



NRSP Project R7962 “Linking Soil Fertility and Improved Cropping Strategies to Development Interventions”

Market Survey

By

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with

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Executive Summary

This report encompasses the findings of two related pieces of work: a survey of traders operating at three Kisumu markets (undertaken in 2003) and analysis of crop price data from both Kibuye wholesale market in Kisumu and three markets in Siaya district (Yala, Luanda and Siaya) covering the calendar years 2003 and 2004. The objective of the report is to assess the opportunities for producers from Siaya and Vihiga districts to sell surplus produce to Kisumu markets, instead of relying on more familiar local markets, where volumes traded are limited.

The survey of traders found that a small number of traders (primarily retailers, but also a few wholesalers) do receive direct supplies from smallholder producers. Moreover, others expressed an interest in doing so. Conditions that traders would expect smallholders to fulfil if they were to supply to them regularly included the ability to: supply at competitive prices and to meet transport costs themselves; supply good quality produce and, in some cases, to deliver an (unspecified) minimum quantity. In addition, some traders said that they would only wish to receive supplies direct from smallholders if there was a prior agreement that the smallholder should bring the produce to the trader.

Thirty-one traders stated that there are months when they are regularly short of supplies; only three said that there are no such months. The early months of the year were found to be the months when traders perceived the greatest produce shortages.

Discussions with key informants at the markets also suggested that brokers (and perhaps traders more generally?) have their tactics to exploit “new” farmers trying to sell into the markets. For example, brokers are said to pose as traders and negotiate prices with uninitiated producers, then pretend the price is too high and leave (to search for a real trader). After some time the broker (who has been posing as a trader) will emerge in the company of a trader who has been offered the farmer’s produce at a higher price. The farmer will be surprised to see the broker get the money from the trader, deduct his commission and then hand the rest of the money to the farmer. At this point the farmer can only count his/her losses since s/he would have sold at that higher price had s/he been able to sell directly to the trader.

Meanwhile, the analysis of crop price data reported in part 2 of this report indicates that supplying at competitive prices represents a significant challenge for smallholders based in Siaya and Vihiga districts.

Prices in Luanda, Siaya and Yala markets were found to vary quite significantly within a year (e.g. the highest maize price recorded in Siaya in 2003 was 90% greater than the lowest, whilst the equivalent figure in 2004 was 60%). This is perhaps surprising, given that there are two harvests per year. A high proportion of total area cultivated in both long and short rains is devoted to maize and beans. However, the fact that many households are still not self-sufficient in these crops (let alone others) helps explain the volatility of prices. At the same time, high levels of maize price volatility may contribute to farmers focusing on production of maize at the expense of higher value produce.

As with Kisumu market prices (presented in Appendix 1), there are few clear patterns of intra-seasonal price movement in Luanda, Siaya and Yala markets. It may thus be difficult for farmers to predict when the optimal time to sell a given crop will be. However, the report

notes that maize and bean prices are often low in January. Thus, it is unwise for farmers on the SCOBICS credit scheme to plan to repay their loans out of maize or beans, as repayment is required by mid-December (or could be January if a voucher scheme were to be introduced).

Finally, a detailed comparison of weekly prices in Kisumu and Siaya markets shows that the price that a producer in Siaya district can obtain if selling his/her produce to a wholesaler in Kisumu is consistently lower than the price that the same producer could obtain for selling the crop in Siaya market during the same week. The basic explanation for this is that Siaya and Vihiga districts are food deficit areas. Thus, the prices in local markets are “local import parity prices”, i.e. the *selling* price in a regional centre such as Kisumu *plus* the cost of transporting produce from such a centre to Siaya or Vihiga. By contrast, a producer looking to sell from Siaya or Vihiga to Kisumu would obtain a “local export parity price”, i.e. the *buying* price in a regional centre such as Kisumu *minus* the cost of transporting produce from such a centre to Siaya or Vihiga.

Given that local producers have not yet established relationships with traders in Kisumu and the commonly expressed belief that traders in Kisumu seek to take advantage of inexperienced “outsiders” to the market, the only reason that a producer or group of producers from Siaya might take their produce to Kisumu under current circumstances is that they have more produce to sell than can be readily absorbed in local markets (where volumes traded can be quite small).

However, if efforts to promote more intensive agricultural production in Siaya and Vihiga (for example, through the SCOBICS¹ credit scheme and associated activities) bear fruit and lead to a shift in the status of these districts to being surplus areas, not only will surplus producers have to accept prices that are 20% (maize) to 40%+ (tomatoes and onions) lower in real terms than current prices in local markets, but prices in local markets will themselves fall by 20-40% in real terms over time.

This has two major implications:

- Firstly, producers who invest in more intensive production will need to achieve productivity increases in excess of 30% if the returns from higher production are not simply to be eroded by falling prices. Price falls could discourage some from making the necessary investments;
- Secondly, even if it is only the top half or even tercile of farmers who invest in intensification, poorer households (almost always net food deficit) will benefit from significantly lower food prices (20%+ in real terms) as long as the districts as a whole become net food surplus. Thus, whilst it is desirable to assist as many households as possible to intensify their production activities, poor households may benefit even if they are unable to participate directly in intensification.

¹ For more information on the work presented in this report, please contact C.Poulton@imperial.ac.uk. For more information on the SCOBICS credit scheme, please contact jndufa@africaonline.co.ke.

1. Findings from the Survey of Kisumu Market Traders

A total of 40 traders were interviewed in three Kisumu markets – Kibuye, Kondele and Jubilee² – during the months of March and November 2003. Traders were selected for interview primarily on the basis of willingness to speak to enumerators. Permission was sought from the market superintendent at Jubilee market and the market masters at Kondele and Kibuye markets to interview traders within the markets.

Figure 1 sets out the supply relationships between the different players associated with the markets. Note that, for the purposes of this figure, “consumer” encompasses not just private individuals, but also hawkers, hoteliers and institutional buyers who come to buy at the markets. External wholesalers may be from one of the other Kisumu markets (e.g. retailers at Jubilee buy from wholesalers at Kibuye) or from a market in another part of the country.

Producers selling to the main Kisumu markets may deal with one of five types of trader:

- Assembly traders, who buy produce within the producing villages to take to sell in Kisumu. This saves the producer the time and money of taking their produce to the market, but leaves any profit from the arbitrage activity in the hands of the trader;
- Brokers, based at the Kisumu markets, who, for a commission, link suppliers wanting to sell produce to traders within the markets who are wanting to obtain it. Where large consignments of produce are to be sold, this can be a useful function, as a single trader within the market may not wish to buy the whole consignment. However, the benefits of the brokerage function to suppliers of small volumes are more questionable (see below).
- Wholesalers, retailers or wholesaler/retailers within the markets. From the producer’s perspective (assuming s/he can access these different types of trader), selling direct to a retailer will realise a higher per unit price. However, a retailer is only likely to take one bag of a given crop on a given day. Wholesalers buy in larger quantities, but offer lower prices.

The types of traders interviewed for this work are shown in Table 1.

Table 1: Types of Traders Interviewed, by Market

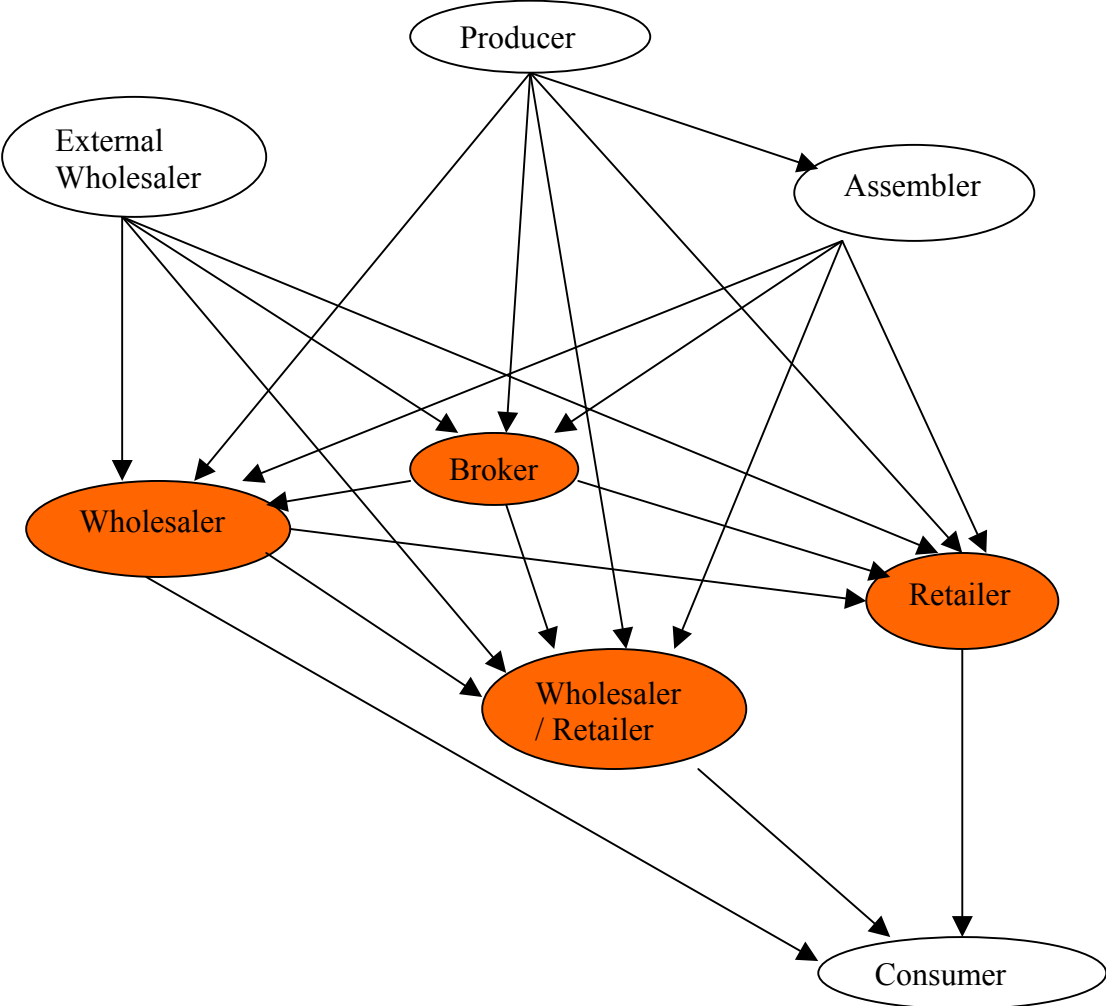
Market	Type of trader					Total
	Wholesaler	Retailer	Broker	Retailer/wholesaler	Assembly supplier	
Kibuye	6	3	1	2	1	13
Kondele	2	10		1		13
Jubilee	2	4		2	6	14
Total	10	17	1	5	7	40

In what follows, we explain how the different types of traders do business, then explore the potential for small-scale producers from the project area to establish supply relationships with traders within the Kisumu markets.

² Whilst all markets contain both wholesalers and retailers, Kibuye functions primarily as a wholesale market during weekdays, whilst Jubilee is primarily a retail market.

Figure 1: Supply Relationships at Kisumu Markets

Key: = within Kisumu markets



1.1 Traders and their Ways of Doing Business

On average, the surveyed traders had operated at the markets in question for just over nine years, with wholesalers having been at their respective markets for longer (13 years) than retailers (six years). Most wholesalers are at work at the market every day of the week, most retailers six days per week. Assembly traders go to the market when they have produce to sell, on average four days per week.

Clients and Suppliers

Tables 2 and 3 show the relative importance of different types of buyers to wholesalers and retailers respectively. Table 2 shows that the most important customers for wholesalers are other traders within the market(s), followed by hawkers. Table 3 shows that the most important customers for retailers are individual consumers, followed by hotels and restaurants. Perhaps predictably, wholesaler/retailers exhibit a mix of these two results, with their most important customer types being other traders, followed by individual consumers and hawkers.

Table 2: Relative Importance of Different Buyers to Wholesalers

Rank	Individual Consumers	Other Traders	Hawkers	Shopkeepers	Hotels + Restaurants	Schools + Institutions
1 st	0	6	4	0	0	0
2 nd	3	1	3	0	2	1
3 rd	3	0	1	0	4	2
4 th	2	0	0	1	3	0
No rank	2	3	2	9	1	7
Total	10	10	10	10	10	10

Table 3: Relative Importance of Different Buyers to Retailers

	Individual Consumers	Other Traders	Hawkers	Shopkeepers	Hotels + Restaurants	Schools + Institutions
1 st	13	2	0	0	2	0
2 nd	3	2	3	0	7	0
3 rd	1	1	2	0	2	1
4 th	0	1	0	1	0	2
No rank	0	11	12	16	6	14
Total	17	17	17	17	17	17

Table 4 shows the relative importance of different sources of supply to wholesalers and retailers³. From this table, assemblers appear as the most important supply source for wholesalers, followed by wholesalers in other markets. Brokers score surprisingly infrequently, perhaps only being relied upon when “regular” suppliers are unable to deliver sufficient quantities⁴. Meanwhile, wholesalers in other markets and wholesalers within the same market appear as the most important supply source for retailers. A notable additional feature of this table is the supplemental role in direct supply played by smallholder producers. We return to this below.

Table 4: Relative Importance of Different Supply Sources to Wholesalers and Retailers

Source of Supply	Wholesalers		Retailers		
	No. of 1 st Rankings	No. of 2 nd Rankings	No. of 1 st Rankings	No. of 2 nd Rankings	No. of 3 rd Rankings
Own Farm		1		1	
Wholesalers (within market)			10	5	
Brokers	1	1			
Wholesalers (outside market)		6	16	3	6
Assembly Suppliers	9		2	3	
Smallholder Farmers	1	1	1	6	4
Commercial Farmers	1				
Total	12	9	29	18	10

Nature of Supply Transactions

Having cited the most important sources of supply for their business, traders were asked about their modes of dealing with different suppliers. These findings are summarised in Table 5.

Table 5: Principal Modes of Dealing with Different Suppliers

	Dealings with Wholesalers			Dealings with Assemblers			Dealings with Smallholders		
	Most Imp.	Imp.	Less Imp.	Most Imp.	Imp.	Less Imp.	Most Imp.	Imp.	Less Imp.
Spot Purchase	17	2	1	15	1	2	7	4	3
Pre-Arranged Deal	3	3	2	2	9		7	7	
Regular Supply Arrangement	2	4	1	1	3	4	2	1	2

Table 5 shows that spot purchases are the most important transaction mode when buying from both wholesalers and assembly traders, although a number of respondents also reported

³ The questionnaire asked respondents to answer this for a subset of their crops only, hence the relatively low totals.

⁴ An alternative explanation is that, even when relying on brokers to link them to available supply, traders recorded the ultimate supplier (e.g. assembler or producer) as the source of supply.

buying either under pre-arranged deals or through regular supply arrangements. In direct dealings with smallholder producers, spot purchases and pre-arranged deals were of equal importance, whilst some buyers also entered into regular supply arrangements with smallholders.

Basic details of a number of regular supply arrangements were provided. In seven such arrangements (for two wholesalers and five retailers), the supplier brings produce on a weekly basis. In two others (for one wholesaler and one wholesaler / retailer), the supplier brings produce daily.

Table 6 outlines the most important attributes of a regular supplier as given by nineteen respondents that currently engage in such relationships. The ability to deliver reliable quality appears as the most important attribute, along with a willingness to be flexible in negotiating prices. Delivering reliable quality is more important than reliability in delivering the agreed quantities, although the latter also appears as important. Perhaps surprisingly, flexibility in negotiating prices was valued as much or more by traders dealing in pulses, groundnuts and maize as by traders dealing in more perishable horticultural products, where the prices prevailing in the market might be expected to move more quickly. The ability to supply throughout the year also appears as an important attribute and there is evidence that some (if not all) traders will only enter into a regular supply arrangement with someone whom they have prior knowledge of, perhaps through previous spot market transactions or (one-off) pre-arranged supply transactions.

Table 6: Attributes Sought in Regular Suppliers

Attribute	Ranked First	Ranked Second	Ranked Third	Total
Deliver reliable quality	7	4		11
Flexibility in negotiating prices	4	4	3	11
Respond to changing market needs	3	2	1	6
Supply throughout the year	2	4	1	7
Reliability in delivering agreed quantities	1	1	2	4
Cleanliness	1	1		2
Offer discount	1			1
Prior knowledge of the supplier			5	5

Opportunities for Smallholder Supply

Finally, twenty-seven traders expressed interest in receiving additional supplies direct from smallholder producers at any time of the year and a further four expressed interest in receiving such supplies during their months of shortage (see below). Only three traders claimed to have adequate supplies throughout the year and six respondents recorded no answer to these questions.

Table 7: Conditions that Smallholder Suppliers Should Fulfil

Conditions to Fulfil	Ranked First	Ranked Second	Ranked Third	Total
Competitive prices	7	12	4	23
Meet transport cost	6	5	3	14
Sufficient supply	5	2	2	9
Supply on credit	5			5
Good quality	4	6	4	14
Prior arrangement	3	2		5

Table 7 sets out the conditions that traders would expect smallholders to fulfil if they were to supply to them. Supplying at competitive prices and meeting transport costs themselves were the most frequently cited conditions, perhaps reflecting a perception amongst traders that some smallholders have only limited understanding of the basic requirements of being a commercial supplier. The work reported in part 2 of this report indicates that supplying at competitive prices represents a significant challenge for smallholders based in Siaya and Vihiga districts. The ability to supply good quality produce also emerges as important, consistent with the findings of Table 6. Some traders (primarily wholesalers) would only be interested in dealing with smallholders that could deliver an (unspecified) minimum quantity and some would only wish to receive to receive supplies direct from smallholders if there was a prior agreement that the smallholder should bring the produce to the trader. Finally, five respondents would expect smallholder suppliers to supply their produce on credit. It is not clear whether or not they expect this of other suppliers – or whether they are not particularly interested in additional supplies direct from smallholder producers except on the most favourable of terms.

These findings indicate that there may be opportunities for individual smallholders or smallholder marketing groups to explore at the Kisumu markets. However, the challenges should not be underestimated.

1.2 Analysis by Crop

The traders can be divided into two broad crop groups: those who deal in grains, pulses and groundnuts (21) and those who deal in horticultural crops (19). Table 8 shows the crops that the surveyed traders deal in.

Table 8: Main Crops Sold by Trader Type

Crop	Type of trader					Total
	Wholesaler	Retailer	Broker	Retailer/ wholesaler	Assembly supplier	
Groundnuts	6	8		4		18
Beans (Wairimu)	5	9		2		16
Beans (Njano)	5	8		2		15
Beans (Rose coco)	3	8		4		15
Soyabeans	3	5		2		10
Tomatoes	1	4	1	1	3	10
Beans (Nyayo)	2	6		1		9
Kales	2	3		1	2	8
Maize	2	1		4		7
Beans (Nyamango)	4	2				6
Onions	1	3		1	1	6
Beans (yellow)		2		2		4
Beans (Red berry coat)	1			1		2
Beans (Sura mbaya)		1		1		2
Beans (Okwodo)	1			1		2
Beans (C. wonder)				1		1
Beans (Pocho)				1		1
Beans (Aluenge)		1				1
Total	36	61	1	29	6	134

Many traders who deal in horticultural crops specialise in one crop (14 out of 19 respondents). The maximum number of horticultural crops traded in was three. By contrast, the traders who dealt in pulses and groundnuts traded in an average of five crops, whilst those who also dealt in maize traded in an average of six crops.

Volumes Traded

Table 9 provides an estimate of the volume of produce sold in an average week by the different trader types⁵. This suggests that wholesalers and wholesaler / retailers deal in similar volumes of produce, considerably in excess of those handled by retailers. Assembly suppliers

⁵ The figures in Table 10 exclude two outliers – an unusually large “retailer” and an improbably small “wholesaler”.

and brokers appear to handle yet larger volumes still⁶. There were no significant differences in the volumes of produce handled by (given types of) horticultural traders on the one hand or grains, pulses and groundnuts traders on the other.

Table 9: Total Volume of Produce Sold per Week, by Trader Type

Type of Trader	Volume of Produce Sold per Week (kg)			
	Mean	Std Deviation	Maximum	Minimum
Wholesaler	1235	798	2400	389
Retailer	170	89	280	19
Broker	9800	.	9800	9800
Wholesaler/retailer	1530	597	2219	909
Assembly supplier	3859	2279	7350	1600

Seasonal Variations in Trade

Table 10 suggests that more business in pulses, groundnuts, maize and kales is conducted in the months January to March than at any other time of the year, although around half of all beans traders indicated that they do business on a fairly constant basis throughout the year. Business in tomatoes and onions is brisk in the middle of the year.

The relationship between traded volumes and observed prices is not immediately clear. Recorded prices of selected crops in Kibuye market for the years 2000-2004 are shown in Appendix 1⁷. One notable feature of these charts is that inter-seasonal price trends vary from year to year. However, the relatively constant bean price through the year is consistent with the observation from beans traders that they do business on a fairly constant basis throughout the year.

Thirty-one traders stated that there are months when they are regularly short of supplies; only three said that there are no such months (the remaining six cases are missing variables). Table 11 presents the responses on crop shortages by produce type. Most crops are considered readily available in the months of July-October, which is not surprising given that the main harvest in western Kenya occurs in June-July. It is the early months of the year that emerge as the months when traders perceive the greatest produce shortages. These are the months when they also claim to handle the highest volumes (Table 10).

⁶ Brokers do not take ownership of produce. Their commission for selling on a net or bag of produce on behalf of a client might be KShs 10, whereas a wholesaler selling the same bag might make KShs 100-300 profit, depending on the time of year and hence scarcity of supply.

⁷ These are nominal prices, i.e. not adjusted for inflation. From the charts, we observe that 2000 was a poor (shortage) year for many crops, whilst availability was relatively plentiful in 2002. The long rains season in 2004 was generally a poor one in Kenya, so prices of all the selected crops (with the exception of tomatoes) were above their “normal” levels in the second half of this year.

Table 10: Main Trading Months for Different Crops

Crop	Main months sold								Total
	Jan - Mar	Apr - June	July - Sept	Oct - Dec	Jan - June	July - Dec	All year	Not known	
Groundnuts	4			1	5	2	5	1	18
Beans (Wairimu)	2				1	2	10	1	16
Beans (Njano)	1			1	1	2	8	2	15
Beans (Rose coco)	3			1	1	2	7	1	15
Soyabeans	2				2		4	2	10
Tomatoes			2		1	1		6	10
Beans (Nyayo)	1			2	1		5		9
Kales	2				1		2	3	8
Maize	2				2		3		7
Beans (Nyamango)					1		5		6
Onions		1	1		1	1		2	6
Beans (yellow)	2					1	1		4
Beans (Red berry coat)	1				1				2
Beans (Sura mbaya)	1						1		2
Beans (Okwodo)	1						1		2
Beans (C. wonder)	1								1
Beans (Pocho)	1								1
Beans (Aluenge)				1					1
Total	24	1	3	6	18	11	52	18	134

N.B. Respondents were allowed to specify busy quarters or halves of the year or to state that they were equally busy throughout the year.

This information is consistent with western Kenya's status as a deficit region for many of the crops considered here. Local demand falls when local supply is plentiful and vice versa. Prices, however, are also influenced by forces and events elsewhere in the country, as much produce is sourced from other parts. Hence, the periods of strongest local demand are not necessarily those of the highest prices.

Shortages of beans, groundnuts and soyabeans in the early months of the year may present opportunities for producers in the project area who are looking to diversify into these crops during the short rains season, having satisfied (most of) their maize requirements during the long rains. Table 11 indicates that they should at least find traders in Kisumu eager to purchase their crops, although the second part of this report shows that they will still be better off supplying their local markets whilst their areas remain food deficit.

Table 11: Months of Claimed Crop Shortages

Month of Claimed Shortage	Crop						
	Beans (various)	Soya beans	Tomatoes	Kales	Onions	Maize	Groundnuts
January	5	3	2	3	3	1	3
February	8	2	2	3	3	2	5
March	11	1	3	3	3	3	8
April	10	2	3	.	3	2	8
May	5	1	2	.	1	2	5
June	4	1	2	1	.	1	4
July	1	1	1	1	.	.	.
August	.	2	.	.	.	.	1
September	1	2	.	.	.	.	1
October	3	3	.	.	.	.	3
November	2	2	.	1	.	1	4
December	4	2	1	2	1	1	5

Product Attributes Desired by Consumers

When asked what attributes buyers looked for when buying particular types of produce from them, traders cited cleanliness (47/134 cases⁸) and attractive appearance (34/134) as the two top priorities. Freshness was also considered important for kales (5/9) and tomatoes (3/10), which are perishable. (Otherwise, there was little difference between the rankings for different crops). Low price was only ranked first in 8/134 cases, although it featured more prominently in the list of second priority attributes (21/134), alongside large size (24/134), no weevils (20/134) and attractive appearance (15/134). This is because traders tend to offer very similar prices for a given crop at a given time. Hence, buyers place more emphasis on non-price factors than on price. If, however, a trader insisted on charging a higher price than those demanded by competitors, that trader would soon lose business.

Questions were also asked about the relative importance attached to different product attributes by different types of buyers. In this analysis, cleanliness and attractive appearance were considered most important to individual consumers and to hotels and restaurants, with low price the most important secondary consideration. For other traders and for schools and institutions, cleanliness, attractive appearance and low price were ranked of equal importance, whilst for hawkers low price was considered the most important consideration.

⁸ A response by a single trader for a single crop counts as one case.

1.3 Assemblers and Brokers

All the assemblers and the one broker in our (admittedly limited) sample traded in kales, tomatoes or onions. Each traded in just one of these commodities. We do not know whether assemblers or brokers trading in grains or pulses would handle a greater number of crops.

The assemblers traded in their selected crop all over the country, even bringing supplies in from neighbouring countries, depending on where the crop was available. They mainly bought from small-scale farmers and sometimes depended on local agents whom they paid on commission to assist in locating farmers whose crop was ready for marketing. While at the Kisumu markets, they might also depend on market brokers to market their crop. In informal conversation, assemblers reported that they are not happy with these brokers, since they are expensive to maintain, but this seems to be a marketing bureaucracy that they cannot do away with.

Brokers have a greater role in the marketing of some crops (e.g. tomatoes) than others. We do not yet fully understand why this is. A possible, sympathetic explanation is that they manage the supply of products entering the market that are highly perishable and prone to glutting, helping suppliers to find buyers, but also discouraging excess supply. A less sympathetic view of brokers is that they constitute a barrier to suppliers wishing to sell directly to traders within the market, so as to extract their own commission.

Some informants at the markets suggested that brokers have their tactics to prevent farmers from selling directly to traders. For example, they will pose as traders and negotiate prices with uninitiated producers, then pretend the price is too high and leave (to search for the real trader). After some time the broker (who has been posing as a trader) will emerge in the company of another person (a “real” trader) who has been offered the farmer’s produce at a higher price. The farmer will be surprised to see the broker get the money from the real trader, deduct his commission and then hand the rest of the money to the farmer. At this point the farmer can only count his/her losses since s/he would have sold at that higher price had s/he been able to sell directly to the trader.

Lessons here for producers (and producer groups) would seem to be:

- Familiarity with the markets and establishing personal contacts with individual traders are both beneficial;
- It may be more difficult to do this for some products (e.g. tomatoes) than others.

2. Price Comparisons between Kisumu and Local Markets

To supplement the qualitative findings from the traders' survey, a comparison was made between prices prevailing in local markets and those recorded in Kibuye market in Kisumu. Daily price data were obtained for the latter market for the calendar years 2000 to 2004 from the District Agricultural Office in Kisumu⁹. These data represent wholesale selling prices (i.e. the price at which wholesalers would sell their produce to retailers). For comparative purposes, weekly visits were made to collect prices from three markets within the project area - Luanda, Siaya and Yala – during the 2003 and 2004 calendar years¹⁰. Both wholesale and retail prices were collected in 2003; just wholesale in 2004. The two prices move very closely together and the margin between them is small. Wholesale prices are understood to be close to what local producers would obtain if they took their produce to these markets to sell.

For the purposes of this report, we focus on a subset of crops for which we have analysed data: maize, beans, groundnuts, tomatoes and onions. We observe two main findings:

- Prices in local markets are highly volatile;
- Farmers can obtain higher prices in local markets (whilst the project areas remain generally food deficit) than they could from taking their produce to Kisumu.

Local Price Volatility

Table 12 shows summary statistics for prices for the selected crops in Siaya market during 2003 and 2004. Siaya market was chosen for the purposes of this table as its price movements (range between maximum and minimum) are generally intermediate between those observed in Yala and Luanda. Notable features of this table are that:

- Price volatility of groundnuts is generally low, whilst that of maize and beans is intermediate and that of tomatoes and onions is high;
- The degree to which prices vary within a year (e.g. maize 90% in 2003, 60% in 2004) is surprising, given that there are two harvests per year. A high proportion of total area cultivated in both long and short rains is devoted to maize and beans. However, the fact that many households are still not self-sufficient in these crops (let alone others) helps explain the volatility of prices. At the same time, high levels of maize price volatility may contribute to farmers focusing on production of maize at the expense of higher value produce;
- As with the Kisumu market prices presented in Appendix 1, there are few clear patterns of intra-seasonal price movement. It may thus be difficult for farmers to predict when the optimal time to sell a given crop will be;

⁹ Such data form the basis of the charts in Appendix 1. Prices are available for 27 crops, although only a minority of these have been analysed. Unfortunately, soyabean price data is not collected by the Ministry of Agriculture due to the low volumes of soya traded in most major markets in Kenya.

¹⁰ Due to staff availability, these markets were visited 50 times each in 2003 and 42 times in 2004. Prices were collected for 31 crops in 2003 and 20 of these crops again in 2004.

Table 12: Summary of Wholesale Price Movements in Siaya Market, 2003 and 2004, by Crop

	2003							2004						
	Mean Price	Max. Price	Month Observed	Min. Price	Month Observed	% Increase (Max/Min)	Mean Price	Max. Price	Month Observed	Min. Price	Month Observed	% Increase (Max/Min)		
Maize	13.9	21.1	July	11.1	Jan, Feb	90%	16.2	17.8	May	11.1	January	60%		
Groundnuts	83.1	94.4 ¹¹	May, June	55.6	August	70%	74.8	80	Jan, Sept	65	January	23%		
Beans (Rose Coco)	-						43.6	53.3	April, May, Sept	31.1	June, July	71%		
Beans (Ratong)	28.8	40	April, June	22.2	Jan, Feb, Mar, Apr, Aug	80%	34.1	48.9	September	26.7	Jan, Mar, June, July	83%		
Tomatoes	28.5	38.5	April	15.4	August	150%	30.8	35.4	Sept, Oct, Nov, Dec	15.4	January	130%		
Onions	32.9	45	Jan, Feb, Mar	20	August	125%	47.4	70	September	22.5	May	211%		

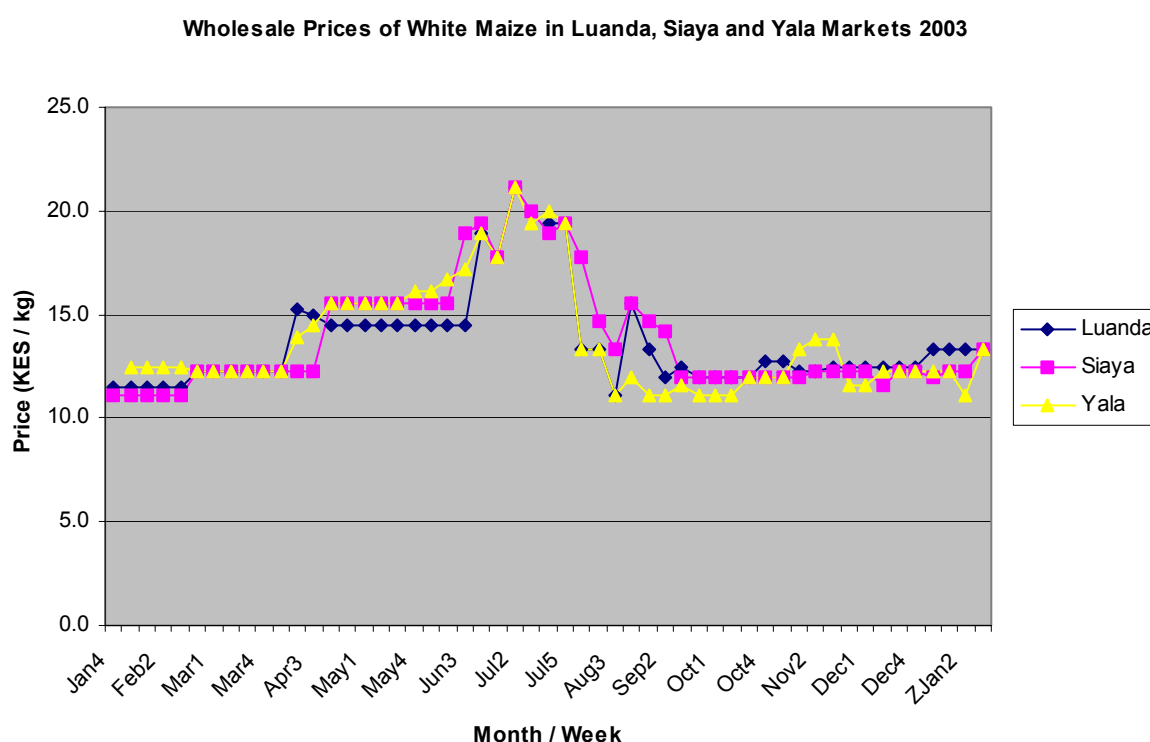
All prices are in current KES/kg

¹¹ This price was not observed in either Yala or Luanda market. As a result, their intra-seasonal price variability in 2003 was similar to that observed in Siaya in 2004.

- However, we do note that maize and bean prices are often low in January. Thus, it is unwise for farmers on the SCOBICS credit scheme to plan to repay their loans out of maize or beans, as repayment is required by mid-December (or could be January if a voucher scheme were to be introduced).

Figure 2, taking the example of maize in 2003, shows that local market prices are fairly well integrated. Prices across the markets move closely together and observed divergences may simply be due to the fact that the reported prices are from weekly market days, which are held on different days of the week in the different locations.

Figure 2: Integration of Local Market Prices



Comparing Local Market Prices with those in Kisumu

The interest of the project was to compare prices that producers could obtain from selling their produce in local markets with prices that they could obtain from selling the same produce in Kisumu markets. The hope at the outset of the analysis was that it would reveal greater market opportunities beyond the immediate local markets if only producers could organise themselves to take their produce to Kisumu. This did not turn out to be the case.

Several steps were required in order to obtain comparable prices:

- Kisumu wholesale buying prices (what Kisumu traders might pay their suppliers) had to be obtained from the wholesale selling price data collected from the Ministry of Agriculture. The difference between the two prices is the mark-up that traders make per bag of produce sold. In key informant interviews, traders were willing to provide this

information, which is reproduced in Appendix 2. It shows that the margins that traders obtain vary by crop and also through the year as market prices fluctuate. Similar figures were obtained from key informant interviews in April 2004 in major wholesale markets in Nairobi (Ukulima) and Eldoret.

- Once the wholesale buying price in Kisumu had been obtained, this was adjusted by the full costs of transporting produce from Siaya district to Kisumu. The cost calculations for this are shown in Appendix 3.
- The resulting “local export parity” price in Siaya district was then compared with the wholesale price obtaining in Siaya market (adjusted for the same cost of taking produce from the homestead to main road that is shown in Appendix 3). This comparison was conducted for every week that we had price data in both 2003 and 2004, i.e. around 90 times per crop.

A summary of the findings of these comparisons is presented in Table 13. The figures in this table are annual averages across the available weekly figures. They show that the “local export parity” price in Siaya district if selling to a wholesaler in Kisumu is consistently lower than the price that the same producer could obtain for selling the crop in Siaya market during the same week. Indeed, it can be anything between 14% (non-perishables) and 52% (perishables) lower.

Table 13: Comparison of Prices Available to Producers in Siaya if Selling to Kisumu or Locally

Crop	Net Price if Selling to Kisumu as Proportion of Local Market Price	
	2003	2004
Maize	84%	81%
Groundnuts	86%	84%
Wairimu Beans	68%	76%
Tomatoes	62%	58%
Onions	56%	48%

Appendix 4 illustrates the calculations performed in greater detail for the case of maize in 2003. Two main points should be noted from this appendix:

- The Siaya market price is higher than the wholesale buying price in Kisumu in 31/43 of the weeks for which the relevant data are available – even before the differential cost of taking produce to Kisumu is factored in. (In the case of some of the other crops, it is higher in all weeks);
- The margin earned by the Kisumu traders (the differential between the wholesale buying price and the wholesale selling price) is greater than the cost of transport from Siaya to Kisumu.

In other words, whilst lower transport costs might assist producers in Siaya, they do not provide the fundamental explanation as to why producers from Siaya who wished to sell to Kisumu would achieve lower prices there than they could obtain in Siaya.

Instead, the explanation is that Siaya and Vihiga districts are **food deficit areas**. Thus, the prices in local markets are “local import parity prices”, i.e. the *selling* price in a regional

centre such as Kisumu *plus* the cost of transporting produce from such a centre to Siaya or Vihiga. By contrast, a producer looking to sell from Siaya or Vihiga to Kisumu would obtain a “local export parity price”, i.e. the *buying* price in a regional centre such as Kisumu *minus* the cost of transporting produce from such a centre to Siaya or Vihiga.

Given that local producers have not yet established relationships with traders in Kisumu and the commonly expressed belief that traders in Kisumu seek to take advantage of inexperienced “outsiders” to the market, the only reason that a producer or group of producers from Siaya might take their produce to Kisumu under current circumstances is that they have more produce to sell than can be readily absorbed in local markets (where volumes traded can be quite small)¹².

Development Implications of Findings on Market Prices

However, if efforts to promote more intensive agricultural production in Siaya and Vihiga (for example, through the SCOBICS credit scheme and associated activities) bear fruit and lead to a shift in the status of these districts to being surplus areas, not only will surplus producers have to accept prices that are 20% (maize) to 40% (tomatoes) or more lower in real terms than current prices in local markets, but prices in local markets will themselves fall by 20-40% in real terms over time.

This has two major implications:

- Firstly, producers who invest in more intensive production will need to achieve productivity increases in excess of 30% if the returns from higher production are not simply to be eroded by falling prices¹³. Price falls could discourage some from making the necessary investments;
- Secondly, even if it is only the top half or even tercile of farmers who invest in intensification, poorer households (almost always net food deficit) will benefit from significantly lower food prices (20%+ in real terms) as long as the districts as a whole become net food surplus. Thus, whilst it is desirable to assist as many households as possible to intensify their production activities, poor households may benefit even if they are unable to participate directly in intensification.

Suggestions for Further Work

We suggest three areas of further work that could arise from the findings reported here:

Traders’ Mark-ups

The wholesalers’ mark-ups reported in Appendix 2 (11-29% of the buying price of the produce) seem high. As noted above, they are greater than the cost of transporting produce from Siaya to Kisumu. Research into the composition of (and possible justification for) these

¹² Soyabeans is perhaps an extreme example, but traders in Luanda, Siaya and Yala markets never look to purchase more than a bag of soyabean at a time.

¹³ As is often the case, “first movers” may benefit from a period when their productivity has increased, but they are still able to sell into local markets at current local prices. However, “followers” will not capture these benefits.

margins is beyond the scope of the current project. However, it would be worth exploring whether they:

- Are necessary to provide a living income for traders' families given the volumes of produce that an individual trader deals in and the costs and risks of sustaining a trading business;
- Reflect a shortage of capital for informal trading operations;
- Include a significant "super-normal" profit element arising from cartel-like practices, whereby traders within a market control access to the market for both suppliers and potential new entrants.

Visiting Markets

As and when producers in Siaya or Vihiga begin to generate crop surpluses that they are unable to dispose of readily in local markets, it is proposed that action research is undertaken whereby researchers document the experience of producers taking their produce to Kisumu markets. Will they receive a fair price for their produce or will they be taken advantage of by unscrupulous traders or brokers? To encourage producers to participate in such action research, researchers could guarantee a "top up" to their sales proceeds such that they end up no worse off from taking their produce to Kisumu than they would have been by selling locally (perhaps minus differential transport costs).

Research could also compare the experience of producers taking their produce unannounced to Kisumu with others for whom researchers had facilitated a contact with a named market trader.

Other Market Outlets

The findings from the Kisumu wholesale markets are a disappointment in the sense that no attractive new market opportunities were discovered for producers from Siaya and Vihiga. Moreover, they appear to cast doubt on the price competitiveness of produce from these areas, given that producers feel that existing prices in local markets are too low!

The project has also made informal contact with three supermarkets in Kisumu with the specific objective of seeking additional markets for soyabeans. Two contacts were made with each of the following stores, but again no clear market openings were discovered:

Ukwala supermarket indicated that they could not purchase soyabeans from producers at the time of the second contact, although a look at the shelves and further inquiry suggested that they were in short supply of soyabeans. Whenever they do make spot purchases from producers, their pricing practice is to let the farmer quote his/her selling price and then negotiate. However, the findings from the wholesale markets suggest that, in the case of producers from Siaya and Vihiga, they might not be able to agree on a favourable price for both of them.

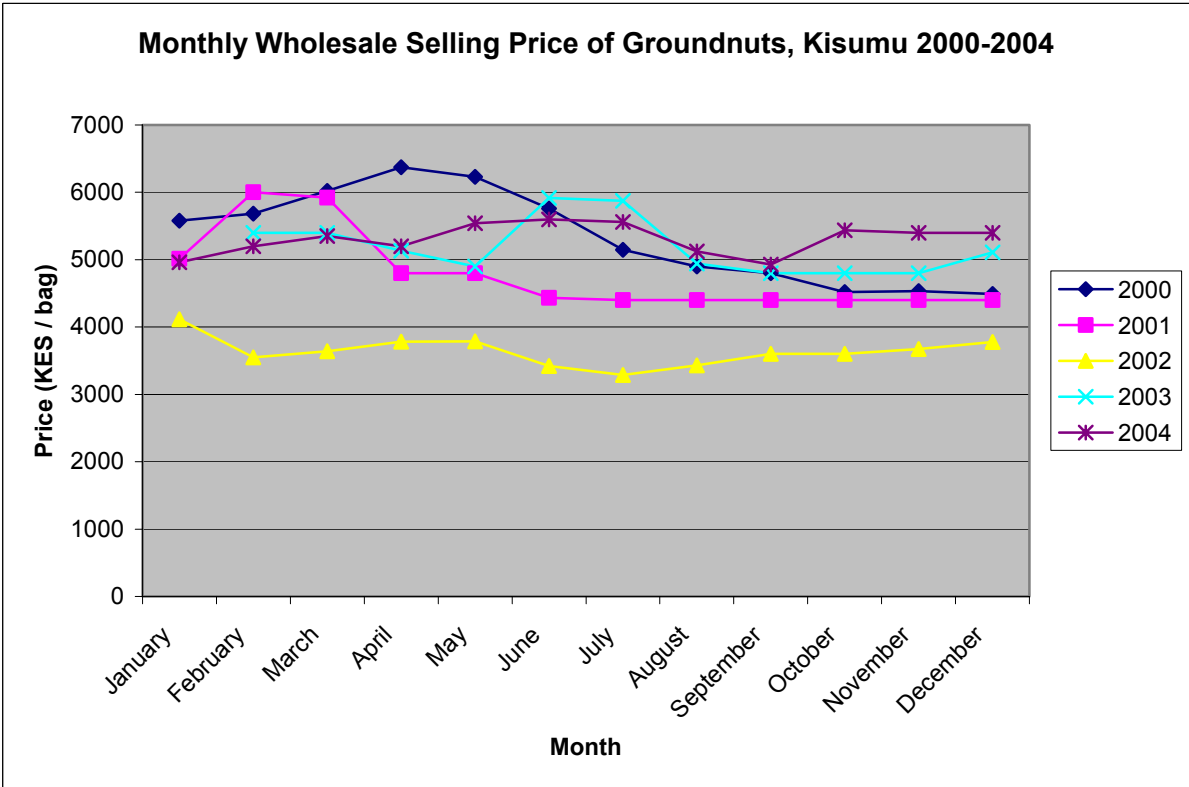
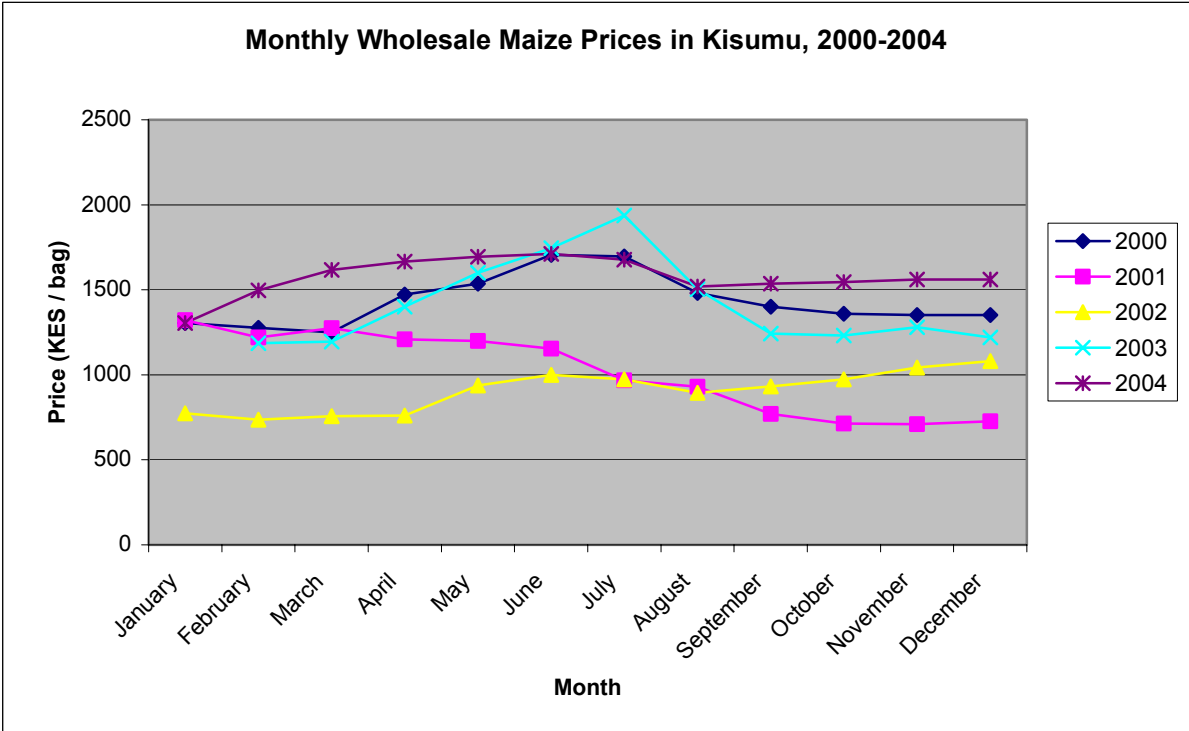
Similarly, **Foamatt** supermarket expressed no interest in buying soyabeans at the time of the second contact. Whenever a farmer has anything to sell, he states his selling price and then they compromise for a better price. The supermarket also did not have soybeans on display, a

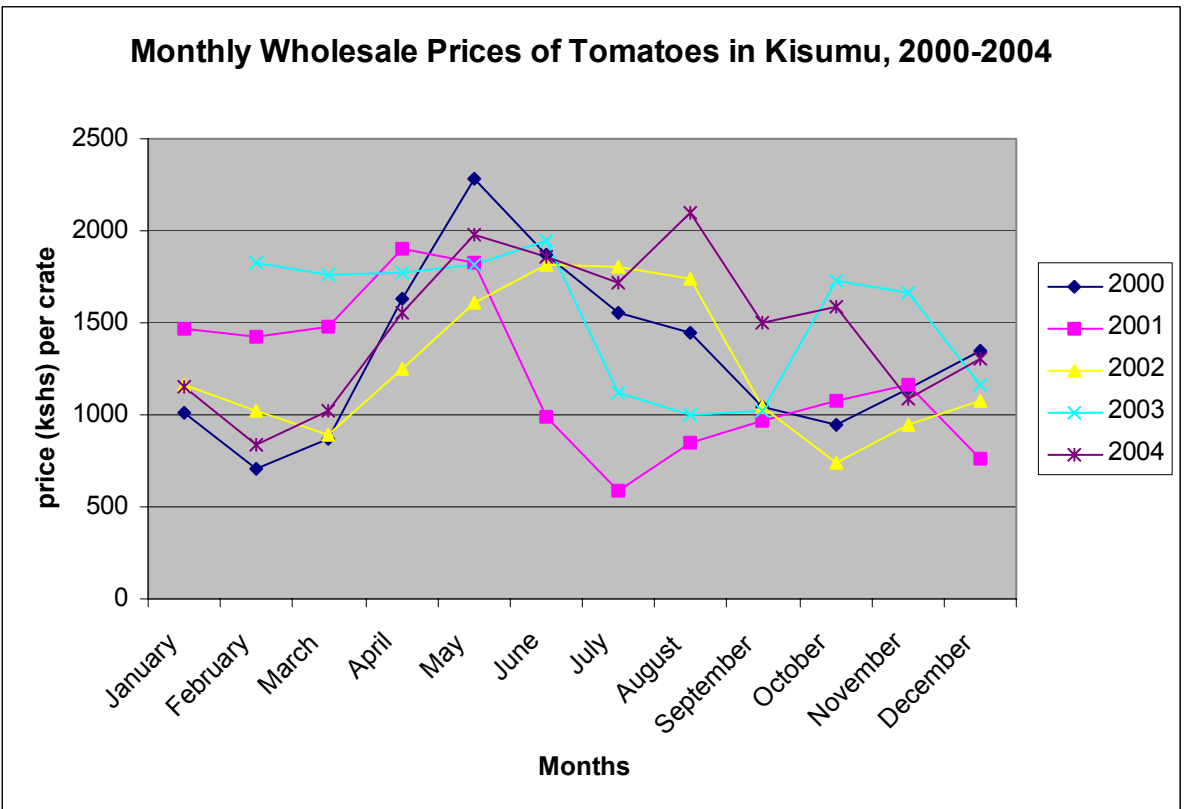
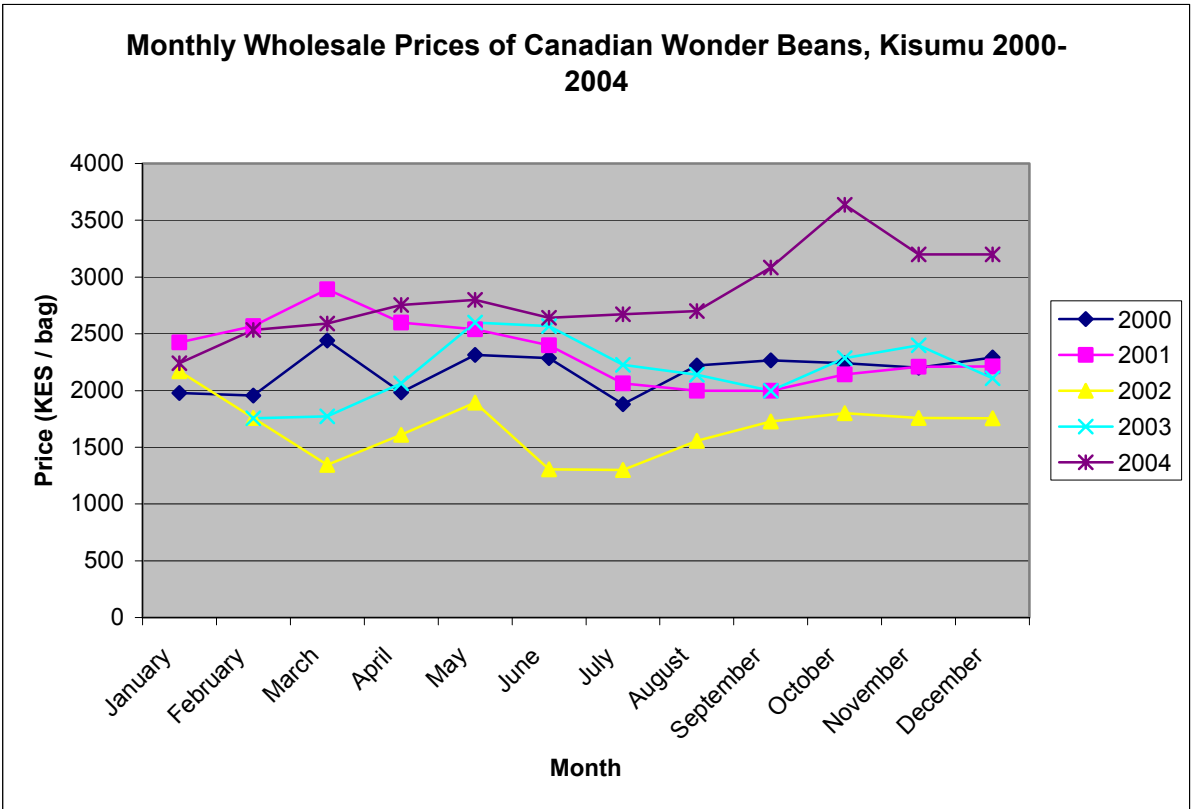
possible indication of short supply (or of lack of demand?). They expressed interest in buying other farm produce, such as greengrams, sunflower and Asian beans.

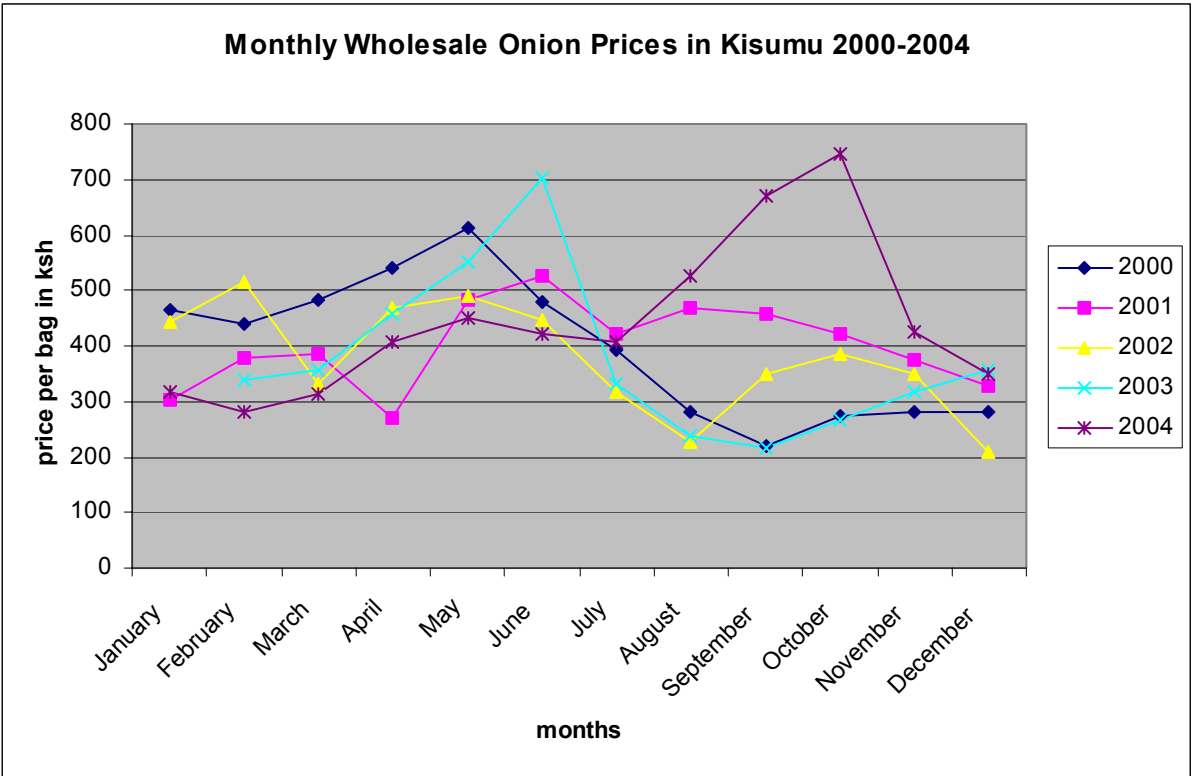
Finally, **Yatin** supermarket said that they have embarked on buying only packed produce, both to reduce packaging costs and also to ensure high hygienic standards. This they said was because of infestation of most cereals by pests leading to high wastage and losses.

Further investigation of formal marketing channels is desirable if producers in Siaya and Vihiga are to be encouraged to diversify production beyond the maize and beans on which they currently focus. It may be that a price drop of 20%+ is unavoidable if a cohort of producers (and the districts in general) are to shift to production of regular agricultural surpluses, but it would be good to investigate all options before settling upon this conclusion. Furthermore, investigation of additional marketing channels for soyabean is critical if soyabean production is to continue to be encouraged in Siaya and Vihiga.

Appendix 1: Wholesale Prices in Kibuye Market 2000-2003, by Crop







Appendix 2: Wholesalers' Margins in Kibuye Market 2003, by Crop

Maize (KShs / bag)

Month	Wholesale Buying Price	Wholesale Selling Price	Trader's Margin	Retail Price
Feb-03	987	1187	200	1227
Mar-03	996	1196	200	1236
Apr-03	1150	1400	250	1460
May-03	1350	1600	250	1660
Jun-03	1395	1745	350	1825
Jul-03	1586	1936	350	2016
Aug-03	1272	1522	250	1582
Sep-03	1064	1264	200	1304
Oct-03	1030	1230	200	1270
Nov-03	1080	1280	200	1320
Dec-03	1019	1219	200	1259

Margin as % of wholesale buying price: 19-25%

Canadian Wonder, Wairimu, and Ratong Beans (KShs / bag)

Month	Wholesale Buying Price	Wholesale Selling Price	Trader's Margin	Retail Price
Feb-03	1555	1755	200	1955
Mar-03	1573	1773	200	1973
Apr-03	1915	2165	250	2359
May-03	2036	2286	250	2477
Jun-03	2100	2400	300	2700
Jul-03	1859	2109	250	2313
Aug-03	1750	2000	250	2023
Sep-03	2268	2568	300	2868
Oct-03	2300	2600	300	2900
Nov-03	1977	2227	300	2415
Dec-03	1813	2063	250	2250

Note: these three varieties are the same price, although there is a preference for Canadian Wonder

Margin as % of wholesale buying price: 12-15%

Rose Coco, Kikuyu Pocho and Njano Beans (KShs / bag)

Month	Wholesale Buying Price	Wholesale Selling Price	Trader's Margin	Retail Price
Feb-03	1690	1890	200	2090
Mar-03	1834	2034	200	2234
Apr-03	2666	2941	275	3241
May-03	3050	3400	350	3700
Jun-03	3029	3379	350	3679
Jul-03	2595	2945	400	3245
Aug-03	2290	2565	275	2815
Sep-03	2125	2400	275	2650
Oct-03	2220	2495	275	2745
Nov-03	2325	2600	275	2850
Dec-03	2452	2727	275	2977

Margin as % of wholesale buying price: 11-15%

Groundnuts (KShs / bag)

Month	Wholesale Buying Price	Wholesale Selling Price	Trader's Margin	Retail Price
Feb-03	4675	5400	725	5850
Mar-03	4675	5400	725	5850
Apr-03	4408	5133	725	5583
May-03	4250	4900	650	5300
Jun-03	5116	5916	800	6416
Jul-03	5073	5873	800	6373
Aug-03	4319	4969	650	5369
Sep-03	4150	4800	650	5200
Oct-03	4150	4800	650	5200
Nov-03	4150	4800	650	5200
Dec-03	4384	5109	725	5559

Margin as % of wholesale buying price: 15-17%

Tomatoes (KShs / box)

Month	Wholesale Buying Price	Wholesale Selling Price	Trader's Margin	Retail Price
Feb 03	1522	1822	300	2122
Mar 03	1460	1760	300	2060
April 03	1467	1767	300	2067
May 03	1515	1815	300	2115
June 03	1647	1947	300	2247
July 03	868	1118	250	1368
Aug 03	776	976	200	1176
Sep 03	845	1045	200	1245
Oct 03	1429	1729	300	2029
Nov 03	1361	1661	300	1961
Dec 03	914	1164	250	1414

Margin as % of wholesale buying price: 18-29%

Appendix 3: Transport Costs from Siaya District to Kisumu

Grains

The following figures are based on 15 * 90 kg bags

Cost Item	Calculation	1 Ton pick up	Public transport (matatu)
Transport to the main road	Kshs 25*15		375
Loading	Kshs 20*15		300
Transport to Kisumu	KShs 90*15	1700	1350
Transport from terminus to market (Handcart)	KShs 20*15		300
Matatu fare for seller			200
TOTAL		1700	2525
Total per kg (Kshs)		1.3	1.9

Note: Hire of 1 ton pick-up includes loading and unloading and transport from the homestead to market; matatu only takes produce from the side of the main road in Siaya to the bus terminus in Kisumu.

Vegetables

The following figures are based on 20 * 60 kg boxes

Cost Item	Calculation	1 Ton pick up	Public transport (matatu)
Transport to the main road	Kshs 20*20		400
Loading	Kshs 10*20		200
Transport to Kisumu	KShs 30*20	1700	600
Transport from terminus to market (Handcart)	KShs 20*20		400
Matatu fare for seller			200
TOTAL		1700	1800
Total per kg (Kshs)		1.4	1.5

Appendix 4: Comparing Prices Obtainable if Selling to Siaya and Kisumu Markets – The Case of Maize in 2003

Week	Kisumu Wholesale Selling Price (bag)	Kisumu Wholesale Buying Price (bag)	Kisumu Wholesale Buying Price (kg)	Siaya Wholesale Price (kg)	Difference	Transport Differential	Final Margin
Feb4	1200	1000	11.1	12.2	-1.1	1.6	-2.7
Mar1	1160	960	10.7	12.2	-1.6	1.6	-3.2
Mar2	1200	1000	11.1	12.2	-1.1	1.6	-2.7
Mar4	1280	1080	12.0	12.2	-0.2	1.6	-1.8
Apr1	1280	1080	12.0	12.2	-0.2	1.6	-1.8
Apr2	1248	1048	11.6	13.9	-2.2	1.6	-3.9
Apr3	1420	1170	13.0	14.4	-1.4	1.6	-3.1
Apr4	1520	1270	14.1	15.6	-1.4	1.6	-3.1
Apr5	1547	1297	14.4	15.6	-1.1	1.6	-2.8
May1	1600	1350	15.0	15.6	-0.6	1.6	-2.2
May2	1600	1350	15.0	15.6	-0.6	1.6	-2.2
May3	1600	1350	15.0	15.6	-0.6	1.6	-2.2
May4	1600	1350	15.0	16.1	-1.1	1.6	-2.7
June1	1600	1250	13.9	16.1	-2.2	1.6	-3.8
June2	1648	1398	15.5	16.7	-1.1	1.6	-2.8
June3	1704	1354	15.0	17.2	-2.2	1.6	-3.8
June4	2000	1650	18.3	18.9	-0.6	1.6	-2.2
July1	2000	1650	18.3	17.8	0.6	1.6	-1.1
July2	1920	1570	17.4	21.1	-3.7	1.6	-5.3
July3	2000	1650	18.3	19.4	-1.1	1.6	-2.7
July4	1976	1626	18.1	20.0	-1.9	1.6	-3.6
July5	1800	1450	16.1	19.4	-3.3	1.6	-5.0
Aug1	1647	1397	15.5	13.3	2.2	1.6	0.6
Aug2	1520	1270	14.1	13.3	0.8	1.6	-0.8
Aug3	1400	1150	12.8	11.1	1.7	1.6	0.0
Aug4	1400	1150	12.8	12.0	0.8	1.6	-0.8
Sept1	1400	1150	12.8	11.1	1.7	1.6	0.0
Sept2	1280	1080	12.0	11.1	0.9	1.6	-0.7
Sept3	1200	1000	11.1	11.6	-0.4	1.6	-2.1
Sept4	1200	1000	11.1	11.1	0.0	1.6	-1.6
Oct1	1200	1000	11.1	11.1	0.0	1.6	-1.6
Oct2	1200	1000	11.1	11.1	0.0	1.6	-1.6
Oct3	1200	1000	11.1	12.0	-0.9	1.6	-2.5
Oct4	1260	1060	11.8	12.0	-0.2	1.6	-1.8
Oct5	1280	1080	12.0	12.0	0.0	1.6	-1.6
Nov1	1280	1080	12.0	13.3	-1.3	1.6	-3.0
Nov2	1280	1080	12.0	13.8	-1.8	1.6	-3.4
Nov3	1280	1080	12.0	13.8	-1.8	1.6	-3.4
Nov4	1280	1080	12.0	11.6	0.4	1.6	-1.2
Dec1	1216	1016	11.3	11.6	-0.3	1.6	-1.9
Dec2	1240	1040	11.6	12.2	-0.7	1.6	-2.3
Dec3	1200	1000	11.1	12.2	-1.1	1.6	-2.7
Dec4	1225	1025	11.4	12.2	-0.8	1.6	-2.5
MEAN	1444	1201	13.3	14.0	-0.7	1.6	-2.3

Note: all prices are expressed in KShs.