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The performance of potato markets in South Western Uganda

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Market-oriented farmers play a significant role in the rural agricultural sector in Uganda. However, these trader-farmers are often disadvantaged by limited access to information, services, appropriate technology and capital. These factors restrict their capacity to effectively participate in the marketing of their produce. In many instances farmers, including those in the potato innovation platforms (IPs) of Southwestern (SW) Uganda are relegated to the lower end of value chains where they are price takers with little bargaining power. Therefore they end up earning little margins while giant chain actors along the chain like middlemen have the power to determine prices paid by the final consumer and thus extract huge marketing margins. This study aimed at identifying marketing channels of potatoes from the farm to consumption; identifying marketing constraints faced by farmers and traders in the potato marketing chain in SW Uganda; and assessing the marketing performance of potato markets. Data were collected in July 2010 from 291 respondents in 2 IPs in SW Uganda. Descriptive statistics were used to characterise potato traders and farmers while Gross Margin Analysis was used to determine the market performance for different potato varieties. Purchase prices varied by district between UgSh350/kg for Rwashaki variety and UgSh531/kg for Kinigi variety. Sutama and Victoria varieties had the highest marketing margins in Kabale and Kisoro districts respectively.

Key words: Marketing channels, marketing chains, marketing margin analysis, innovation platform, ware potato.

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INTRODUCTION

In Uganda, potatoes[1] are grown in the highland areas (1,500 - 3,000 masl). The major production areas are Kabale and Kisoro districts in SW Uganda which produce the bulk of the crop. Kabale alone produces between 50 and 60% of the total annual ware potatoes[2] consumed in Uganda. The 2 districts are followed in production by Mbale and Kapchorwa on the slopes of Mount Elgon in Eastern Uganda. However, production of potatoes has

[1] The term potato is widely used to refer to the solanum potato, differentiating it from sweet potato the tuber

[2] Ware potatoes are those potatoes that are grown for human consumption as fresh or processed products.

now spread to other districts of Uganda (Ferris et al., 2002).

Potatoes are considered a source of both food and income, thus development of the potato sector can improve livelihoods of rural dwellers in Uganda in the context of urbanization and market integration (Horton, 2008). Urbanization, increasing incomes, market liberalization and direct foreign investment are causing changes in the food marketing systems (Kennedy et al., 2004). In addition, increased participation of women in the labour force has led to transition from traditional staple foods to convenience foods. The changes in the marketing of food products have thus led to a shift from informal to formal market channels.

Formal marketing channels are characterized by standardized branded products, use of efficient, integrated marketing, logistical, and financing processes. In addition, the terms of production, processing, procurement, payment and product type are set by buyers and not producers. This is due to the demand by urban consumers who require high quality products at consistent prices throughout the year. Supermarkets are becoming significant players in vertically integrated food marketing systems. Other market players include hotels and fast-food outlets. These trends confront smallholder farmers with market challenges and opportunities. As a result of such trends, the livelihoods of smallholder farmers are being influenced by the demands of urban consumers, market intermediaries, and agricultural (food) industries (Horton, 2008).

Often smallholder farmers have limited access to marketing information, services, technology and capital. This lack of access restricts the capacity of the smallholder farmers to participate efficiently in the marketing of their produce (Horton, 2008). Consumers need standardized products, yet these farmers have little knowledge of consumers demand and hence cannot produce what the market needs. Even if they produce what the market needs, they may have little information of reliable and profitable markets. In such circumstances, there is potential exploitation of farmers by the middlemen and wholesalers in the chain because the market value of the potatoes is subject to very limited negotiation, given that almost all farmers sell to middlemen at the farm gate. The exploitation is further exacerbated by absence of standardized packing and weighing scales (Hoffler and Maingi, 2005). The growing demand for potatoes in urban areas could therefore contribute positively to the development of the rural areas and the overall economy of Uganda if there is 2 way efficient flow of market information.

High marketing margins exist either because of monopolistic elements in the marketing chain or because the real costs of marketing are high. High marketing costs may be due to poor marketing services and infrastructure. Thus, improving the marketing services such as storage, transportation, and processing can lead to improvement of rural income by reducing marketing costs (Fuglie, 1993). Farmer collective action has also been proposed as a way of improving the welfare of smallholder farmers in the emerging high-value agricultural markets (Horton, 2008) as it can improve the bargaining power.

Production of potatoes in Uganda is basically for subsistence use (mainly household consumption) with limited surplus for sale in order to earn income despite enormous opportunities for national, regional and global trade. There is limited cross-border trade with Rwanda, but this only occurs to meet the very short term potato supply shortages (Okoboi, 2001; Ferris et al., 2002). The potato value chain is not well organized or integrated because producers, transporters, marketers, wholesalers and retailers are fragmented. This lack of organization is one factor that isolates the potato sub-sector from regional and global markets. There are few initiatives for collective action in potato production and marketing and those existing are in their infancy and widely scattered (Ferris et al., 2002) leading to limited or no integration of stakeholders along the potato value chain.

With increasing population and urbanization and thus growing demand coupled with the increase in fast food restaurants and supermarkets, the potato sub-sector in Uganda is bound to expand. This was noted by Ferris et al. (2002) who estimated the demand for potatoes to be approximately 850,000 to 1,000,000MT per year by 2015. Production volumes increased from 478,000MT in 2000 to 695,000MT in 2010 (FAOSTAT, 2012). This is an opportunity for potato farmers to increase production and productivity of improved and suitable potato varieties, which will in turn increase their income and improve food security and livelihood.

Given the challenges and opportunities that smallholder farmers face in Uganda, it is important to identify and compare marketing challenges as faced by potato farmers and traders in selected Innovation Platforms[3] in addition to estimating the marketing margins in the potato trade. An important contribution of this paper is the comparative assessment of constraints at different parts of the potato market chain hoping to identify common constraints and possible solutions and concerns along the length of the potato marketing chain.

The objectives of this study were to: (a) Characterize potato farmers and traders in selected Innovation Platforms (IPs) on the basis of potato volumes and varieties traded, type of trading business, sources of financing, customer base and pricing strategies;

[3]An Innovation Platform is a tool for bringing together multiple stakeholders for visioning, planning and implementing or application of new ideas, practices, services which arise through interaction, creativity, insight, and empowerment. The aim of the Innovation Platform is to improve the existing situation /conditions around a common interest/challenge and thereby bring about a desired change. It is a forum for sharing and creation of new knowledge gaps relevant for planning explicit systemic innovation agricultural development strategies (Tenywa et al., 2011).

Table 1. Number of Respondents.

District	Traders	Farmers
Kisoro	37	51
Kabale	103	100
Total	140	151

(b) Identify and compare marketing constraints across different actors in the potato trade; and (c) Assess the marketing margins and performance of potato varieties traded in the area (d) Identify and propose solutions for improving performance in potato marketing.

Conceptual framework

Farmers seek to maximise profits from the sale of their agricultural produce by exploiting the margin or the difference between what the consumer pays and the amount producers receive. Margins represent the price charged for one or a collection of marketing services. Along the market chain, margins reflect the value added or the price of all utility adding activities at each level of the market chain. The concept of marketing margins has been defined variously by a number of researchers (FEWS NET 2009, Arene, 2003; Minot and Goletti, 2001; Abbott and Makeham, 1986) all of whom contend that marketing margins are an important tool in analysing the performance of marketing systems. They measure the portion of the consumer's food expenditure that goes to food marketing. Marketing costs and profit margins which make up marketing margins can be both indicators of efficiency or inefficiency of marketing systems and act as incentives or disincentives in business sustainability (Achike and Anzaku, 2010). The concept of margin analysis offers a chance to understand market conditions made by different decision makers in the market.

When looking at the concept of margins, it is imperative to consider the flow of agricultural commodities along the marketing chain. This angle enables the consideration of the relationship between and amongst the different players and the share of the total margin claimed at each stage. This enables the determination of margins at various stages given that margins are likely to differ for different stages. Therefore in order to make a complete analysis of marketing margins, one needs to analyse the complete flow of goods. This can be achieved through use of market-behavior equations (Carambas, 2005). For example Smith (1992) elaborates the concept of costs and margins using the farmers' share of retail price thus:

$$\text{Farmers' share (\%)} = \frac{\text{Farmgate price}}{\text{Retail price}} \times 100$$

And further uses the above to obtain the Total Gross Margin as:

$$\text{Total gross margin (\%)} = \frac{\text{Retail price} - \text{Farmgate price}}{\text{Retail price}} \text{ X } 100$$

The Ugandan potato marketing chain has various actors including collectors, retailers, transporters, wholesalers and farmers. In this study we adopt the Gross Marketing Margin model as suggested by Mendoza and Rosegrant (1995) to analyse the margins of traders because of their central position in the potato marketing chain.

$$\text{Marketing margin (\%)} = \frac{\text{Selling price} - \text{Supply price}}{\text{Selling price}} \text{ X } 100$$

Data and methods

Study area

The study was conducted in Kabale and Kisoro districts which are situated in South-Western Uganda. The districts are currently the leading potato producers in Uganda. The 2 districts have various types of traders in the potato market chain and thus were purposively sampled for the study. Both districts were part of the Sub-Saharan Africa Challenge Program (SSA-CP) as pilot sites where an Integrated Agricultural Research for Development (IAR4D) initiative was conducted. The road ne2rk in these districts is all weather and thus transporting potatoes to urban areas for marketing is feasible all year round.

Data collection

Data were collected in July 2010 using pre-tested structured questionnaires. Information collected included household characteristics, communication equipment, sources of business finance, type of traders and their customers, types of potato varieties traded, quality characteristics considered, pricing strategy, produce grading and mode of transport. Direct one-on-one interview sessions were held with 291 randomly selected respondents, including 140 potato traders and 151 potato farmers in 48 villages in 3 sub counties (Table 1).

Data analysis

Descriptive statistics (frequencies and percentages) were generated from the data and used to characterize potato farmers and traders in the IPs and to identify and compare marketing constraints across different actors in the potato trade. The analyses were conducted using a standard Statistical Package for Social Scientists (SPSS) version 17.0.

Empirical model

Gross marketing margins made by the traders were calculated for each potato variety as follows:

$$V_1 = \sum_{i-1}^{s} (Q_{1i} * P_{1i}) \quad (1)$$

Table 2. Demographic characteristics of traders and farmers in Kabale and Kisoro.

Variable	Response	Overall sample		Kabale		Kisoro	
		Farmers (%)	Traders (%)	Farmers (%)	Traders (%)	Farmers (%)	Traders (%)
Gender of Respondent	Male	64.9	60.7	63	50.5	68.6	89.2
	Female	35.1	39.3	37	49.5	31.4	10.8
Marital status	Married	78.1	85.0	78	82.5	78.4	91.9
	Widowed	13.3	3.6	11	4.9	17.7	0
	Single/divorced/separated	8.6	11.4	11	12.6	3.9	8.1
Age group	18-30	17.9	23.3	22	23.0	10	24.0
	31-50	48.3	62.2	49	63.0	47	60.0
	51+	33.7	14.5	29	14.0	43	16.0
Years of schooling	0-7	73.2	76.4	73.3	78.6	73	70.3
	8-14	18.2	21.4	19.8	20.4	15	24.3
	> 14	8.6	2.2	6.9	1.0	12	5.4
Experience in trading (Years)	0-10		69.2		65		81
	11-20		22.2		26.3		10.8
	21-30		8.6		8.7		8.2

Source: Survey data, 2010.

Where; Q_{1i} is the average quantity (kgs) of potatoes supplied to the i^{th} trader, P_{1i} is average purchase price (UShs) paid by the i^{th} trader to the farmers and V_1 is the average value of potatoes at the farm gate. To determine the average quantity of potatoes reaching market, Q_{2i}:

$$Q_{2i} = Q_{1i} - Q_{Li} \text{, and } Q_{Li} = Q_{1i} * P_L . \quad (2)$$

Where P_L is the percentage loss, Q_{Li} is the quantity lost by the i^{th} trader before selling potatoes (obtained by multiplying quantity supplied by percentage loss).

In order to determine the average value of potatoes after adjusting for the losses, V_2 :

$$V_2 = \sum_{i-1}^{s} (Q_{2i} * P_{2i}) \quad (3)$$

Where P_{2i} is the average selling price by each trader in the market. Thus:

$$GMM = (\frac{V_2 - V_1}{V_2}) * 100 \quad (4)$$

Where GMM is the gross marketing margin. It is the proportion of revenue that traders retain as gross profit, expressed as a percentage.

RESULTS AND DISCUSSION

Respondent characteristics

The majority of the respondents in both districts were males (for traders, 50.5% in Kabale and 89.2% in Kisoro, and for farmers, 63% in Kabale and 68.6% in Kisoro (Table 2). In Kabale about equal numbers of males and females were involved in potato trading reflecting equal proportion of gender types in potato production and trade further reflecting the crop's importance as a source of livelihood for people in this area. In both districts, the majority of respondents in the selected sample were in the 31 to 50 year age-group. In Kabale, 63% of the traders and 49% of the farmers were in this age-group while for Kisoro, this age group formed 47% of the trader sub-sample and 60% of the farmer sub-sample (Table 2). The majority of respondents in both districts had only attained primary level of formal education or no education at all, that is from 0 to 7 years of schooling. Few traders and farmers had attained higher than secondary level education. Most traders in both districts had up to 10 years of trading experience. Overall retailers formed over half the trader sample with proportions as shown in Table 3.

The second most common type of trade was the wholesale business as indicated by the percentages of 32.9% for the overall sample (and 31 and 38% in Kabale and Kisoro, respectively). Traders did not significantly

Table 3. Types of potato traders and sources of income.

Variable	Types of traders	Overall sample (%) N = 140	Kabale (%) N = 103	Kisoro (%) N = 37
Types of traders	Wholesaler	32.9	31	38
	Retailer	56.2	61	43
	Transporters	2.2	3	0
	Collectors	6.4	3	16
	Agents/Brokers	2.3	2	3
Sources of income	Sale of crops	36.4	36.9	35.1
	Sale of livestock	1.4	1.9	0.0
	Salary	0.7	1.0	0.0
	Wages	2.1	1.9	2.7
	Trading business	57.9	56.3	62.2
	Farmers groups (proceeds from group activities)	0.7	1.0	0.0
	Loans	0.7	1.0	0.0

Source: Survey data, 2010. [1] According to Ferris et al. (2002), the potato value chain contains a number of participants/traders. They are Wholesalers-these are traders who get their supplies from travelling traders. They rarely buy from farmers; Retailers-these range from supermarkets to roadside sellers and buy about 1-5 bags from the wholesalers and sell them in heaps of various sizes; Transporters (at times called travelling traders)- are traders who either own trucks or hire them for buying potatoes from farmers or village traders and then transport and sell to wholesalers and urban traders in other district markets; Collectors- these are village traders who know farmers in their village and surrounding areas and make it their business to know which farmers are ready to harvest. They are in contact with transporters, wholesale buyers and financial service providers; Agents/Brokers- are one of the prominent participants in the potato marketing chain and are a contact for travelling traders and wholesale buyers to farmers, as well as the key link between farmers and traders.

process the product either in order to lengthen the shelf life or add value to the final product. As such few other trader types are observed in both districts. These findings suggest that the potato marketing system is still in its infancy and a lot needs to be done in order to add value in the market chain. Respondents reported several sources of income, the commonest being income from trading businesses.

In both districts, traders also obtained income from growing and selling their own crops, hence the potential for expanding potato production. Other sources of income for traders were from sale of livestock, and from loans, wages or salaries. This broad range of activities reflects the desires of the traders to diversify their income sources in order to manage risks. However, this also may imply that these traders and farmers may not be able to commit all their time to one activity which may hinder intensification of potato production and marketing.

Quality characteristics in potato trade

Traders look for a number of quality characteristics and attributes when buying potatoes. The study revealed that traders in both Kisoro and Kabale preferred large-sized potatoes because of the suitability for making chips (French fries) (Table 4) and hence can penetrate the market easily. Traders had little preference for other potato characteristics. This implies those characteristics are of less importance to determine marketing of potatoes. Therefore any improvement in the potato production for attracting consumers/market should first consider size. When the marketing system develops further and becomes more integrated, information flow should be greatly enhanced such that the producers get feedback about the consumer desires and hence production becomes demand driven. This demand responsive production would be a great stride towards more effective resource use in the marketing system. The most important criteria for grading potato were variety, size and colour as determined by consumer preferences in the market. Overall 73.5% of the traders considered variety as the most important grading criterion followed by size (66.4%) and color (48.6%). In both districts this order of grading preference was maintained. However, there was an additional important criterion - cleanliness, for Kisoro district where it scored 32.4% as opposed to Kabale district where it scored 1.9%. These grading standards are indications of moment towards a well functioning marketing system. However, it was not clear whether consumers were willing to pay premium prices for the best quality and grades.

Types of potato markets, pricing strategies and product transportation

Traders operate in a number of markets (Table 5). Shops constructed in the trading centers, stalls constructed in markets and trading spaces in open markets formed the

Table 4. Characteristics of potatoes used for purchase decisions and grading criteria.

Variable		Overall sample (%)	Kabale (%)	Kisoro (%)
Characteristics	Large size	34.3	35	32.4
	Small size	1.4	1	2.7
	Round shape	2.8	2.9	2.7
	Good for chips	8.6	7.8	10.8
	Good for crisps	0.7	1	0
	Good for mashing	1.4	1.9	0
	Kind of customer	2.8	2.9	2.7
	Maturity	3.6	4.9	0
Grading criteria	Variety	73.5	71.8	78.4
	Color	48.6	45.6	56.8
	Size	66.4	62.1	78.4
	Taste	7.9	10.7	0
	Origin	5.0	2.9	10.8
	Cleanliness	10.0	1.9	32.4

Source: Survey data, 2010.

Table 5. Traders by type of potato market by District*.

Variable	Stall constructed in the market	Overall sample (%)	Kabale (%)	Kisoro (%)
		20.7	**24.3**	**10.8**
Type of market	Shop constructed in the trading center	50.0	52.4	43.2
	Space in open market	28.5	25.2	37.8
	Roadside market	17.9	20.4	10.8
	Selling to stores	4.3	0.0	16.2
	Others (Mobile (wheelbarrow/bike) market, home market)	10.1	12.7	2.7
Pricing strategy	Cost – plus	43.5	41.7	48.6
	Target profit	22.1	22.3	21.6
	Going rate	25.0	24	27
	Negotiation	7.9	6.8	10.8

* Multiple responses. Source: Survey data (2010).

commonest points for marketing produce. In Kabale, the majority of traders (52.4%) operated from shops constructed in the trading centers, followed by open spaces in markets (25.2%), stalls in markets (24.3%) and road side markets (20.4%). In Kisoro the majority of traders interviewed (37.8%) operated from shops constructed in the trading centers (40.5%) and in open spaces within the market.

Traders had various ways of determining prices of their produce (Table 5). Overall, the major pricing strategy in both districts was the cost plus strategy (43.5%) followed by going rate at 25% and target profit (22.1%). Negotiation was not a major pricing strategy. The ordering of importance of these pricing strategies is not different across the 2 districts. The cost-plus strategy is important given that traders incur costs during their trading activities and simply look to meeting the costs of trading without necessarily making profit. In addition, the fact that about a quarter of traders priced at the going rate confirms why negotiation was not a major pricing strategy.

Potato varieties traded in Kisoro and Kabale Districts

Rwangume was the most traded (47.6%) potato variety in Kabale followed by Kinigi (40.8%), and Rwashaki (18.4%) (Figure 1). In Kisoro however, the most traded variety was Kinigi (51.4%). In general potato traders did not trade the other varieties including Rwashaki, Victoria and

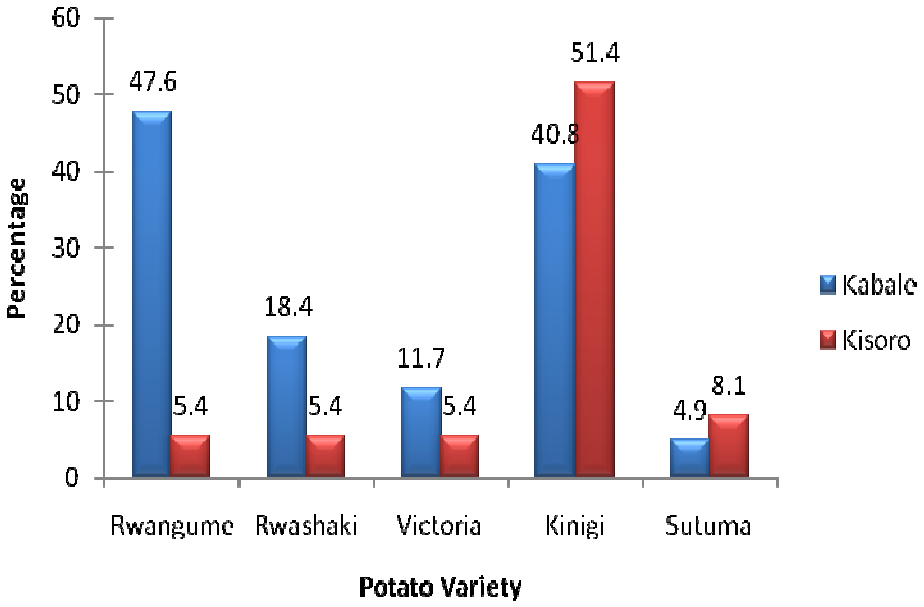

Figure 1. Varieties traded by District.

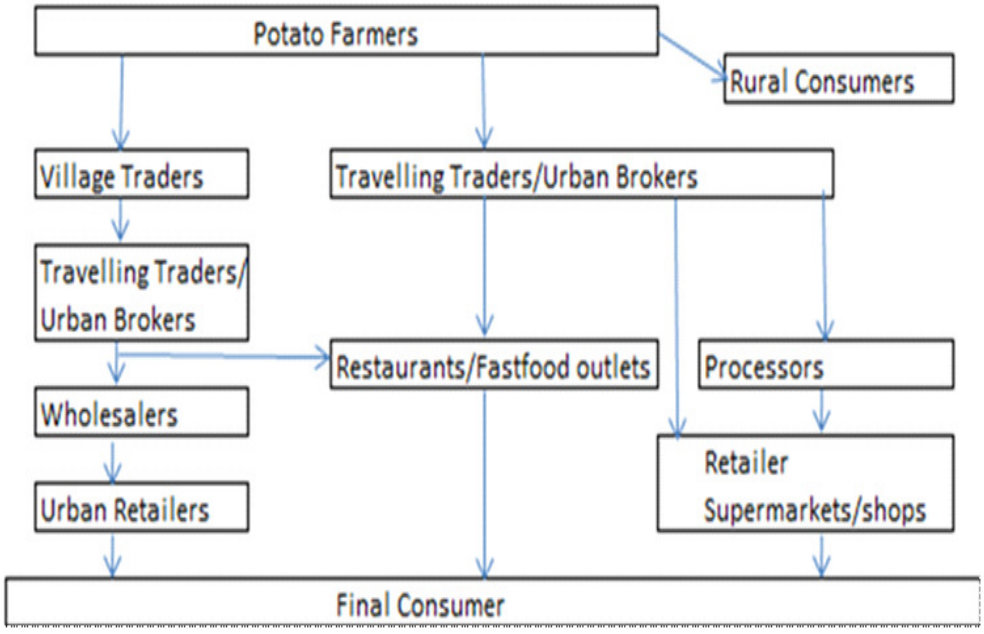

Figure 2. Ware potato marketing chain in Kabale and Kisoro. Source: Survey Data (2010).

Sutama. The observed differences are due to differences in tastes and preferences for the varieties.

Potato marketing channels and transportation modes

Ware potatoes are relatively highly perishable and due to limited on-farm storage facilities thus they are normally moved quickly to buyers/consumers. There are various participants in the ware potato market chain namely: farmers, village traders, brokers, transporters, mobile traders, wholesalers, retailers, processors, restaurants/ fast food outlets and consumers as displayed in Figure 2.

In ware potato marketing, farmers form the first link in the supply chain. They are also consumers of their own produce as well as other farmers' produce. Some farmers

Table 6. Transportation modes.

Variable		Overall sample (%)	Kabale (%)	Kisoro (%)
Transportation mode	Hired vehicle	19.2	18.4	21.6
	Motorbike	1.4	1	2.7
	Non-motorized bike, cart etc	5.0	3.9	8.1
	On head/shoulder/back	10.7	12.6	5.4
	Brought in by suppliers	1.4	1.9	0
	Own transport	1.4	1	2.7

Source: Survey Data (2010).

Table 7. Constraints to potato marketing.

Variable	Institutional factors		Product-related factors	
	Kabale (%)	Kisoro (%)	Kabale (%)	Kisoro (%)
Traders	42.7	43.2	12.7	16.2
Farmers	31	33.3	-	-

sell their potatoes to the rural consumers on-farm or by the road side or in the weekly village markets. However, the main channel through which farmers sell their produce is through the village traders. Farmers also sell directly to travelling traders or urban brokers. Village traders sell potatoes directly to the travelling traders or urban brokers mainly from Kampala and also from other towns. Some village traders also double as brokers. Brokers provide the link for other market participants to each other especially to farmers.

Travelling traders may own trucks or hire them for buying potatoes from farmers or village traders. Travelling traders then transport and sell the potatoes to wholesalers, processors and retailers like supermarkets, shops and restaurants, fast food outlets in other towns mainly Kampala. Travelling traders know the best varieties required especially for chips and crisps (potato chips) and so tend to dominate the chain. Wholesalers sell their potatoes mainly to the urban retailers. Urban retailers (supermarkets, shops, local markets and restaurants or fast food outlets) then sell them in the various grades (heaps, tins, kilograms or as prepared food).

Potato processors obtain their supply directly from travelling traders or urban brokers. They mainly sell their products to supermarkets or shops. Consumers are the final link in the potato market chain. They obtain their raw produce and processed products from urban retailers, restaurants, fast food outlets, supermarkets and shops.

Table 6 shows the percentages of farmers in the district that had access to the different transportation/ delivery modes. The most common means of transport for potatoes in both districts was hired vehicles (19.2%) with Kisoro having a higher percentage (21.6%) than Kabale (18.4%). The second most common means of delivering produce to markets in Kabale was carrying it on heads/shoulders/backs (12.6%) followed by non-motorized bikes (3.9%). In Kisoro the second major mode of transport used was the non-motorized bikes (8.1%) followed by people carrying produce on their heads/shoulders/backs (5.4%). The other means of transport were not used much in both districts (Table 6). A good number of traders in both districts (on average 39.2%) sold their produce either by the roadside or at home markets and therefore did not incur transportation costs. It is worth noting that the steep terrain in these districts largely prohibits motorized transport especially in the rural areas making collection of produce problematic.

Constraints in potato marketing

Traders in both districts encountered various constraints in the marketing of their produce (Table 7). The most serious constraint faced by Kabale traders was that of low prices at the time of sale. This could be due to the nature of the supply chain where middlemen determine the price the consumer pays and other chain actors become price takers. It could also be due to the perishable nature of potatoes and lack of proper storage facilities, so potatoes cannot be stored long after harvest until prices go up. In Kisoro traders reported high cost of transport as the main marketing constraint. Farmers and traders linked marketing constraints to institutional inadequacies (Table 7). For example for traders, institutional constraints included low prices at the time of sale, high prices at the time of purchase, delayed delivery of produce, and long distances to markets.

Table 8. Potato marketing margins for traders in Kabale District.

Variety	Q_1	P_1	P_2	V_1	Q_2	V_2	V_2-V_1	GMM (%)
Rwangume	1,290	411	513	530,190	1148	588,975	58,785	11.1
Rwashaki	431	457	556	196,967	384	213,276	16,309	8.3
Victoria	591	413	514	244,083	526	270,359	26,276	10.8
Kinigi	663	460	563	304,980	590	332,209	27,229	8.9
Sutama	1,105	400	560	442,000	983	550,732	108,732	24.6
Total	4,080	2,141	2,706					
Average prices		428	541					
Percentage loss = 0.11								
Average price paid by final consumer for all the varieties = UgShs1,200/kg								

Table 9. Potato marketing margins for traders in Kisoro District.

Variety	Q_1	P_1	P_2	V_1	Q_2	V_2	V_2-V_1	GMM (%)
Rwangume	650	375	550	243,750	572	314,600	70,850	29.1
Rwashaki	150	350	450	52,500	132	59,400	6,900	13.1
Victoria	465	500	850	232,500	409.2	347,820	115,320	49.6
Kinigi	829	531	723	440,199	729.52	527,443	87,244	19.8
Sutama	400	483	567	193,200	352	199,584	6,384	3.3
Total	2,494	2,239	3,140					
Average prices		447	628					
Percentage loss = 0.12								
Average price paid by final consumer for all the varieties = UgShs1,200 per kg								

The constraints are heightened by high transportation charges, lack of credit arrangements, lack of ready markets, and failure of consumers to pay in time thereby impairing the traders' wellbeing due to delayed incomes which are also low. For farmers, institutional constraints revolved around low prices at the time of sale, inaccessible markets and lack of packaging materials. Traders also mentioned product-related constraints including the bulky nature of potatoes, low supply volumes, high perishability and high incidence of pests/diseases that lead to easy spoilage. About the same proportion of traders in Kabale (42.7%) and Kisoro (43.2%) mentioned institutional factors compared with Kabale (31%) while in Kisoro (33%) of farmers mention the same factors. Similarly, product-related constraints were mentioned by about the same percentages of traders across districts. Product-related factors were not mentioned by farmers. Institutional and product-related interventions would have similar effects in both districts.

Marketing margins in potato trade

In Tables 8 and 9, the buying and selling prices and margins of different varieties of potato are presented. In Kabale, purchase prices (P_1) varied between UgShs400/kg for the Sutama potato variety and UgShs460/kg for the Kinigi variety, while the average selling price (P_2) was UgShs541/kg.

In both Kabale and Kisoro the lowest buying price is for Rwangume which traders buy at an average of UgShs411 per kg in Kabale and UgShs350 per kg in Kisoro. In Kisoro, the highest margins are obtained from selling Victoria while the lowest are obtained from Sutama. The opposite is true however for Kabale where Sutama has the highest margins (Figure 3). These differences in margins point to variations in market suitability for the varieties in both districts. The variations are mainly brought about by out of district sales and the marketing channels through which potato passes. Sutama variety had the highest margins in Kabale while in Kisoro, given the prevailing market prices and supply volumes marketing margins were highest with Victoria variety. Marketing margins span from a low of 18% for Sutama to a high of 39% for Victoria in Kisoro and from a high of 72% (for Sutama) to a low of 37% (for Rwashaki) in Kabale. In both districts, the highly traded Rwangume and Kinigi varieties had medium margins while the least traded varieties lay on the opposite end of the spectrum. Thus, even though Sutama and Victoria were among the least traded varieties, if traded they would result in higher margins for Kabale and Kisoro traders respectively. These results may point to the need for trade diversification within the different potato varieties.

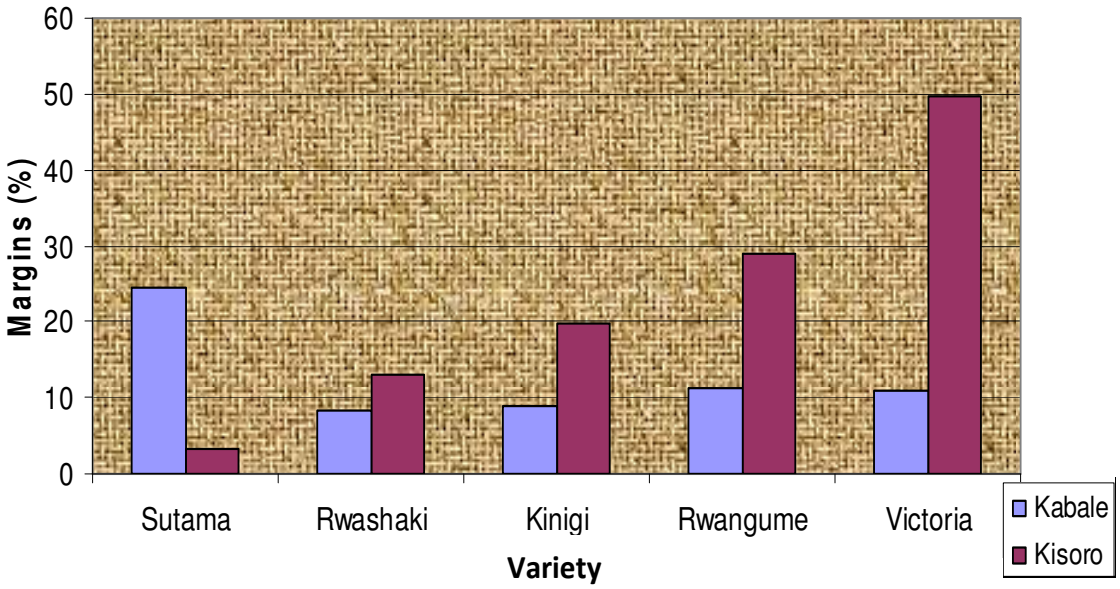

Figure 3. Potato marketing margins (%) in Kabale and Kisoro districts.

SUMMARY AND CONCLUSIONS

In the 2 major potato producing districts of Uganda, a number of potato varieties were traded. A typical trader was a male in the 31 to 50 year age bracket with less than secondary education, whose major source of income was the trading business and occasional sale of crops but with little or no other source of income. Rwangume was the most traded potato variety in Kabale while Kinigi was most traded in Kisoro. The major pricing strategy employed by traders was the cost-plus strategy. Low prices at the time of sale were the most significant marketing constraint in Kabale while in Kisoro the high cost of transport limited trade. Purchase prices varied widely across varieties with implications on the overall marketing margins for traders of the different varieties. Higher prices in Kisoro could be due to high transport costs there that translated into high selling prices.

From the results, institutional and product-related constraints were the major inhibitors of the development of the potato value chains. These included low prices at the time of sell, high perishability of the product and poor market access due to bad road conditions leading to high transport costs. Therefore interventions towards addressing such challenges would help improve /enhance the performance of potato markets most especially in terms of increasing the marketing margins. More importantly, improvements in potato post-harvest handling operations specifically in processing and storage are urgently needed to curb on the wide price swings that negatively impact the stability of incomes for both traders and farmers. This calls for designing and development of cost-effective farmer/trader user-friendly technologies.

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