kakira's need for increased delivery of sugar cane. This strategy is allowing Kakira to ramp up production by 40 percent while also adding 2400 outgrower farmers at a cost they deem acceptable.

These two examples demonstrate that repayment rates are only one factor that value chain actors consider when evaluating the role that value chain finance can play in increasing their competitiveness. Expansion plans drove Kinyara and Kakira to obtain an increased supply of sugar cane in addition to getting reimbursed for their loans. Kinyara needed to add 800 outgrowers, while Kakira needed to add 2400 new farmers. Recruiting local farmers as outgrowers required the sugar firms to offer expanded amounts of credit.

While the ability to screen and monitor clients and to enforce contracts is necessary to ensure high repayment rates, the transaction costs of completing these tasks thoroughly may not be the optimal use of capital. Increasing production may require a value chain lender to accept higher default rates in pursuit of these other strategic goals.

Since proprietary profitability information is not available for the two companies, it is not possible to compare the results of these two strategies on profits or competitiveness. Since Kinyara is state owned, and Kakira is private (and is a bidder for the privatization of Kinyara), there may be very different drivers for corporate behavior. It will be interesting to see the results as each firm attempts to increase market share and profitability in the expanding domestic market.

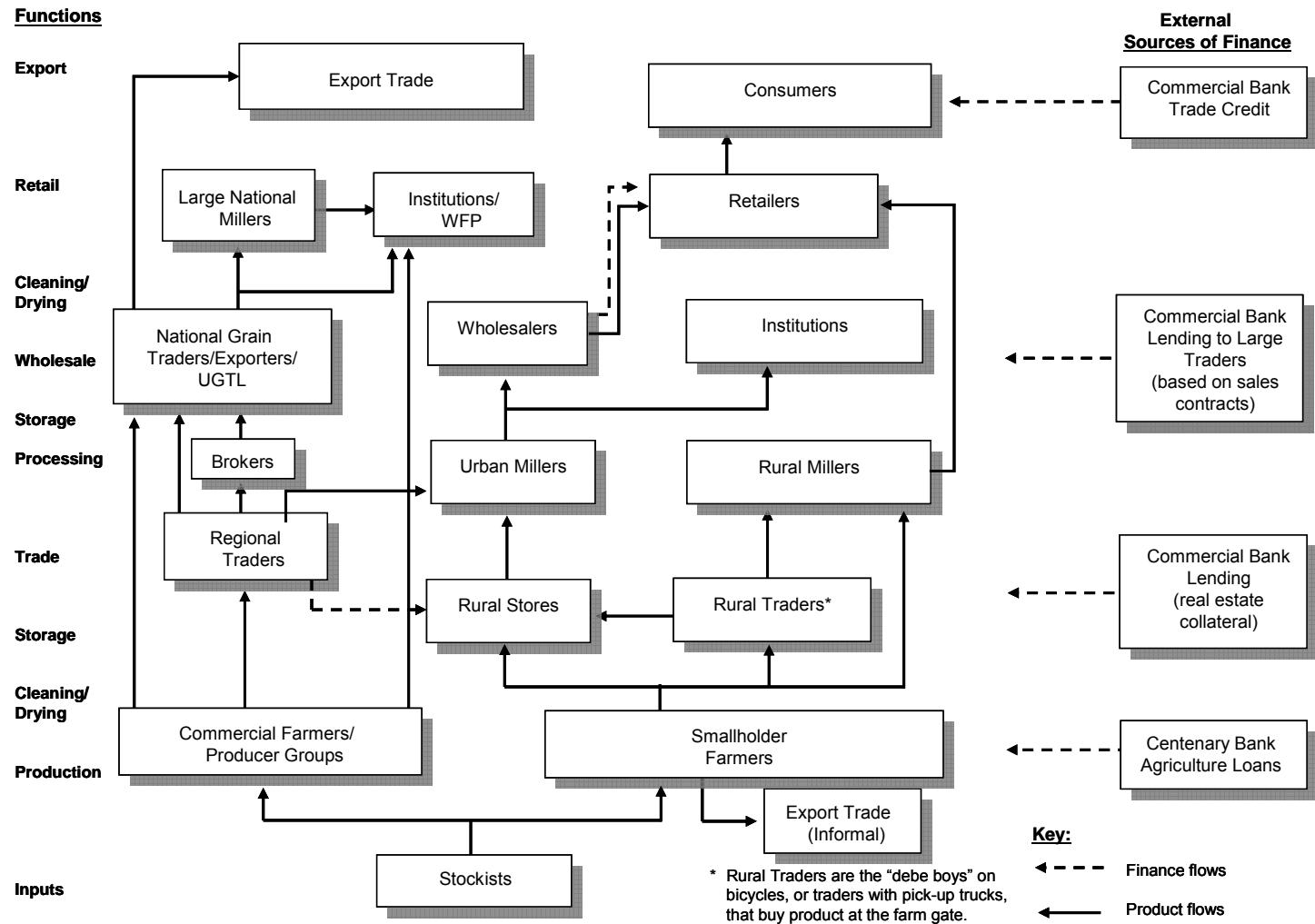
VALUE CHAIN FINANCE ANALYSIS: MAIZE

OVERVIEW OF THE MAIZE INDUSTRY

Maize is one of the most important crops in the country. It is grown in virtually all regions, and in some areas with favorable climates, it can be double cropped. It is estimated to provide income to 2.5-3.0 million farm households, close to 1,000 traders/agents, over 600 millers, and over 20 exporters (Independent Consulting Group, 2003a). An estimated 400-500 thousand hectares are cultivated per year, yielding 500-800 thousand metric tones. Maize is not the main food staple, as it is in neighboring countries, although “posho” (ground corn boiled to a stiff starch) is regularly eaten and widely used in relief and institutional feeding programs. For farmers, therefore, maize is produced both for income generation and food security.

About 25 percent of the annual harvest is retained on-farm for consumption and seed, 10 percent is estimated as post-harvest loss, 50 percent is consumed domestically and 15 percent is exported. The

MAIZE VALUE CHAIN



main market is Kampala, accounting for 50 percent of the formal trade.³² 16 of the largest Kampala traders are organized into Uganda Grain Traders, Ltd. (UGTL). These firms focus on export sales, sales to institutions, and increasingly, sales to the World Food Program. Alternatively, the main buying center for domestic household consumption is the Kisenyi market, which is dominated by the Kisenyi Millers Association, a group of 88 posho millers in Kampala. A significant amount of exports occur as informal undocumented trade across the border into Kenya, a net importing country in the region.

THE MAIZE VALUE CHAIN AND PRODUCTION PROCESS

The governance structure of the maize value chain is market based. Many buyers and many sellers at each step in the production and marketing process conduct transactions on a spot market. There is very little contracting or repeat transactions that could form the basis for contracting. Only in the transactions between regional traders and rural store owners, both of whom are constrained geographically in their access to supply, is there evidence of repeat transactions and value chain finance. These specific relationships reflect a balanced governance structure, in which mutual dependencies for attaining value chain objectives provide incentives for both parties to fulfill informal contracts for product and finance. A description of the actors at each step in the value chain follows.

Farmers

Small scale farmers that cultivate less than two acres of maize represent 90-95 percent of the total maize farmers, and are estimated to produce some 80 percent of the total output. Their production inputs are largely labor and home saved seed. Only 5-15 percent purchase improved seed and less than 2 percent are estimated to use fertilizers and pesticides. They use traditional rudimentary shelling, drying and storage techniques and usually sell their small surpluses for cash to rural stores, or rural traders and agents. As noted above, they are sometimes organized into associations.

Commercial medium and larger scale farmers represent the remaining 5-10 percent and produce about 20 percent of total production. They are more likely to use improved seed, fertilizer, herbicides, pesticides and ox plows or tractors for tillage resulting in higher yields. They are also more likely to use mechanical shellers and improved methods of storage, and to sell larger amounts directly to urban traders or their agents (Independent Consulting Group, 2003a and 2003b).

Rural Traders and Rural Stores

Rural traders operate in villages and are the major market outlet for subsistence farmers. Transactions with farmers are conducted on a spot market basis, with immediate cash payment. Rural traders are self-financed. They often act as agents for urban traders and millers during peak harvest periods. Rural traders are the first step in maize bulking, traveling on bicycles (“debe boys”) or small trucks to procure maize for cash at the farm gate for sale to rural stores.

Rural store owners generally have a simple one room storage facility and service 30-50 nearby farmers, who either deliver the maize directly or sell to the rural traders who deliver in turn to the rural stores. Rural stores bulk maize and sell to regional traders or directly to posho millers (local or in Kampala). Regional traders often provide short term cash advances to store owners so that they can

³² “Transaction Cost Analysis: Final Report,” May 2002, Jonathan Coulter for NRI.

offer immediate cash payments to farmers and rural traders. Rural store owners rely on regional traders as a marketing outlet—they do not have the resources to transport significant quantities of maize to national markets.

Regional Traders

Larger scale regional traders are located in urban trading centers and buy maize from 10-30 rural stores. Regional traders rely on rural store owners to bulk adequate quantities of maize for transport to Kampala—they cannot support the transaction costs of purchasing small quantities from multiple small farmers. They assemble stocks in regional storage facilities until there is enough to justify sending a larger truck to Kampala or to border points. They clean, assemble, fumigate, rebag and bulk maize, and act as sources of market information regarding prices and volumes in their areas of operations. Regional traders are self-financed, and are a source of finance to rural store owners.

National Traders and Brokers

Kampala based national traders buy maize on a spot market basis from regional traders or Kampala brokers (see below). These transactions require immediate payment. Kampala traders send agents out to regional trading centers to purchase on site. They also buy maize that has been transported to Kampala for sale by traders or farmer associations.

A cartel of grain brokers is reported to control much of the maize trade into Kampala. At entry points to Kampala, the brokers compete to buy the maize and then have the driver deliver it to the appropriate trader. The grain traders pay the brokers, who pays the farmers' agents (the truck driver, or other) the agreed price. Networks of relationships between rural and urban areas, and the widespread availability of cell phones, enable these transactions.

Uganda Grain Traders Ltd. (UGTL) is a limited liability company formed in 2001 by 16 national grain trading companies with the objective of coordinating the sourcing, drying, cleaning and grading of maize for sale in the domestic and export markets. The impetus was a contract to acquire and export 30,000 metric tons to Zambia in 2001, but UGTL was unable to completely fulfill that contract. UGTL rents and operates a 30,000 metric ton warehouse in Kampala.

The national traders, either individually or as UGTL, bid for short term contracts for large maize orders from institutions (schools, prisons), the World Food Program, Uganda Breweries, or buyers in other countries. These contracts have been used as evidence of creditworthiness to help the traders qualify for short term bank financing for bulking volumes. The commercial banks disperse these loans in tranches as maize is delivered to the warehouse. The banks take the stored maize and other immovable assets as collateral.

Processors and Millers

Grain milling is the most widespread power driven small scale industry in the country and maize mills account for more than 70 percent of all grain milling. “Posho millers”, particularly in the Kisenyi Market in Kampala, dominate the milling for the domestic household consumption market. They are also the dominant millers in secondary cities throughout Uganda. Large volume milling is dominated by the large Kampala traders that are vertically integrated.

Posho millers use electric or diesel powered hammer mills to grind maize for household consumption. They make frequent purchases of small (3 to 10 bags) quantities from rural stores. The value chain

segment including the rural stores, posho millers, and flour wholesalers or retailers represents the vast majority of maize flour sold for household consumption. Posho millers purchase maize through familial/village based direct relationships with farmers or rural store owners, without any middlemen. The prices paid by the posho millers, therefore, are much lower than those paid by Kampala traders. Posho millers dominate this segment of the domestic market while the large Kampala traders and millers target other markets.

The large Kampala millers sell to institutions (hospitals, schools, prisons), supermarkets, the World Food Program, or the regional export trade. They are frequently part of a Kampala trading company, or rely on them for maize procurement. Their business is based on advance contracts—they generally do not produce flour to market independently.

The World Food Program (WFP)

The WFP has become a major purchaser of maize grain and flour. Food aid is required for refugees from conflicts in surrounding countries and for internally displaced persons in Uganda. The WFP began procuring in Uganda in 1991 and, between 2000-2005, annual procurement increased from 28,000 to 142,000 tons. In 2005, 70 percent of all WFP purchased food was distributed in Uganda, with the remaining 30 percent being used in Rwanda, Burundi, Tanzania and the Democratic Republic of Congo.³³

Most WFP procurement has been from medium and large agricultural trading and processing companies. Since 2000, purchases have been made from 33 medium/large firms, of which about 15 are regular suppliers. WFP suppliers are in a privileged position because they can use their procurement contracts to help secure bank financing used to accumulate maize to fulfill their contracts. However, this privilege is limited to the large suppliers. The year-to-year variability of WFP local procurement contributes to price volatility, which is another important factor that impedes development and investment in the value chain.³⁴

Value Chain Finance

Despite the importance of the crop, there is relatively little formal or informal finance provided anywhere in the maize value chain. This is due to the market governance structure and price volatility which constrain value chain actors from entering into advance contracts. At the base of the value chain, productivity is low, few improved inputs (fertilizer or improved seed) are used and, when used, are purchased at market prices. Therefore there is no demand for input credit. The next step in the chain, purchasing from farmers by traders, is exclusively market based. No examples of contract farming were found in the maize value chain. Some very short term contracts are used between regional traders and rural stores, although at the next step of trade from regional traders to Kampala traders, there is no contracting. The final step in the large volume segment of the value chain, the

³³ All WFP statistics from information provided by the WFP Uganda, particularly a slide show giving an overview of the local procurement program.

³⁴ Since 2000, the WFP began to procure directly from farmers' associations. WFP's goal is to contract with farmers' associations for 20 percent of all procurement. Unfortunately, farmer associations and even private traders have confronted problems in acquiring sufficient maize to fulfill their WFP contracts, particularly due to the requirement to await payment on contract fulfillment rather than offering immediate cash payment to individual farmers.

sales to WFP or export markets, is the sole place where buyers and sellers regularly enter into contracts at established prices. These contracts enable access to finance from financial institutions.

The only example of direct value chain finance occurs between regional traders and rural stores, which is also one of the few relationships that allows for forward contracting. Regional traders make short term informal advances to their agents (rural stores) to help them accumulate inventory. These advances are based on a fixed purchase price for a given quantity of maize. The advances allow the rural store owners to meet farmers' needs for immediate cash payment, and provide the store owners with necessary capital to purchase large quantities of maize.

The advance payments represent a significant source of liquidity for rural store operators who lack access to other sources of capital. Although store owners generally have a financing arrangement with only one regional trader, at any time the store operators can sell maize stocks to any regional trader other than the one who advanced the funds. Throughout the marketing period, therefore, the operators can finance their turnover by using the funds to repeatedly buy and sell maize hoping to make a profit with each transaction. If the funds are advanced for a long enough period in an area with an active and competitive maize market, and especially during periods of rising maize prices, the operators can turn over their store inventory several times. The only requirement is that the trader who advanced the funds must be satisfied by receiving the contracted amount of maize within the specified time period.

Elements of Successful Value Chain Lending: Contracts, Screening, Monitoring, Enforcement

The Contract

Value chain finance provided by regional traders and rural stores does not involve the use of written contracts. Consistent aspects of verbal contracts between rural store owners and regional traders include: short turn-around between receiving advances and delivery of product; agreement for purchase of a specific quantity of maize; no explicit discussion of interest; no specific quality requirements.

Client Screening

Regional traders have the ability to choose from a large number of rural store owners within a circumference of the urban trading center. The traders either have existing relationships with the rural store owners from their home villages or develop these relationships over time. These relationships begin with small transactions, and the amount of money involved is expanded through repeat transactions with rural store operators that prove trustworthy.

Client Monitoring

Client monitoring is accomplished by repeat, short term transactions during the marketing season. Store operators gain the trust of traders with each successful transaction. The length of the loan is short (2 days to 2 weeks) which makes it easier to monitor. Regional traders are not required to monitor whether the store owner buys from any specific farmer or buys any specific amount on a given day, and the rural store owners have a large number of farmers to buy from within a given circumference of their stores. As long as the required quantity is bulked, the trader will be satisfied. Finally, the fact that rural store owners are tied to their store provides an additional avenue for monitoring. Family and community networks, and personal visits are used to monitor the store

owner's operations. As opposed to mobile traders, the fixed location of the stores increases the traders' ability to monitor their borrowers.

Contract Enforcement

The primary method of contract enforcement is the threat of refusing repeat transactions, and the threat of damage to the rural store owner's reputation which will prevent other traders from providing advances. Rural store owners' cannot bear the transaction costs of marketing their product. In addition, the rural store owners simply cannot accumulate adequate inventory and rent storage space without access to the trader's capital. Therefore, the sanction of loss of future transactions is sufficient to ensure contract enforcement.

LESSONS FROM THE MAIZE FIELDS

Value chain actors operating in a market based governance structure cannot fulfill the basic functions of client screening, monitoring, and contract enforcement necessary for successful lending or for successful production contracting. Spot market transactions predominate in the maize value chain.

The only significant amount of financing that occurs within the value chain is the provision of cash advances from regional traders to rural store operators. Due to the limited number of actors and the geographic constraints on their areas of supply, the specific relationship between rural store owners and regional traders is a balanced governance structure. They are interdependent and equally committed to maintaining long term relationships. The regional traders have the ability to screen and monitor the rural store owners, and offer a credible and important sanction for non-payment.

Repayment rates are only one factor that regional traders consider when evaluating the role that value chain finance can play in increasing their competitiveness. Regional traders rely on rural stores to accumulate large volumes of maize because the transaction costs of purchasing directly from farmers are too high. Regional traders incorporate the costs and inherent risks of advancing capital as part of the cost of acquiring sufficient inventory.

In addition to the high transaction costs of making many small, dispersed purchases, regional traders are unwilling to finance farmers because it is more difficult to screen and monitor farmers, and to enforce production contracts. Some of the primary reasons are:

- the amount of maize produced by individual farmers beyond their subsistence requirements is relatively small and highly variable.
- maize prices are volatile, making pre-season estimates of repayment capacity uncertain
- there is the risk that the farmers' harvests may fail and they will lack cash to buy maize from their neighbors to fill their contracts, and the neighboring farmers' maize crop might simultaneously fail for the same reason.
- the farmers may simply choose to default and sell to competing traders

In all other steps of the value chain, the market based governance structure constrains value chain actors from entering into formal or informal contracts or supplying finance. Other impediments include:

- limited warehouse capacity, which constrains advance purchasing and bulking. Limited ability to store maize (outside of Kampala), constrains buyers' interest in forward contracting with farmers or in providing any in-kind credit to buy improved seeds and inputs for future harvests.
- lack of a formal financial tool, such as warehouse receipts, through which farmers or traders can borrow against existing stocks. Because small poor farmers and traders dominate the market, their urgent needs for cash at the time of sale creates a high probability of side selling, which constrains the provision of informal finance within the value chain. A tool that facilitated access to immediate cash would enable farmers to get cash when they needed it, and fulfill contracts.³⁵
- small local traders have little capital that can be tied up for longer time periods for production contracts. Whereas rural stores and regional traders make short term advances to local traders to acquire maize during the marketing season, they recognize the cost and risks of contracting with farmers so are less likely to supply local traders with longer term funds for use in contracting farm production.

NEWS FROM THE MAIZE FIELDS

Although most trading in the maize value chain occurs in cash spot markets, contracts have begun to emerge especially with the increasing importance of the WFP and farmers' associations. With the liberalization of the agricultural economy and the closure of the National Cereals and Produce Marketing Board (NCPMB), farmer groups and associations are being formed to improve production and marketing. Donor projects and government agencies are providing extension services to these groups for improved technology and yields. Farmers groups and associations also facilitate the bulking of small scale production in order to reduce the number of agents in the chain, negotiate larger volume transactions and generate more profits for farmers. These groups are attempting to develop contractual relations with buyers to increase their negotiating power and improve prices. The conditions that enable contracting also shift governance structures away from market relationships and towards balanced or directed governance. This may enable increased availability of value chain finance.

In addition, in 2006 the WFP committed to purchasing according to the new East Africa Standards by signing contracts for Grade 1, accepting but discounting Grade 2, and rejecting any product below Grade 2. This policy is expected to contribute to strengthening the concept of quality standards throughout the value chain and price differentials according to quality. These changes may also alter the governance structure of the maize value chain and lead to increased availability of value chain finance in the future. Differentiated quality standards create opportunities to upgrade—farmers able to meet standards can command a premium price. Specialized production that meets quality standards will be more limited, and will encourage contracting by buyers wishing to ensure adequate supply. Exclusive contracting relationships create a balanced or directed governance structure, which can enable increased levels of value chain finance.

³⁵ Banks have been lending against warehouse receipts for very large traders, but new legislation is intended to improve the legal framework, reduce the risk, and create a formal financial tool that will encourage wider use of this mechanism. The Ugandan parliament recently passed a warehouse receipts bill that should improve this situation.

VALUE CHAIN FINANCE ANALYSIS: SUNFLOWER OIL

OVERVIEW OF THE SUNFLOWER OIL INDUSTRY

Prior to 1996, there was no commercial production of sunflower in Uganda. Sunflower production was initiated by donor interventions following the collapse of the cotton industry, when reduced cotton seed supply left the oilseed processing industry with large excess capacity. In 2004, approximately 50,000 metric tons of sunflower seed were produced. Sunflower is tolerant of dry conditions so its production is largely found in the central and northern regions.

Competing products include large amounts of palm oil imported from S.E. Asia and soybean oil imported under PL 480. Imported oils are processed into cooking oil and other products by the largest manufacturing company in the country, Mukwano Industries, an Asian owned company. Mukwano is also the largest processor of domestically produced sunflower oil as an import substitute. Domestic production satisfies only 35 to 40 percent of domestic demand, with the balance met by imports.

THE SUNFLOWER VALUE CHAIN AND PRODUCTION PROCESS

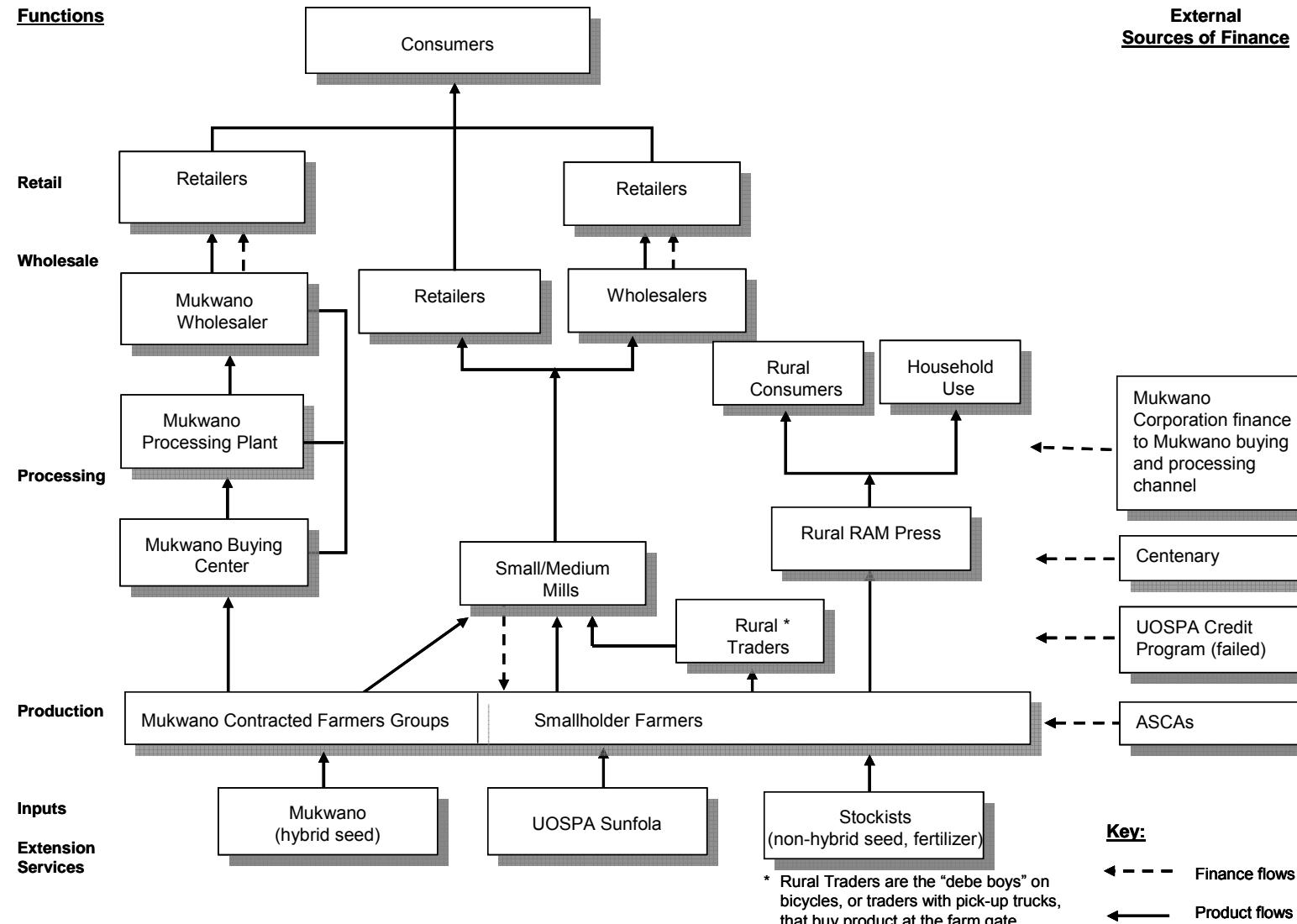
There are two main channels in the sunflower oil value chain. The first comprises an estimated 27,000 small scale farmers, independently producing local variety sunflower seed and marketing to local millers for processing. This channel has a market based governance structure, with most transactions occurring on the spot market and few examples of contracting or value chain finance.

The independent farmers primarily grow the local variety Sunfola. In the late 1980s, USAID supported the development of this variety under the Manpower for Agricultural Development (MFAD) project. It performed well initially but has deteriorated over time through intermixing with local varieties. Sunfola has a fairly low oil content of 30 percent. Sunfola is still promoted by the Uganda Oil Seed Producers and Processors Association (UOSPA) and on average yields between 625 to 750 kg per hectare.

The second channel is an outgrower scheme comprised of 7,500 farmers under contract to Mukwano Industries, a large Ugandan conglomerate. This channel has a directed governance structure, with Mukwano Industries as the only provider of inputs and buyer of farmers' production. However, the existence of the independent channel for sunflower oil production provides ample opportunities for side selling. This reduces the amount of power that the lead firm can maintain in the value chain.

Mukwano built a large warehouse in Lira two years ago as part of its program to stimulate small farmer sunflower production using the imported hybrid seed variety PAN 7351. Mukwano plans to construct a 300 ton capacity oil mill. Mukwano's stated goal is to offer farmers good seed, a secure market, and predictable prices, and to have 100,000 farmers producing 300,000 tons of seed in Lira, Apac and Masindi. PAN 7351 produces twice as much seed as Sunfola, yielding about 1500 kg per hectare without fertilizer, and up to 2500 kg when DAP fertilizer and herbicides are used. PAN 7351 has an oil content of 47 percent and therefore commands a higher market price. PANNAR, the South African firm that supplies PAN 7351, has been able to supply only a fraction of the total amount of hybrid seed requested by Mukwano, and has not authorized Mukwano to engage in local seed multiplication.

SUNFLOWER VALUE CHAIN



Sunflower is a seasonal crop so land preparation and access to seeds and other inputs are important production issues for farmers. Sunflowers mature in 95-100 days so farmers can produce two crops per year. Farmers plant from one to three hectares in sunflower. While hybrid seeds improve yields, the seed must be purchased each season rather than saved from the previous harvest. Products for home consumption are produced from both crops, but sunflower production is primarily a source of cash income for farmers. By-products are increasingly important as livestock and poultry feed. Each subsistence farmer produces a relatively small amount, yet it is bulky so access to markets and transportation play important roles in farmers' decisions. Approximately 100 large scale farmers (over 50 hectares) are beginning to produce larger quantities with improved technology.

ACTORS IN THE SUNFLOWER VALUE CHAIN: INDEPENDENT CHANNEL

Input Supply and Extension Services

The primary input supplier to the independent channel is the Uganda Oilseeds Producers and Processors Association (UOSPA). This national association was formed in 1995, and currently has 950 farmer groups with 27,000 members throughout the oilseed producing regions of Uganda.³⁶ Both farmers and millers are members and its main function is to increase oilseed production. Farmers are trained in agronomic practices, bulk marketing, post harvest handling, and nutrition. Millers are offered training and technical assistance with machine maintenance. Joint workshops are held to help mediate decisions about prices to be paid for sunflower. UOSPA also supplies data about the industry and engages in seed multiplication and sales to help cover costs. In 2005 UOSPA sold 100 tons of sunflower planting seed, operating through farmer groups or stockists. Only 10 to 15 percent of farmers use fertilizer, purchased from local stockists for cash.

Farmers

More than 30,000 small farmers produce sunflower oil throughout the central and northern regions of Uganda. Farmers typically self-finance their production costs or augment their own resources with informal borrowing from village sources or from Accumulating Savings and Credit Associations (ASCAs). This borrowing is not tailored to the seasonal needs of sunflower farmers, and repayment must be made from other sources of income during the growing season. A few larger farmers who live closest to Lira started borrowing from Centenary in 2004.³⁷

Similar to maize, there are multiple levels of aggregators between the farm gate and the processor. Independent farmers either sell to these aggregators, or transport their own production to local millers for sale. Most farmers sell the whole seed to the aggregator or miller, who then processes the oil and sells the oil to traders. However, larger farmers may pay a fee for processing and trade the resulting oil themselves.

Rural Traders

Similar to the maize value chain, rural traders operate in villages and are a major market outlet for sunflower seed farmers. There may be one or two levels of traders between the farmer and the miller.

³⁶ UOSPA was developed under the CAAS (Cooperative Agriculture and Agribusiness Support) project run by ACDI/VOCA, which provided 90 percent of its budget. This support is declining and the organization is currently attempting to develop a sustainability strategy.

³⁷ Centenary Rural Development Bank is a licensed microfinance provider.

Traveling on bicycle or small trucks, rural traders buy sunflower seed on a spot market basis, with immediate cash payment. They often have informal supply contracts with millers, which may include small working capital advances to assemble stocks. Since the sunflower oil industry is regionally based, with millers concentrated in the towns of Lira, Apec and Masindi, there are no national level traders.

Sunflower Processing—Independent Millers

Many small and medium size motor driven mills press seeds into oil for local and regional markets. UOSPA estimates there are 60 of these mills throughout the oilseed producing areas of the country. In Lira alone, one of the largest sunflower production areas, there are 25 press operators. The smaller presses can press three tons per day, while the largest have multiple presses which each process 15 tons per day. The oil is filtered and packed in 20 liter jerry cans for sale to wholesalers and retailers. Occasionally the presses operate on a fee basis, in which the farmer pays cash for the service and sells the oil himself. Oil cake is sold by press operators for livestock feed, some of which is exported to Kenya. In addition to these commercial production mills, small hand powered ram presses have been introduced in rural areas over the past 20 years to produce oil for local consumption, but the total volume pressed in this way is very small.

Some sunflower seed millers borrow working capital from Centenary and other local banks to procure oilseeds. However, their growth is limited by the lack of longer term capital to invest in developing larger storage capacity to bulk sunflower seed or to warehouse large amounts of pressed oil. Millers often have informal contracts with rural traders from whom they procure sunflowers at harvest time, and with these contracts the millers may provide some small working capital advances to assemble stocks. Millers do not lend directly to farmers, however. Since farmers can sell product on the spot market for cash, the threat of side selling makes lending too risky. UOSPA with support from ACDI/VOCA attempted to facilitate value chain finance by lending to millers for on-lending to farmers. Unfortunately, the spot market structure, the inability to enforce contracts, and the resulting side-selling led to an 11 million Ushs loss—almost the entire portfolio.

Some Lira millers recently formed a local millers association (separate from UOSPA) to deal with the increased competition caused by Mukwano's aggressive expansion in the market.

Sunflower Oil Wholesalers and Retailers

Oil wholesalers and retailers purchase oil from millers and distribute nationally. There is no branding of oil, which is sold in progressively smaller unlabelled plastic containers throughout the distribution channel. Retailers operate small stores or public market stalls. FINCA and other MFIs make working capital loans to some oil wholesalers and retailers. There is also a significant level of advances of oil from wholesalers to retailers, who delay payments until they have sold the product.

Value Chain Finance

The market based governance structure of the sunflower value chain limits the amount of value chain finance available at most steps in the process. Value chain finance exists at the steps in the chain where there are limited numbers of actors, and where lenders and borrowers are interdependent in meeting their value chain product goals. The two examples are millers that provide cash advances to rural traders to accumulate and deliver stocks, and wholesale oil dealers that provide in kind credit to retailers, who delay payments until they have sold the product.

Elements of Successful Lending in the Sunflower Value Chain: Contracts, Screening, Monitoring, Enforcement

The following table details how these value chain actors accomplish the necessary functions of client screening, monitoring and contract enforcement.

	Contract	Client Screening	Client Monitoring	Contract Enforcement
Millers provide cash advances to rural traders	Informal contract to deliver specific quantity, no quality requirements, cash advance provided	Millers develop trust relationships over the long term with rural traders. They work with the traders for several seasons before offering credit, which is progressively increased as confidence is gained.	Short turn around time for delivery of seed. Increasing use of cell phones to monitor stocks and expected delivery times. Little opportunity for side selling to another miller, due to interfirm cooperation among millers.	Threat of refusing future business. Organization of millers (UOSPA and new association in Lira) provides credible threat that a default to one miller will eliminate prospects of business with all millers.
Wholesalers provide in kind credit to retailers	Informal contract to delay payment until next delivery.	Wholesalers develop trust relationships over the long term with rural traders. The retailers that receive credit operate small stores at fixed locations that require investment and are not mobile.	Wholesalers regularly visit retailers and check on inventory, and collect payment. These costs are built into their costs as distributors.	Wholesalers can refuse to deliver new stock until prior stock is paid for. Wholesalers have informal divisions of "territory", so that it would be difficult for a defaulting retailer to buy from another source.

ACTORS IN THE SUNFLOWER VALUE CHAIN: MUKWANO INDUSTRIES IN LIRA

Input Supply and Extension Services

Mukwano Industries supplies the hybrid seed PAN 7351 and extension services through a system of village site coordinators, supervised by area coordinators. Site coordinators are local sunflower producers themselves, who also work with approximately 200 neighboring farmers organized into groups of about thirty. Each farmer signs a contract with Mukwano, which specifies that Mukwano will sell the PAN 7351 hybrid seed to farmers on a “paid in advance” basis, and will provide free extension services. Mukwano collaborates closely with two USAID projects to assist site coordinators to organize farmer groups and instruct them in improved production techniques. However, Mukwano does not provide any fertilizer or credit for fertilizer. Few farmers invest in using fertilizer, which results in lower yields and may reduce the farmers overall satisfaction with growing PAN 7351.

Farmers

Over 20,000 farmers have signed up to produce sunflowers but only 7,500 have actually been producing due to limited seed supplies. These small farmers are organized into farmer groups by Mukwano site coordinators. They enter into contracts that specify that all of their production must be sold to Mukwano. The contract also establishes quality standards and a floor price, and commits Mukwano to providing input seed in a timely fashion, and free extension services. Farmers are limited

to two to six kgs of seed (sufficient for one to three hectares of production) and must pay cash when orders are taken two to three months before planting. Farmers are responsible to deliver their seed harvest to a collection site operated by the site coordinator, where they receive immediate payment. Mukwano is entitled to institute appropriate legal action in the event of side selling, although there is no evidence that they have resorted to this action. Neither side is responsible if failure to comply is due to “natural calamities or other force majeure circumstances.”

In 2003, the first year of Mukwano’s operation, seed was advanced to farmers as in-kind credit but the practice was abandoned because of farmer side selling to local presses. The second season, Mukwano subsidized the cost of the seed and charged the farmers Ushs 3,000 per kg to cover transportation costs. In 2005, Mukwano eliminated subsidies and charged farmers the full cost of Ushs 7,000 per kg.

Site Coordinators

Mukwano organizes production through a system of village site coordinators, supervised by area coordinators who are Mukwano employees. Site coordinators are not employees of Mukwano, but work on a contract basis. Site coordinators are critical to Mukwano’s success because they procure 100 percent of its product. Site coordinators must meet certain minimum educational and capability requirements, and sign a contract with Mukwano that establishes their responsibilities and commission structure.

The site coordinators meet with farmer groups once a week so the coordinators can take orders for imported seed; collect the advance payments; set up group training meetings; arrange for demonstration plots; sell tarpaulins at cost to farmers for use in drying sunflower seed; and help the farmers transport their harvests to local collection points (usually rented space in buildings near major roads). Phone calls are used for those with cell phones to monitor activities, schedule seed deliveries, arrange for sunflower pickups, etc. The coordinators use funds advanced by Mukwano to pay cash to the farmers upon delivery.

Sunflower Processing

Mukwano uses its light trucks to transport the sacked sunflower seed to bulking centers where inventories are accumulated into 40 ton lots for transport by heavier trucks to its large industrial complex at the edge of Kampala. All pressing is currently based in Kampala, although Mukwano plans to install a 300 ton mill in Lira.

Wholesalers and Retailers

Mukwano works only with authorized wholesale distributors of their branded product. All packaging is provided as part of the production process. Wholesalers sell to many retailers nationwide. The retailers are generally in the formal sector—supermarkets and small stores, rather than public market stalls. Although it is against official company policy, wholesalers often provide in kind credit to retailers, who pay only after they have sold the product.

Value Chain Finance

There are two examples of value chain finance in the directed value chain of Mukwano’s outgrower scheme. Mukwano provides cash advances to contracted site coordinators to purchase seed from

farmer groups. Wholesale oil distributors provide in kind credit to retailers, who pay only after they have sold the product.

Elements of Successful Value Chain Lending: Contracts, Screening, Monitoring, Enforcement

The following table details how these value chain actors accomplish the necessary functions of client screening, monitoring and contract enforcement.

	Contract	Client Screening	Client Monitoring	Contract Enforcement
Mukwano provides cash advances to site coordinators	The 2006 contract specifies that the company will purchase PAN 7351 sunflower from the site coordinator for at least Ushs 350 per kg. ³⁸ The coordinator receives a commission of Ushs 10 per kg. The contract also specifies quality and packaging parameters. The weight of the sunflowers purchased is determined by the site coordinators at time of delivery.	The coordinators' primary job must be farming, they must own a bicycle, and most have an 11 th grade education (O level). About half have cell phones to facilitate communications.	Area coordinators, who are employees of Mukwano, provide regular oversight of site coordinators, supervising the extension services provided to farmer groups and monitoring production during the season. Cash advances are provided for an extremely short time period—1-2 days.	Threat of loss of future arrangements with Mukwano. Site coordinators have made significant investment in developing relationships with Mukwano, and throughout the growing season in monitoring and educating farmers. Loss of opportunity for this investment to pay off over the long term increases the perceived severity of sanction.
Wholesalers provide in kind credit to retailers	Informal contract to delay payment until next delivery.	Wholesalers develop trust relationships over the long term with rural traders. The retailers that receive credit operate small stores at fixed locations that require investment and are not mobile.	Wholesalers regularly visit retailers and check on inventory, and collect payment. These costs are built into their costs as distributors.	Wholesalers can refuse to deliver new stock until prior stock is paid for. Wholesalers have informal divisions of "territory", so that it would be difficult for a defaulting retailer to buy from another source.

Mukwano Industries: A Directed Value Chain without Value Chain Finance

Mukwano's sunflower outgrower scheme is an interesting case of a lead firm choosing not to offer value chain financing, despite a directed value chain governance structure that could facilitate such lending. Although much of the procurement infrastructure is similar to that of the sugar industry, with site coordinators, organized farmers and use of contracts, Mukwano has not chosen to provide in-kind lending of inputs.

There are three reasons that Mukwano has decided not to offer financing for inputs to farmers. First, Mukwano is not in need of outgrower farmers that require financing. Mukwano has a limited amount

³⁸ This price has remained the same for three seasons despite the increased cost of seed being passed on to farmers. This policy has produced complaints from farmers.

of PAN 7351 seed available, and to date, they have been able to recruit enough farmers with the resources to pay in advance for the seed. In this sense, they have no real demand for value chain finance. This may change when Mukwano attempts to scale up to their target of 100,000 farmers.

Secondly, although the Mukwano channel in isolation has a directed value chain structure, the market based independent channel provides ample opportunities for side selling. Despite Mukwano's attempts to enforce contracts, extensive side selling and loan defaults in the pilot years of the program discouraged Mukwano from providing additional input lending.³⁹ Mukwano's offer of access to credit, access to hybrid seed, free extension services, and a guaranteed price did not create adequate loyalty to ensure loan repayment or avoid side selling. Interestingly, Mukwano has never paid above the floor price for the PAN 7351 seeds, and when a shortage of local seeds drives up the prices offered by local millers, farmers producing under contract for Mukwano are likely to sell to the local millers for a better price. Mukwano has not yet made a strategic decision to compete with local millers in order to capture all PAN 7351 production. This may also change when Mukwano attempts to scale up the program and installs the 300 ton mill in Lira. At this time they may make a more serious effort to capture all PAN 7351 production in order to keep the Lira mill operating at capacity.

Thirdly, Mukwano management expresses reluctance to lend to farmers at an interest rate that would cover their risks and costs. Because of the history of Asian owned businesses in Uganda, Mukwano feels particularly vulnerable to charges of exploitation of poor farmers. Therefore, Mukwano has worked with several donor funded efforts to identify other sources of finance for farmers. Mukwano management has expressed a preference for the formation of a farmers SACCO over a partnership with a high interest rate lender such as an MFI. Mukwano may be willing to assist in its formation, since (similar to the farmers SACCO in the Kinyara value chain) the SACCO could provide credit and the returns would belong to the farmers.

LESSONS FROM THE SUNFLOWER FIELDS

Credit is used more frequently in both channels of the sunflower value chain as a business strategy for procurement and marketing than as a strategy to finance farmer production, both for Mukwano and for independent farmers and millers.⁴⁰. In the procurement and marketing segments of the value chain, the governance structure is balanced. Lenders can more easily screen and monitor their clients. The type of credit required (short term, collateralized by existing product), the governance structure (balanced, due to the limited number of millers and wholesalers of oil in any given area), and the consistent relationships over time result in more easily enforced contracts.

In the production segment of the value chain, the type of credit required (seasonal), the market governance structure (many small buyers and sellers in a spot market), and the lack of on-going relationships limit the enforceability of contracts. Farmers producing local varieties sell on the spot market, and offer little proof of creditworthiness to potential value chain lenders. Farmers producing

³⁹ Announcements are made on the local radio station about farmers who have broken contracts and become ineligible for renewal because they did not plant according to best practices, sold imported seed to non-contract farmers, placed stones and foreign material in sacks to increase their weight, or did not sell exclusively to Mukwano. In spite of these measures, there are reports of side selling when local millers are unable to procure adequate Sunfola supplies to operate their mills and aggressively poach farmers by offering higher prices for PAN 7351 sunflower grain.

⁴⁰ At the time of this fieldwork, the USAID/Rural SPEED project was evaluating the possibility of organizing sunflower farmers into savings-led SACCOs as way to expand rural financial services. This would help farmers accumulate savings to purchase seed and obtain small loans for sunflower production as well as other purposes.

for Mukwano are likely to side sell when competitive prices are offered by local millers, and this alternative market means that Mukwano's sanctions for side selling cannot be stringent enough to ensure adherence to their contracts. Prior losses, such as the UOSPA case and Mukwano's failed lending in the first years of production, discourage further experimentation.

Mukwano's strategic decision to eliminate value chain lending is consistent with their current business model, despite the fact that they have a well established screening and monitoring system. As long as there is a limited supply of PAN 7351, Mukwano cannot scale up production. Therefore, they have no incentive to invest in the processing plant in Lira, or to offer value chain finance in order to increase production. Farmers able to pay for seeds in advance provide all the production that Mukwano can currently support. Also, Mukwano does not have the incentive to compete on price with local millers in order to capture all PAN 7351 production, since sunflower seed is still a small product line for Mukwano. Both of these strategies are likely to change when adequate supplies of PAN 7351 input seeds are available.

When Mukwano is able to scale up, their production demands are likely to outstrip the number of farmers that can finance their own inputs. Mukwano will be able to use their current screening and monitoring structures to offer in-kind lending of inputs to farmers. However, given the availability of an alternative market of local millers, the governance structure will remain balanced, with Mukwano reliant upon farmers to provide adequate supplies for their processing activities. Mukwano may need to become more competitive on price in order to ensure adherence to contracts.

CONCLUSIONS

The patterns of value chain financing observed in Uganda follow finance principles and offer insights into how formal and informal finance may evolve for agricultural value chains. Agents in the value chain face the same challenges as financial institutions when they make loans. They must develop ways to effectively and efficiently screen and monitor clients and enforce loan contracts. Value chain governance structures have an important impact on firms' ability to complete these necessary steps.

IMPACT OF GOVERNANCE ON VALUE CHAIN FINANCE

The directed governance structure of the sugar value chain provided the lead firms with the ability to screen and monitor farmers, and to offer a credible threat of a serious sanction in case of default. These cases provided the only examples of value chain finance for production. The Kakira Sugar Works Ltd. experience, however, shows that even in a directed value chain, when the production aspect of contracts was broken by delaying the harvest, value chain finance was likely to fail also. The "two way street" of value chain relationships require that agreements around both finance and production are respected by both parties.

The market governance structure of the maize and sunflower value chains does not allow for the effective screening, monitoring or contract enforcement necessary for successful financial transactions within the value chain. Spot market transactions do not enable potential lenders to screen or monitor clients. Easy access to alternative buyers increases the options for borrowers to side-sell and avoid loan repayment. This prevents contract enforcement, because the lender would have little leverage. In addition, the availability of many sellers also reduces the incentive for buyers to make loans tied to production contracts.

Value chain finance for trading, however, was found within the maize and sunflower value chains, where a balanced governance structure existed between the actors. Rural stores and regional traders in the maize value chain or millers in the sunflower value chain, and wholesalers and retailers in the sunflower value chain, are interdependent. Both parties rely on each other to meet product market goals, and neither is easily replaced. The limited number of millers in each sunflower region, and the geographic delineation of territory for rural store owners bulking maize, or for sunflower oil distributors delivering product, creates relationships with incentives for maintaining long term cooperation and coordination. Through repeat transactions on these "two way streets", rural store owners develop confidence that regional traders or millers will consistently buy their product at an acceptable price. Regional traders and millers develop confidence that rural store owners will provide the product they need in a timely fashion. This kind of screening and monitoring enables value chain finance, even though lending is limited in size and term.

ADDITIONAL DETERMINANTS OF VALUE CHAIN FINANCE

The governance structure, however, is not the only determinant of the availability of value chain financing. Even when the necessary functions of client screening, monitoring and contract enforcement cannot be ensured, production goals may drive a value chain actor to provide finance. The main business of agents in a value chain is, after all, something other than lending. They supply

credit only when it contributes to their production objectives, and they consider the costs of offering credit as an additional cost of doing business. As long as their main business activity is successful, an agent in the value chain that makes informal loans may be able to absorb these transaction costs and tolerate a higher default rate on its loans than can a financial institution whose primary business and source of income is lending. For example, Kakira chose to pursue production expansion goals at the expense of increased losses in their value chain finance operation.

The production relationships among value chain actors also lower transaction costs for value chain lenders. The transaction costs involved in value chain lending are less than those faced by financial institutions because the lenders are already conducting other transactions with their borrowers as part of their main business of trading and/or processing agricultural products. These other transactions, such as registering outgrower farmers, or picking up stocks from a rural store, fulfill the need to screen and monitor clients.

However, the lower transaction costs and a favorable governance structure may still not be adequate incentive for a value chain actor to offer finance. Mukwano chooses not to offer finance because they can attain their production goals without offering finance. If Mukwano chooses an expansion strategy, similar to the sugar companies, they may have to offer finance in order to enlist enough farmers. However, they will also need to deal with the presence of alternative buyers from the independent channel, which impacts the governance structure.

It is important to note that farmers and rural households require a wide range of financial services, in addition to borrowing for their activities within a specific value chain. Providers of finance within the value chain, however, are interested only in financing required for value chain activities and do not supply loans to borrowers for other purposes. Agents within value chains, including farmers, are potential clients for banks, MDIs, MFIs and SACCOs that lend for other objectives or supply other financial products such as savings.

CONSIDERATIONS FOR DONOR INTERVENTIONS

The analyses in this paper explore how governance structures influence the availability of finance within value chains. It appears that finance provided within the value chain may not be feasible in value chains with a market governance structure, where a multitude of buyers and sellers of identical commodities increases the opportunities for side selling, thus making contracting, client screening, monitoring and enforcement extremely difficult and risky. It is not likely that interventions to increase lending within these types of value chains will be successful. However, alternative sources of finance that reduce risk or enable contracting, such as warehouse receipt lending, may overcome this barrier.

Balanced and directed value chain governance structures provide greater opportunities to increase lending within the value chain. In a balanced value chain, lenders and borrowers have strong incentives to abide by contracts because they can have relatively equal impacts on each other's businesses. Financial transactions in these types of value chains employ trust, long term relationships, and interfirm cooperation (in which breaking a contract would lead to that individual's exclusion from the entire value chain). Interventions which enhance contract enforcement could have an important impact in a balanced value chain.

In a directed value chain, a monopoly buyer holds power and control which enable effective contracting, client screening, monitoring and enforcement. These types of structures, however, often

have additional characteristics of inequitable distribution of power, learning and benefits within the chain, and the reduction of bargaining power and access to choices for producers. Interventions to strengthen these types of value chains should be evaluated for impact on the smallholder. Within directed value chains, interventions to increase options for finance or options for producing alternative commodities may be useful.

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