COMMMODITY VALUE CHAINS MAPPING

FINAL REPORT

September, 2005
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Rural SPEED

Rural Savings Promotion & Enhancement of Enterprise Development

COMMMODITY VALUE CHAINS MAPPING

FINAL REPORT

The author's 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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Executive Summary

USAID/Uganda's 2002-2008 strategy calls for expanded sustainable economic opportunities for rural growth, promoting a connection between productive strategies by the private sector in rural areas and expansion of financial services. In order to facilitate better understanding of the risks and benefits of agricultural lending on the part of lending institutions, Rural SPEED mapped the transaction points of the value chains for three key commodities: maize, sunflower and cotton. The ultimate objective is to encourage a better understanding of where there are opportunities to increase agricultural lending at relatively low risk for Uganda's lenders.

The value chain for maize modelled each transaction including farm inputs, farm gate sale, local transport, local sale, processing, regional transport and regional sale. The value added at each transaction point was revealed and compared with costs of financing to establish an actor's ability to repay finance and earn a profit. Strategies were suggested for designing and structuring loans to minimize risks to lending to maize producers and traders.

The value chain for sunflower modelled each transaction for input supply, farm gate sale, transport and end marketing. Two scenarios, using improved high yielding seed versus normal high yielding seed, were compared. The value added at each transaction point was significant. As with maize, potential financial product designs for financing sunflower transactions were suggested. Risks associated with sunflower sales being dominated by a monopsony are briefly discussed.

The value chain for sunflower covers each transaction from input supply through delivery to the ginnery. Again strong value added is revealed at each transaction point which could support financing. Forward contracting is reviewed as a possible strategy to encourage formal finance by ensuring price and commitment to buy. The risks of doing business with a de facto cartel, the cotton growers' organization, are also considered.

Finally, strategies that are currently working in managing agricultural finance risk in the Uganda context are reviewed. These include Centenary Bank's agricultural lending methodology; DFCU's leasing program and UGTL's experience with warehouse receipts.

SECTION I

1. Introduction

USAID/Uganda's 2002-2008 strategy calls for expanded sustainable economic opportunities for rural growth, promoting a connection between productive strategies by the private sector in rural areas and expansion of financial services. Rural SPEED (Savings Promotion & Enhancement of Enterprise Development) was designed to help meet this goal.

Rural SPEED's objective is to deepen and strengthen Uganda's financial sector in response to demand for financial services in the rural economy. Increased availability of financial services would result in the growth necessary to achieve the goals of GoU's Poverty Eradication Action Plan. Rural SPEED is engaged in four key activity areas: 1) savings mobilization; 2) service delivery mechanisms; 3) agriculture finance; 4) new product development. This report is concerned with agricultural finance.

In spite of agriculture's being the main occupation of the majority of Ugandans and a principal engine of potential rural growth (services are also important), rural areas, and farming in particular, are not well-served by the financial sector. Currently agricultural credit accounts for less than ten percent of the total formal financial institutions' loan portfolio. Agriculture finance has largely remained a poorly understood concept within the financial institutions. Furthermore, few actors in the financial sector realize that the full scope of agricultural finance extends beyond production to include, input supply, post harvest processing, transport, packaging, marketing, etc. Further even when considering production alone, there has been remarkable improvement in agricultural sectors, notably cotton, grains and oil seeds, over the past decade. This progress has been catalyzed by adoption of new technologies by the farmers through the past and on-going technical assistance support by development projects, improved market linkages, infrastructural improvements and better access to inputs. However, both regulated and self-regulated financial institutions largely continue to maintain the view that agriculture is risky and are thus reluctant to venture into, or reintroduce, agriculture finance products in their portfolios. This knowledge gap is largely perpetuated by the inadequate exposure to the costs and risks embedded at different points in the value chain of the agricultural commodities. Also, these institutions lack appropriate tools and mechanisms to adequately assess, mitigate and manage agriculture finance risks. With these tools agricultural finance may well become attractive, viable and sustainable.

1.1 Objective

The objective of mapping these commodity value chains (maize, cotton and sunflower) is to demystify and quantify the associated risks and costs. The result of this should facilitate the introduction of focused, viable and sustainable agriculture finance products within institutions that stretch beyond the bounds of production finance.

1.2 Methodology

The analysis in this report started from cost of production (COP) data compiled by Rural SPEED from its own field surveys, cross checked with data from its sister project APEP and organizations such as Kapchorwa Commercial Farmers' Association (KACOFA), Uganda

Grain Traders Ltd. (UGTL - maize), Mukwano Ltd. (sunflower), the Cotton Development Organization (CDO) and from cotton ginners.

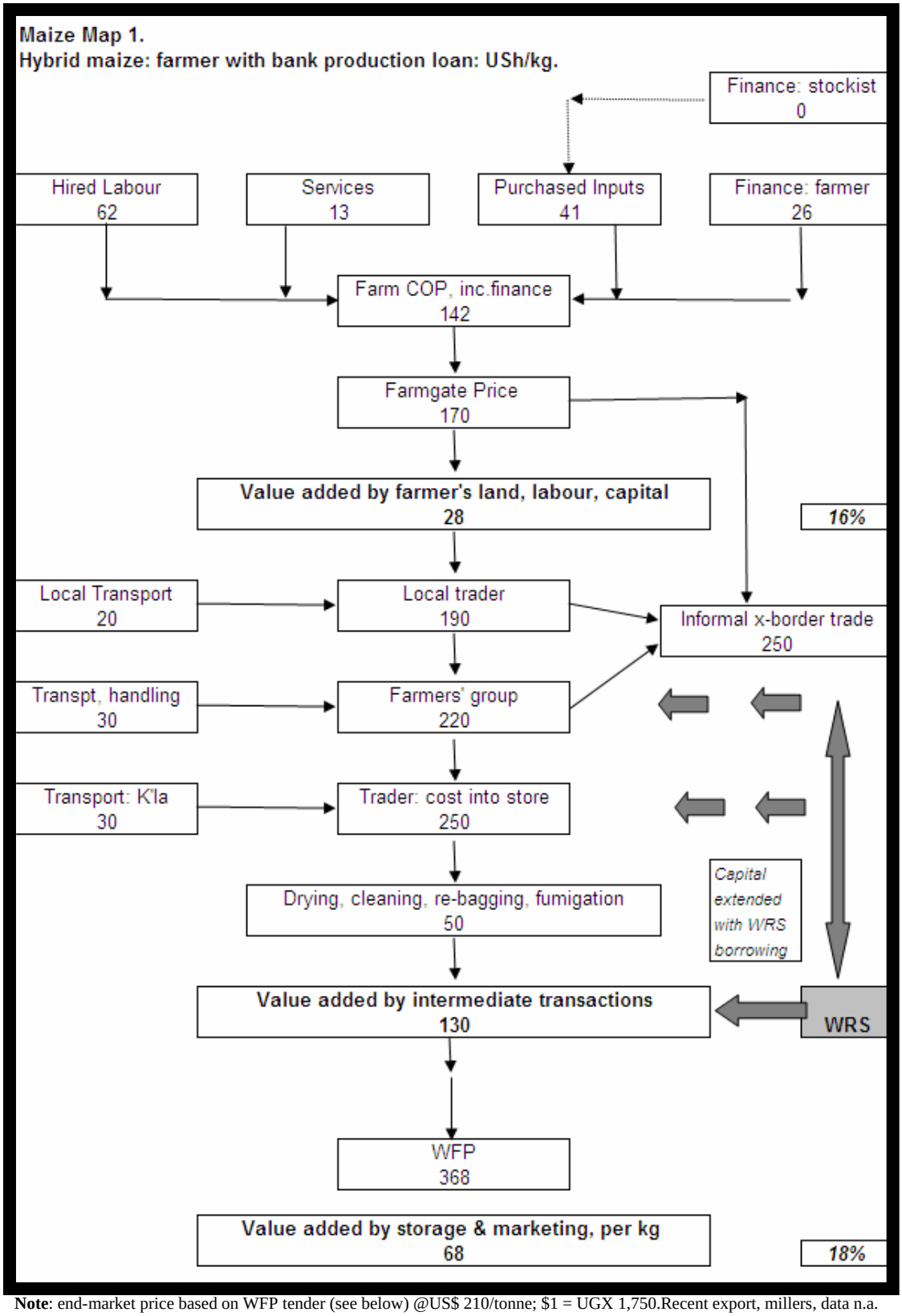
The cost of borrowing is based on Centenary Rural Development Bank's (CERUDEB) successful agricultural loan product for maize production and on average commercial loan costs for other commodities.

There is, of course, no unique, definitive cost of production. Conditions, circumstances and costs vary from district to district, farmer to farmer, season to season. The figures used are Rural Speed's average estimate of a representative figure, overall, for farmers using a moderately advanced level of technology (improved seed, fertilisers and pesticides).
The Costs of Production are annexed. The basis of analysis is UGX/kg, with necessary adjustments made to data expressed

in per acre or per ton terms. The aim is to show the value added, in UGX/kg, at each financial transaction in the chain. The analysis does not attempt to follow the chain to final, consumer, demand but rather to the local wholesale market. This decision was made because financing beyond the wholesale market (retail, export, etc.) is beyond the scope of rural finance and beyond the mandate of Rural SPEED.

SECTION II

2 Maize value chain – analysis in UGX/kg.



Note: end-market price based on WFP tender (see below) @US$ 210/tonne; $1 = UGX 1,750.Recent export, millers, data n.a.

2.1 Maize: Farm Production Level

The COP shown in the map is based on the case of commercial farmers – defined as those growing for the market, more than 10 acres (4 ha.), using hired labour and a recognised package of purchased inputs and achieving a yield off the field of 3 mt/acre (c. 7.5 t/ha.).

Hired labour	62
Services – ploughing etc.	13
Purchased inputs	41
Finance	26
Farm Cost of production (COP)	142
Farm gate price	170
VALUE ADDED BY FARMER (16%)	28

The farmer's margin is 16% of the farm gate price. Break-even comes (approximately) with any of the following:

- +10% additional COP and -10% in the price
- +20% additional COP or -20% in the price
- -17.5% in yield

2.2 Estimating Farm Finance Costs

The cost of finance is based on the following assumptions. First, financial institutions will only fund 50% of COP, prudently targeting borrowers able to offer equivalent equity. Interest is equivalent to 2% per month, plus a similar monitoring fee of 2% per month, to cover the extraordinary travel costs of supervising farm loans. An arrangement/commitment fee of 2% would seem to be a market norm. In short, the assumption is of lending at commercial rates, with no subsidy. These conditions are similar to those offered by CERUDEB in its specialised agriculture loan product. However, a lower monitoring fee of 0.5% applies to loans above 5 million UGX, thus lower finance costs and higher value added is possible at the same yield levels which would render the scenarios presented below much more viable.

Maize production finance, UGX/kg.														**High input, hired labor**
COP	116													
Own resources	50%													
			Months											
Scenario 1			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		58												
Drawn down			29	29										
Repaid									-29	-29				
Balance O/S			29	58	58	58	58	58	29	0				
Interest + monitor	4.0%		1	2	2	2	2	2	1	0				
Commitment fee	2.0%	1												
Cost of finance		**14.8**												

The tables show two scenarios, with different assumptions on draw down - either phased with the timing of crop operations (scenario 1) or drawn down all at once. Repayment in scenario 1 is in two instalments, soon after harvest. In scenario 2, it is after 12 months.

Scenario 2			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		58												
Drawn down			58	.										
Repaid														-58
Balance O/S			58	58	58	58	58	58	58	58	58	58	58	0
Interest + monitor	4.0%		2	2	2	2	2	2	2	2	2	2	2	0
Commitment fee	2.0%	1												
Cost of finance		**26.2**												

For the farmer, the first scenario would seem preferable – it minimises finance charges. For a financial institution, the second option clearly maximises income (even if it may add risk by apparently prolonging the loan unnecessarily). The central case in the map uses the higher figure, suggesting that production finance is viable to farmers capable of managing a high-input regime, but that it could be an even safer, but less profitable, loan, if the term were more closely tailored to the production cycle of the crop itself.

2.3 Maize: Intermediate Markets

Typically, there may be three stages in bulking-up of the produce of many farmers into the 'final' market, taken here as a grain trader's warehouse in Kampala. The local transaction may be as small as a boda boda carrying a single bag to a village market or trader, who then sells on to someone else, who in turn sells in ton lots to someone with both a large truck and, importantly, the finance to procure crop at 20-30 tonnes or more at a time. It is thought that there are of the order of 100 players who can regularly manage procurement at this scale.

Local Transport to Petty Trader/Farmers' Group	20 UGX/kg
Additional Bulking At District/Region Centre	30
Transport to Kampala Grain Trader	30
Cost into store (inc. farm gate), wet, untreated	250
Product Transformation: drying, weight loss,	
Cleaning, re-bagging, fumigation	50
INTERMEDIATE TRANSACTIONS VALUE ADDED	**130**

There will clearly be a considerable amount of variation in who actually adds the value in the first three steps. If farmers operate on a scale big enough to get the produce into store using their own transport, then the added value would accrue to them. Conventionally, a shorter chain is more efficient, but we need to be careful in applying this principle here. Where primary producers are many, small and scattered, it may be perfectly efficient for crop to be bulked up by smaller operators, with fixed assets (whether bicycle or pick-up) suited to their, and their customers', scale of operations. It is certainly not efficient for a 30-tonne truck to attempt to roam about on village tracks, picking up the odd bag here and there. It may be that the UGX 80 for intermediate haulage (which includes direct costs and returns to working capital) could be cut, perhaps by up to 50%, in a shorter chain.

Note the product transformation. Maize comes off farms in varying degrees of moisture content (often >20%), foreign matter included and diseased or broken grains. To be acceptable in bigger, formal markets it must be put into good keeping condition, at a specification acceptable to final customers and which protects the trader against loss through spoilage. With varying quality, there is bound to be some variation in the into-store price, for any given market; but this is not documented.

The box shows a proposal for a quality standard, made by UGTL. It is clear, just from the number of parameters included, that the scope for quality variation is considerable.

Proposed Quality Standard for Stored Maize	
Specifications	Maximum allowable percentage
Moisture Content (Maximum	14.0%
Insect damaged (Maximum)	1.0%
Foreign Matter	0.5%
Lice Weevils	No live weevils
Total Defective grains	5.5%
Aflotoxin (Maximum)	10ppb

Source: UGTL

2.4 Maize: End markets

- The maize market's single biggest player is the World Food Programme (WFP), buying for their feeding programs in the region's conflict zones.
- Informal cross-border trade, particularly in the East, to Kenya is important and price stability (see below) is closely related to events in this and the aid sectors.
- The domestic milling sector is fragmented, made up of many, small businesses making it difficult to achieve bankable efficiencies.
- There has been some success in large-volume regional exports; EAC, Zambia, Malawi, but this is constrained by high transport costs.

If we take a recent WFP tender price of US$ 210 /tonne as representative, we have a final pricei of UGX 368 /kg

TRADING VALUE ADDED (18%) UGX 68

18% gross margin on stock which is, presumably, held on average for perhaps only two or three months would seem to indicate a profitable business.

2.5 Maize: opportunities for Financial Institutions and Risk

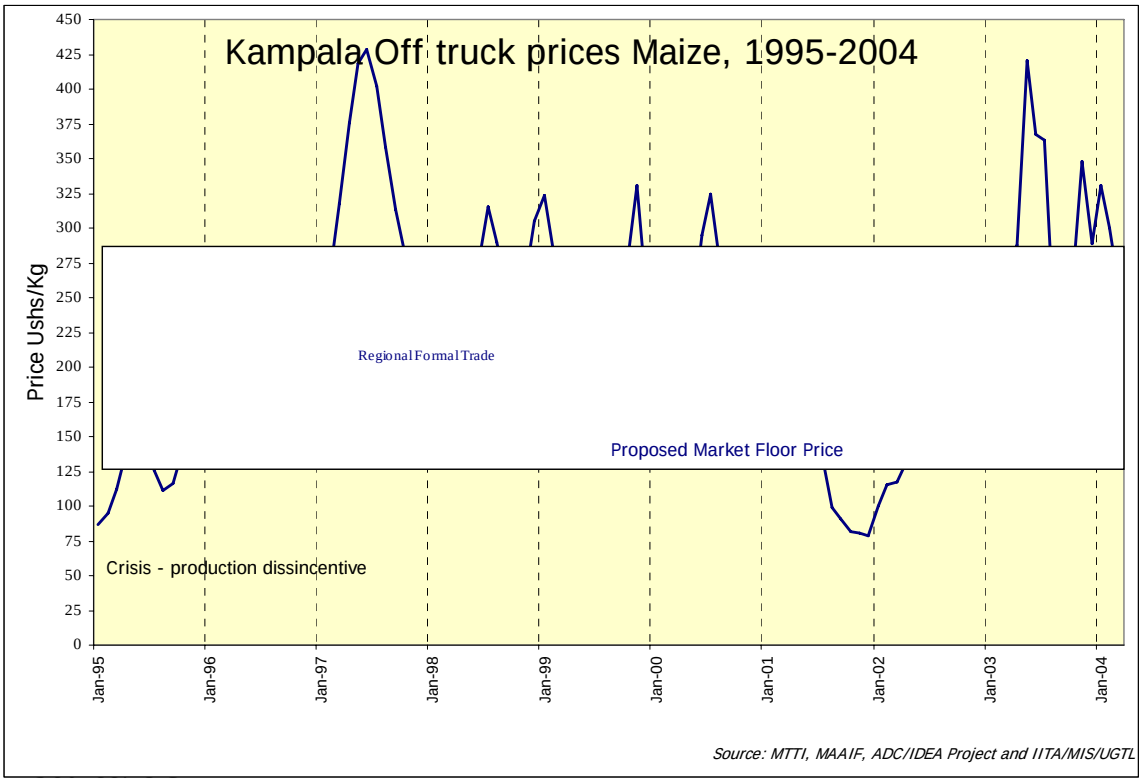
With margins apparently robust enough to support debt, practically all along the chain, there should be opportunities for lending, to farmers, transporters and traders. A further area is the stockists, who supply the inputs. Those visited during the study all complained that their banks make no effort to understand their business, concentrating only on the quality of security offered, usually the owners' houses.

This clearly presents opportunities for some innovative financing mechanisms. As World Food Programme is the largest regional buyer, they may be interested in forward contracting (which is a higher quality collateral versus rural buildings) and/or purchasing from organized warehouses

that could provide credit on the basis of inventory receipts. Of course, short term trade finance for input stockists represents a relatively short exposure, profitable lending opportunity which could effectively improve the value chain for maize by ensuring timely and cost effective input supply.

As to risk, farming, worldwide, is notoriously subject to the peculiar (co-variant) risks of weather, pests and markets. This is too wide a topic to explore generally in this study; but in the specific case of maize in Uganda, it is probably price volatility in response to regional supply changes that poses the greatest threat.

The two lowest points in the chart below both came about as a result of externalities. In 1995, anticipated demand from the agencies dealing with the aftermath of the genocide in Rwanda failed to materialise, because domestic production in Rwanda recovered faster than expected. In 2001, Kenya closed its border to Uganda maize, ostensibly on phyto-sanitary grounds, but widely thought (in Uganda) really to protect its own markets, which experienced a (recently) rare surplus.



Whether Kenya will remain in long-term deficit is unclear. But its role as a buyer, mostly informally, is clearly a crucial factor and any intending lender would probably wish to have a better informed perspective on this risk than is possible here.

It is well known that in shallow, rural markets few individual farmers operate on scale sufficient to justify large loans. Borrowers/customers are dispersed, and hence time- and vehicle-consuming to deal with. All this results in high transaction costs, but this is allowed for in the loan pricing modelled above.

SECTION III

3 Sunflower

3.1 Sunflower – farm production level

Applying the same methodology to a High External Input (HEI) sunflower, production package, we get a similar result as for maize. The margin is apparently robust and can carry 50% debt financing, even at the higher, scenario 2, level of a 12 month loan, in spite of sunflower's much shorter, 3-4 month season.

Hired labour	84	UGX/kg.
Services – ploughing etc.	55	
Purchased inputs	89	
Finance	52	
Farm cost of production (COP)		280
Farm gate price		350
VALUE ADDED BY FARMER 20%	**70**	

The cost of finance is as follows, with the 12 month option costing some 2 ½ times as much as it might otherwise:

Sunflower Finance, UGX per kg		**Improved HEI**												
COP	227.5													
Own resources	50%													
			Months											
HEI: Scenario 1			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		114												
Drawn down			57	28	28									
Repaid							-57	-57						
Balance O/S			57	85	114	114	57							
Interest + monitor	4.0%		2	3	5	5	2							
Commitment fee	2.0%	2												
Cost of finance		**19.3**												

HEI Sunflower: Scenario 2			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		114												
Drawn down			114											
Repaid														-114
Balance O/S			114	114	114	114	114	114	114	114	114	114	114	0
Interest + monitor	4.0%		5	5	5	5	5	5	5	5	5	5	5	
Commitment fee	2.0%	2												
Cost of finance		**52.3**												

This is somewhat academic as the sole market is the conglomerate, Mukwano Ltd., apparently the only crUGXer (processor) at present interested in Uganda sunflower. The company runs its own out-grower promotion scheme in selected districts and supplies inputs through a network of 'agents'. Inputs are supplied at market cost on a cash basis paid by farmers to the field agents. The margin for farmers in the scheme is:

Hired labour		84	UGX/kg.
Services – ploughing etc.		55	
Purchased inputs		89	
Finance		0	
Farm cost of production (COP)		228	
Farm gate price		350	
VALUE ADDED BY FARMER	35%	122	

3.2 Sunflower: intermediate markets

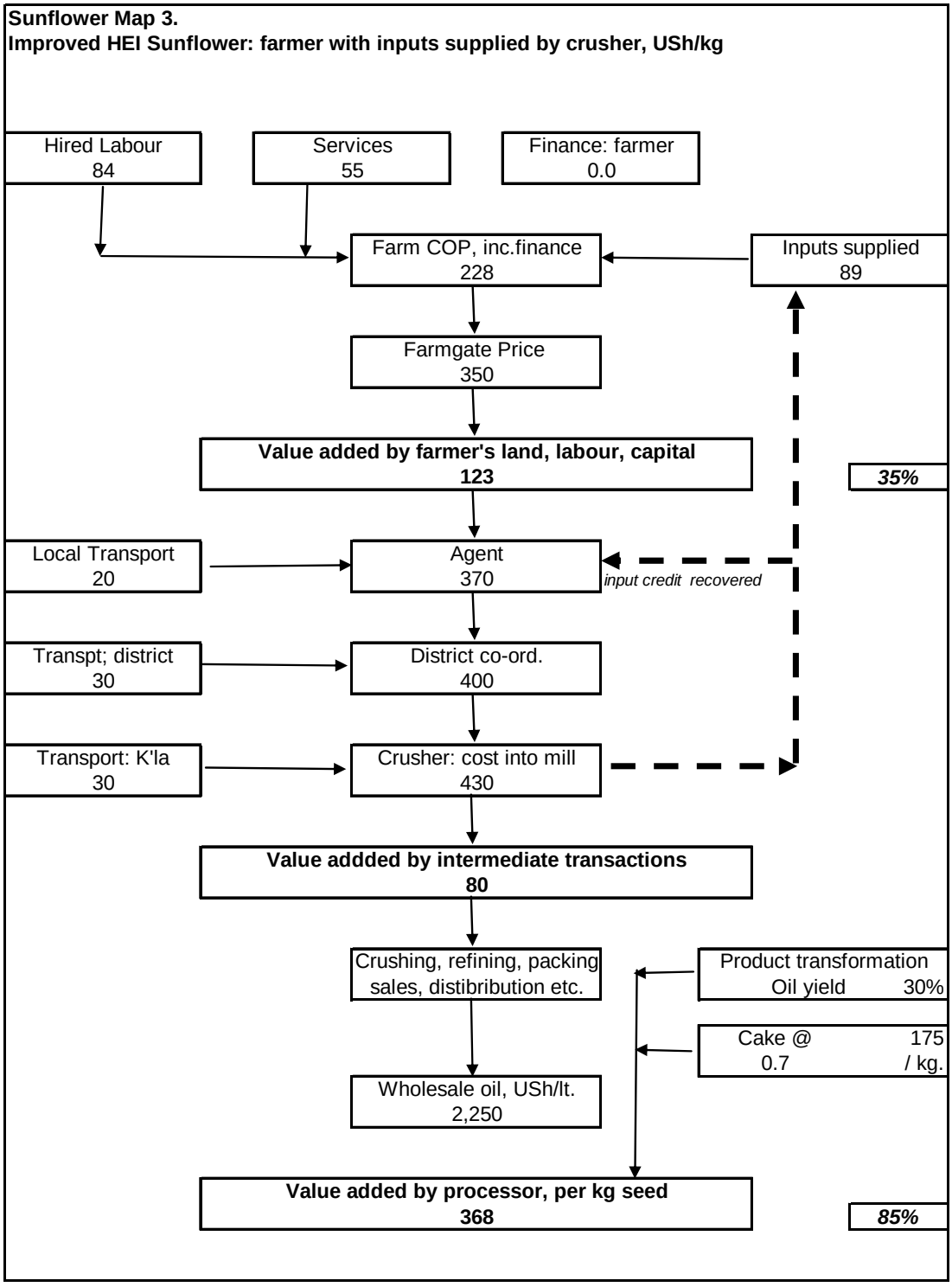
Similar to maize, we can assume three stages of bulking up: farm -> village/road -> district centre -> Kampala, with similar costs:

Cost into store (inc. farm gate)	430	UGX/kg.
INTERMEDIATE TRANSACTIONS VAL. ADDED	80	

In the Mukwano scheme the bulking up is by contracted agents working to 'district co-ordinators', appointed by the scheme and who have access to storage, either their own or rented. Mukwano uses its own transport from district to mill, with the co-ordinators hiring local contractors for moving produce lower down the chain.

3.3 Sunflower: end market

There is at present, and for the purposes of this value chain map, only one notable buyer which is Mukwano. Currently Mukwano offers a forward contract to farmers and guarantees minimum price. It is likely that others will enter this market as Mukwano improves its position and opens the door for competition. Current price clearly outpaces costs of production and competition for supply may eventually raise this price.



The end-market price for oil used in the map may exaggerate the ex-factory price (it is what retailers pay to wholesalers) but the processor's margin is surely interesting.

Opportunities and Risks

Given the clear profit margin, the guarantee of purchase at a predictable price, the reliability of input supply, the quality of the farmers' product, farmers' skill, the low cost of transport and the short growing season there are clear opportunities for lenders to compete for farmers' business. Mukwano has further stated that they would be willing to assign their forward contract to a lender, deduct the lender's payment and pay the balance to farmers in cash.

Just as in the case with maize, weather, pests, and other risks implicit to agriculture remain a serious consideration for any lender.

Another obvious and implicit risk is the fact that there is a single buyer for this commodity. This risk may be inconsequential as long as price is guaranteed in advance. However, given experience with other forward contracts in Uganda (most notably BAT forward contracts for tobacco) the other risk to consider is the effective enforcement of a forward contract. What may make Mukwano different from BAT however is that Mukwano must sell into the Ugandan market and would suffer serious consumer relations problems by defaulting on their contracts whereas BAT's major markets are outside of Uganda.

SECTION IV

4 Cotton

4.1 Cotton, commercial production, high input, hired labour

Using the same basis for analysis, it seems that this mode of production for cotton is marginally profitable, at the current price, which is historically low when adjusted for exchange. The next scenario, which is goes to the opposite extreme of using mostly family labour, demonstrates much higher value added. The reality of any farmer's production is likely between these two scenarios.

Hired labour	139	
Services – ploughing etc.	45	
Purchased inputs	120	
Finance	26	
Farm cost of production (COP)		330
Farm gate price		350
VALUE ADDED BY FARMER 6%	**20**	

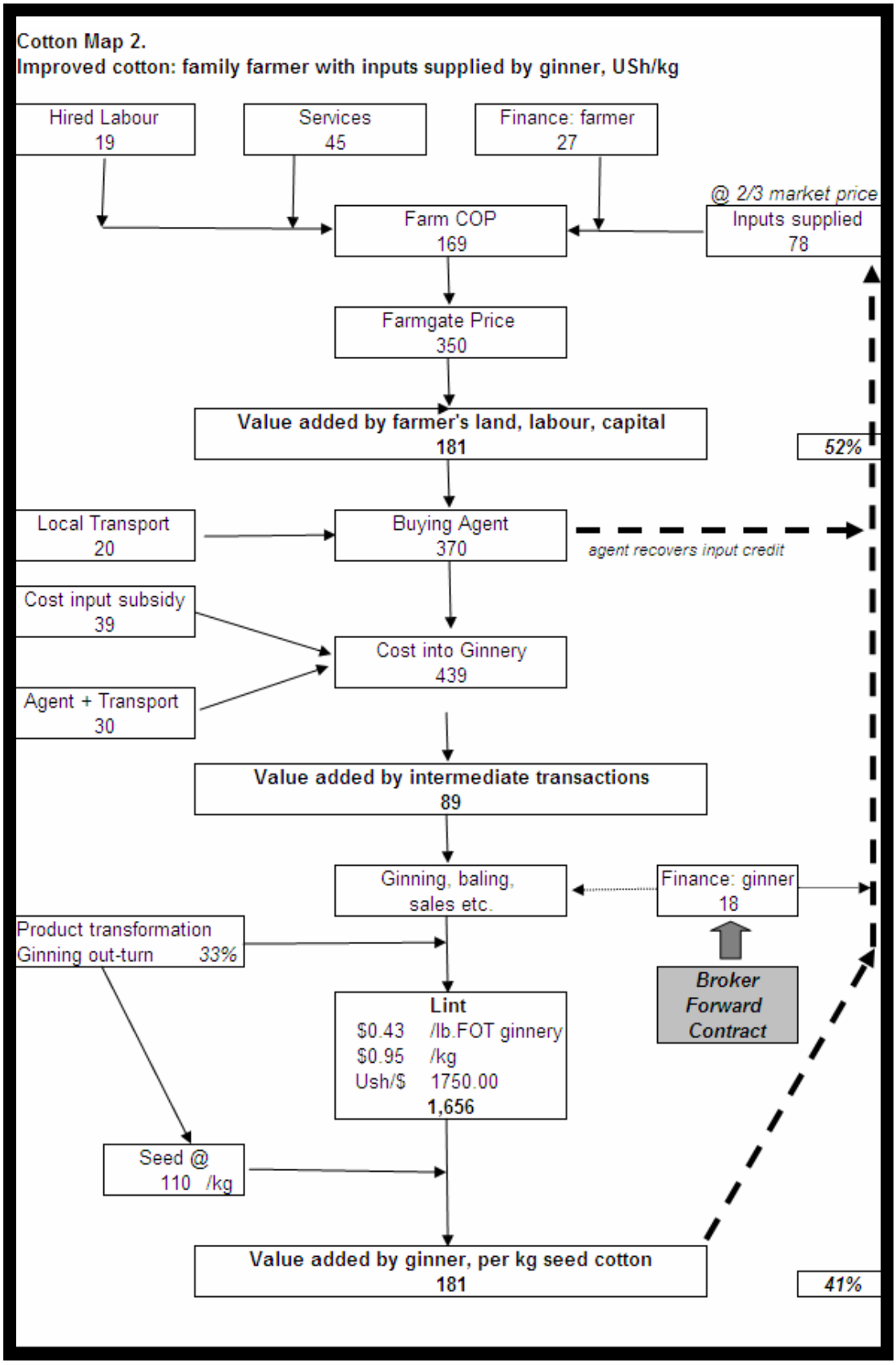
Cotton Finance, USh per kg			**High input, hired labor**											
COP	304		J	F	M	A	M	J	J	A	S	O	N	D
Cash flow, % total/month			0%	0%	0%	12%	31%	25%	8%	6%	4%	11%	2%	1%
Own resources	50%													
								Months						
Scenario 1			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		152												
Drawn down			18	47	38	11	10	6	17	3	2	0	0	0
Repaid											-76	-76		
Balance O/S			18	65	103	115	124	130	147	150	76	0	0	0
Interest + monitor	1.8%		0	1	2	2	2	2	3	3	1	0	0	0
Commitment fee	1.0%	2												
Cost of finance		**18.5**	Ush/kg seed											

Cotton has a longer season than either sunflower or maize (at least, at lower altitudes) and the Rural SPEED COP analyses how costs arise, month by month. The two scenarios below show the theoretical impact of phasing draw down to the enterprise's cash flow.

4.2 Cotton: Subsidized Inputs, Family Labour

Hired labour		19	
Services – ploughing etc.		45	
Inputs supplied by Ginnery, 2/3 market			78
Finance		27	
Farm cost of production (COP)			161
Farm gate price			350
VALUE ADDED BY FARMER	52%	181	

								Months						
Scenario 2			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Loan amount		152												
Drawn down			152											
Repaid												-152		
Balance O/S			152	152	152	152	152	152	152	152	152	0	0	0
Interest + monitor	1.8%		3	3	3	3	3	3	3	3	3	0	0	0
Commitment fee	1.0%	2												
Cost of finance		**26.5**	Ush/kg seed											



For the smaller family farm, less dependent on hired labour, cotton is a very viable enterprise.

A key variable here is the assumption that the Ginnery supplies the full package of inputs defined in the COP, but at 2/3 of cost, with GoU meeting the balance with a subvention through the CDO (not shown on the map, as its future is uncertain). It has not been possible to know 100% if the typical farmer gets the full package set out in the COP analysis. There is also some uncertainty as to what is 'cost'. Collectively, the ginneries have considerable buying power and can procure at well below what a farmer would have to pay, retail, at a stockist. But there may be some handling/distribution charge or other margin.

4.3 Cotton: intermediaries

The ginneries appoint buying agents, to whom they advance cash for crop procurement, replenishing as seed cotton is delivered. There are a number of issues of interest here that could usefully be explored in more detail:

- The cost of financing these advances is absorbed in the ginner's overhead. Ginners calculate the farm gate price, seemingly, as a residual once all the ginners' costs are taken care of. Finance charges are estimated as follows, with 61% of the total being crop finance:

Ginner: finance		
Arrangement fee, crop finance	3,000	Per 560 kg bale, lint
Interest, crop finance	16,000	
Interest, capital devt.	12,000	
	31,000	
	55	UGX per kg lint
Ginning out-turn	33%	
Ginner's cost of finance	**18.3**	UGX per kg seed
Crop finance only	**11.2**	UGX per kg seed

- Evidently the ginners find their agents creditworthy (to an extent), they couldn't operate otherwise. In a more perfect market, agents, as independent entrepreneurs, would be responsible for their own finance. To get to this point, banks would need to know more of the scale at which they operate, across the industry. Is there a trend to fewer, more efficient and more reliable, agents, year-on-year, handling progressively bigger proportions of the crop. This would indicate that people who are good at it are able to make money and grow, enhancing their own creditworthiness.

- Of the UGX 89 shown as intermediate value added, UGX 39 is the 1/3 uncharged element of the cost of inputs, a subsidy not to the agent's account. The UGX 20 shown as local transport may also simply be a cost to the agent.

- Agents are not contracted to procure specific volumes. Rather, it seems, they work to a general instruction of the form 'get as much as you can'.

- Ginners are prohibited from outside their zone but a single zone covers several ginneries and, thus, many agents. The implications for credit default, given the well-known conundrum that farmers are often tempted to sell to someone who does not need to make credit deductions, requires further consideration.

4.4 Cotton: End Market, Ginners

Cotton is sold to overseas (UK) brokers, on forward contracts, FoT Ginnery, with the broker finding the next buyer, taking on all downstream shipping costs, export formalities etc. etc. It is not known how much of the approx. 250,000 bales total crop this arrangement applies to, or whether ginners are able to arbitrage any 'free' cotton they may have over and above contracted volumes. Rural SPEED has not discussed this with ginners' bankers as it extends beyond the rural finance mandate of the project, but presumably the broker contract forms the basis for ginners' borrowing, probably $-denominated, possibly off-shore.

Again there is a product transformation, converting seed cotton to lint. The conversion rate, known as the 'Ginning Out-turn', is around 33%. The remaining two thirds is the seed, which has a local market for crushing to oil and cake for animal feed, including such firms as Mukwano. It seems that this market is over-supplied due to a recent surge in cotton production. In mid-2005, the ginneries were carrying large stocks of seed and the price had declined from UGX 160/ kg to the UGX 110/kg used in the map, with signs that it might be depressed further.

Cotton prices are generally quoted in dollars, at the time of this study, US$ 0.43/lb, which converts, as shown in the map, to UGX 1,656/kg (lint), which coverts back (x 33%) to a seed cotton equivalent price of UGX 546/kg. Adding the value of the seed (110 x 67% = 73) gives a final price of UGX 620/kg, seed cotton basis.

VALUE ADDED BY GINNER	(41%)	181 UGX/kg seed

4.5 Cotton: Opportunities

There is clear opportunity, with the interventions of projects such as APEP, cotton productivity is consistently increasing. Each unit increase in productivity lowers average production costs and results in higher value added at the farm. Clearly, cotton is already profitable from the farm gate perspective and likely to improve. Perhaps in the short term, either a forward contracting mechanism guaranteeing a minimum price for lint and/or for seed would bring greater financing to the value chain.

Further, ginners may be encouraged to allow farmers to assign forward contracts to lenders which again would facilitate the predictability of repayment. The current zoning policy may well enable this type of system.

4.6 Cotton: Risks

Not formally perhaps, but in effect the cotton industry is a cartel. As a general rule, cartels serve their members, not their suppliers, and it is unlikely that farmers get the best side of the deal (in spite of, and perhaps including, the input-supply package). Low price competition means inefficiencies and the current crop is only some 30% of nominal installed ginning capacity, which can only add to inefficiency. Moreover, over-capacity implies undervalued assets and reduced financial leverage.

The fact that most inputs are supplied by ginneries, rather than private stockists, may create problems such as late supply, inadequate supply, poor quality inputs, etc. This is because ginneries lack the proper relationships and incentives to perform this task as efficiently as someone who relies on this for their livelihood.

However, to emphasise the positive, cotton production is increasing, demonstrating small farmers' powerful collective ability to respond to incentives. Ginners' ability to secure finance against forward contracts, as much as against their Uganda fixed assets, is a reminder that, with the right instrument, agricultural lending is possible, even in a difficult sector.

SECTION V

5. Managing risk in agricultural finance

The scope of work for this report stops at the point at which Rural SPEED is able to offer the commodity maps to financial institutions, as an aid to the policy decision of whether to engage more closely with agricultural finance. The following general remarks are offered as an aid to this process.

Though the process is valuable, there is risk in focussing on single crops, as we have done here. There are two aspects to this. Because of their short seasons, the maps for maize and sunflower are incomplete. They do not tell us what is going on, on the farm, for the rest of the time, and, with other enterprises, in parallel. Many of the farmers concerned will be able to manage two crops a year and the commodity map does not adequately model the impact of this. It would explain the apparent willingness of farmers to take on costly 12 month debt for only 6 months' effort, if we could show that the sale of the first crop is rolled into financing the second, and that the two together are profitable enough to carry debt for the additional period. In short, more information is needed on rotations and farming systems and how these impact seasonal cash flow.

At the same time, one of the 'discoveries' of microfinance is that livelihoods are diverse. Customers are more than just maize farmers. Quite apart from the other crops fitted into a chosen rotation, there may be livestock, trading, artisanal services, remittances and other sources of income; all of them playing a part in family cash flow. And these can be used to service a loan, at least the interest, before harvest. This avoids the common mistake of past, often government- or donor-sponsored, agricultural lending, with lengthy grace on principal and interest.

A general point is that, though intervention upstream with the big traders and processors is usually safer, because of their (probably, but not necessarily) better collateral, there are in fact opportunities right down the chain. We have not looked at service providers, but there are people providing mechanisation on a contract basis (ploughing, spraying, maize shelling etc.). It may be that DFCU's leasing product has already penetrated this market but there is surely room for others. We have no detailed information on their margins and asset base, hence creditworthiness. This applies also to specialist input stockists; as noted, all have banks and all complain that their bankers view them as just another shop, without strong seasonal influences on cash flow. It will be interesting to see if the recent government offer of tax relief on agricultural lending changes this at all. We might expect significant re-classification of lending in banks' returns to BoU.

There is plenty of experience of loan guarantees as an instrument for promoting targeted lending, not all of it good. There are other instruments for the future. A great deal is expected, throughout the region, from warehouse receipts. It is assumed that readers are familiar with the basic idea: borrowing against inventory in order to increase it, aiming to sell at a more favourable moment in cyclical price variation, with safeguards for lenders provided by professional collateral managers. Essentially, it acts as an amplifier of a given amount of crop finance.

There are still issues to be sorted out in Warehouse Receipts Systems, including the legal question of ownership arising from 'co-mingled' stock. There are also certain to be problems of valuation in relationship to quality. This may be straightforward enough with seed cotton, with a single national price and with coffee there are well-established grading standards. But with maize, there are none and it is not easy to lend against an asset of uncertain value. We have seen UGTL's proposal for a standard but this is surely best set by an objective third party, not one of the players. In the context of EAC harmonisation and the importance of regional trade, this might best be established at the Community level. One the components of USAID's regional trade program may be able to take this further.

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The challenge is there and this report has sought to show that there are business opportunities in agricultural finance. The market should respond.

There are unfortunately other macro-economic and financial sector issues, however, which may overshadow the opportunity. The high cost of borrowing, driven by TBill rates, and the reluctance of banks to venture beyond the towns are large questions.

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