

**UGANDA CROP MARKET CHARACTERISTICS, CONSTRAINTS  
AND OPPORTUNITIES**

Ephraim Nkonya

A Contribution to the Strategic Criteria for Rural Investments in Productivity  
(SCRIP) Program of the USAID Uganda Mission

*The International Food Policy Research Institute (IFPRI)*

2033 K Street, N.W. Washington, D.C. 20006

September 2002

*Strategic Criteria for Rural Investments in Productivity* (SCRIP) is a USAID-funded program in Uganda implemented by the International Food Policy Research Institute (IFPRI) in collaboration with Makerere University Faculty of Agriculture and Institute for Environment and Natural Resources. The key objective is to provide spatially-explicit strategic assessments of sustainable rural livelihood and land use options for Uganda, taking account of geographical and household factors such as asset endowments, human capacity, institutions, infrastructure, technology, markets & trade, and natural resources (ecosystem goods and services). It is the hope that this information will help improve the quality of policies and investment programs for the sustainable development of rural areas in Uganda. SCRIP builds in part on the IFPRI project *Policies for Improved Land Management in Uganda (1999-2002)*. SCRIP started in March 2001 and is scheduled to run until 2006.

The origin of SCRIP lies in a challenge that the USAID Uganda Mission set itself in designing a new strategic objective (SO) targeted at increasing rural incomes. The *Expanded Sustainable Economic Opportunities for Rural Sector Growth* strategic objective will be implemented over the period 2002-2007. This new SO is a combination of previously separate strategies and country programs on enhancing agricultural productivity, market and trade development, and improved environmental management.

**Contact in Kampala**

Simon Bolwig and Ephraim Nkonya  
IFPRI, 18 K.A.R. Drive, Lower Kololo  
P.O. Box 28565, Kampala  
USA

Phone: 041-234-613 or 077-591-508

Email: E.Nkonya@cgiar.org

S.Bolwig@cgiar.org

**Contact in Washington, D.C.**

Stanley Wood, Project Leader  
IFPRI, 2033 K Street, NW,  
Washington, D.C. 20006-1002,

Phone: 1-202-862-5600

Email: S.Wood@cgiar.org

## **ABSTRACT**

In order for the government of Uganda to realize success in its efforts of modernizing agriculture, it needs to understand the characteristics, constraints and opportunities of the crop market in the country. The broad objective of this study is to understand the characteristics, constraints, and opportunities of the crop market in Uganda. A survey covering 352 agricultural output traders in Uganda was conducted in 2000. Descriptive statistics and multinomial logit econometric model were used to analyze the data.

Most of businesses are sole owned and were started using own funds, implying a serious credit constraint. This is especially true for traders who depend on local banks and other local credit sources. The credit constraint is probably the most important factor that has limited entry of potential local traders into the lucrative coffee and cotton export sector. More than 91% of exporters sampled belong to trader associations while less than quarter of the other types of traders belonged to trader association. This limits non-exporter traders to engage in collective action through their associations. This suggests the need to encourage local traders to form associations and cooperatives for marketing their crops in the international market.

There is lack of contracting in the output marketing mainly due to lack of enforceability of the contracts. Quality also appears to be the most common problem in output trading, partly because farmers are not remunerated for quality. This suggests the need to effectively control and regulate crop quality. Half of the exporters, main town and primary fixed traders use intermediaries, implying the need to recognize the importance of intermediaries and license and facilitate their brokerage services.

Education, gender of principal trader, country of origin, and region where trading business is located, are important factors that determine the decision on type of crop to market. Level of education significantly influences the decision to trade in one of the four crops. Women traders are less likely to trade in export crops than male traders. The need to have targeted support to women to get involved in the export sector or other high-value crops is apparent. Non-Ugandans traders are likely to be engaged in export crop marketing than Ugandans. This is probably due to less access to the cheaper offshore credit services for Ugandan traders. Consequently only a few traders market export crops, posing a danger of monopsonistic behavior. This suggests the need to study

the conduct of export crop traders in order to develop policies for helping potential crop export industry entrants and/or to regulate the sector.

*Key words:* Coffee, cotton, maize, cassava, credit, output traders, marketing, crop quality

## INTRODUCTION

The Ugandan government has stepped up efforts to modernize agriculture through increased productivity and consequently commercialization (PMA, 2000). In order to achieve this goal, the government needs to understand the crop marketing implications of a commercialized agricultural production. This study was conducted with a broad objective of understanding the characteristics, constraints and opportunities for crop marketing in Uganda. Findings of the study will be used to identify policy options that may be used to address the identified constraints and to exploit the existing opportunities.

Output marketing development in Uganda has been characterized by the market reforms that the government took in the last decade. Like many other African countries, Uganda abolished the centralized state agricultural marketing system, which was characterized by high costs and gross inefficiency. The market reforms have created opportunities to develop an efficient private and competitive agricultural market in Uganda. However the efficiency of output markets has remained low due to deficient institutions and infrastructure, and partial policy reforms that left some policy barriers to development of competitive input and commodity marketing (Jayne, et al. 2001, Nkonya and Kato, 2001). This implies policy reforms that the government implemented are necessary but not sufficient conditions for efficient markets.

Four crops were selected for this study: coffee, cotton, maize and cassava. Selection of crops is guided by the following five factors: 1) significance of smallholders' participation, 2) share of the crop in agricultural GDP, 3) prospects for international and regional trade, 4) recent studies on the crops, and 5) potential for value addition. While selection of coffee and cotton was straightforward based these criteria, we had to rely on expert opinions in selecting the other two crops, maize and cassava. Maize is the most important cereal crop in Uganda. The cereal is planted on about 384,000 ha, which is 7% of total area planted with crops, and produces about 527000 metric tons annually (UBOS, 2000; Kasenge, et al., 2001).<sup>1</sup> Maize production in Uganda has been increasing due to its increasing demand both in the country and the region, particularly in Kenya, Congo, Rwanda, and Tanzania. The cereal is one of the major cash crops in the east and northern regions of Uganda. In these regions, about 75-95% of maize produced is sold (Vinlaw Associates, 1997).

---

<sup>1</sup> A recent household survey conducted by the Uganda Bureau of Statistics (UBOS) puts maize acreage at 665,000 hectares with an annual production of 739,000 tons. About 55% of maize is produced in the eastern region (UBOS, 2002).

Cassava is the second most important staple food crop after banana in Uganda (APSEC, 1999). Both area and production of cassava have been increasing over years. The area planted with cassava in 2000 was 401,000 ha, up from 332,000 ha in 1995. Total production increased from 2.224 million tons in 1995 to 5.207 million tons in 2000 (UBOS, 2000). In the past, cassava was planted as an insurance crop against hunger, hence consumed only when other staple crops were not available. There is evidence of changing food tastes and preferences in urban areas where cassava is increasingly becoming a popular snack sold on street sides and busy market areas. It is also finding its way in restaurants and hotels that serve local dishes. Additionally, cassava has a relatively long shelf life when dried, which is desirable to both farmers and consumers. The tuber crop also has a potential of being processed into a high value products like starch and chips.

Before conducting the study, the literature review and consultation with stakeholders of the four selected crops were done. The stakeholders and several studies identified the following seven key issues:

1. High transaction costs of output trading. This problem is mainly caused by the high fuel costs, which in turn are caused by high taxes charged on petroleum products. Taxes levied on petroleum products are 175% for petrol and 130% for diesel (CIF prices). Uganda is also landlocked and hence transports her crop produce solely on roads (ESMAP, 1996; IFDC, 1999). The poor road, communication and storage infrastructure also contribute to the high transaction costs (MAAIF and MFEPD, 2000).
2. Information asymmetry between producers and traders appears to be an important issue for all agricultural crops in Uganda. Producers in the remote areas are seldom aware of prices of their produce in the terminal markets. This has important implications for the sectors that have recently come out of the control of public sector monopoly, such as coffee and cotton. Although respective authorities, e.g., Uganda Coffee Development Authority (UCDA) and Uganda Cotton Development Organization (CDO), have taken initiative to mitigate this problem, effectiveness of their programs is questionable. For example, UCDA announces coffee prices through public and FM radios twice a day. Foodnet of IITA operates a similar program for non-traditional crops. As the announcements are primarily made in English and radio ownership appears to be sparse, accessibility and effectiveness of institutional information to output traders and farmers are likely to be highly skewed.

3. The lack of or high costs of financial services is considered to be a problem at all levels in the marketing chains in Uganda. The local companies have to borrow at substantially higher interest rates than foreign companies, which give an undue advantage to companies that have access to foreign financial markets. This has led to dominance of few exporters in cash crops, and hence a potential for monopsonistic behavior. Traders are unable to leverage their products to obtain sufficient credit for financing purchases, thereby making it difficult to obtain products and reducing their need for secure storage facilities. Micro credit granting organizations largely operate only in urban and peri-urban areas.
  
4. Lack of storage and processing at the primary markets is a constraint to the promotion of food crop sector in Uganda. In addition to causing high post harvest losses (about 40% for perishable crops), storage appears to be the main constraint to export of maize to the regional market. The country needs to have a certain level of stock to send an effective availability signal to the buyers of neighboring countries. In addition, in the absence of adequate storage facilities, transaction costs for assembling can be too high to make grain export feasible. However, assuming high demand for maize in the neighboring countries and regional comparative advantage, the critical questions are: why hasn't export market been developed through private market forces? Is it really a market failure issue?
  
5. Limited contracting. It is expected that formal contracting would help ensure sufficient supply for processors, encourage production through guaranteed purchases, enhance yields through the advancement of inputs or credit to farmers by traders or processors. Formal contracting is however largely absent in the Ugandan agricultural market. The main reason for the lack of contracting seems to be the lack of enforceability of the contracts and the consequent heavy losses for traders as farmers sell their product to the highest bidder and fail to repay their credit providers. This problem was exacerbated by export market liberalization that allowed farmers to sell to any trader offering highest price. Additional research could help to identify the problems and constraints that limit traders from entering into contracts with producers to secure product, and into contracts with processors and exporters to sell their products.

6. Lack of standardization and product quality. Maize and cassava product standardization is lacking. Different varieties of commodities with different characteristics are often mixed together. Testing equipment for determining quality are often unavailable for both maize and cassava at the local level. Prices for the most part do not appear to reward quality. To the extent that it exists, the premium for quality does not appear to be sufficient to induce investment in proper drying or storage facilities.
  
7. Fluctuating and volatile world market prices. International markets for cash crops are quite volatile, particularly for coffee. Maize prices in the domestic and regional market also appear to be volatile. International relief agencies buy maize from Uganda when drought hit or when insecurity increases within Uganda or neighboring countries. In cases when such calamities hit, the demand from the relief agencies is quite large, it sends wrong signals to producers and traders. Clearly, there is an option for hedging, but how can such institutional mechanism be implemented in Uganda is not clear. Joint ventures between local exporters and foreign firms may be an avenue for initiating hedging.

This research attempts to address only some of these issues, namely the credit, contracting, and standardization issues. This paper is organized in four sections. The first section presents an introduction to this study, and is followed by the second section that describes the methodology used in this study. The third section discusses the characteristics of output marketing business and the principal trader, the commercial networking and the relationship between suppliers, customers and output traders. This section also discusses the use of market intermediaries in market information search. The last section will give conclusions and policy recommendations.

## **METHODOLOGY**

A total of 352 output traders were sampled for interview. The output traders were divided into five types for each of the four commodities considered in this study. The five types were exporters, Kampala traders, main town traders, primary fixed traders and primary non-fixed traders. Exporters are expected to be well endowed with capital and operating the biggest businesses than

all other types of traders. Kampala traders are expected to be large as they operate in the biggest city of Uganda. Main town traders are the third biggest traders operating in district headquarter municipalities or townships. They may also operate in non-district headquarter towns that are categorized as urban centers (see UBOS 2000, p. 21). Primary fixed traders operate in the rural areas with a fixed business location, where producers deliver their supplies or where customers go to buy commodities. It is also likely that the primary fixed traders travel to producers to buy supplies. Primary fixed traders are the itinerant traders operating in rural areas with no permanent business location. Unlike the other four categories, primary non-fixed traders normally do not have business license due to their transient nature. They own the smallest businesses.

The number of respondents to interview for each of the four commodities (coffee, cotton, maize and cassava) was intended to be equal but the realization was different as shown in Table 1. However, the number of respondents for each district was determined depending on the contribution of the district to the national production of the commodity considered. However, for each commodity, the population of traders determined the number of respondents for each type of trader. It was possible to randomly select the primary fixed traders, and to some extent main town and Kampala traders. It was extremely difficult to establish the sampling frame for the primary non-fixed traders most of whom do not have a trading license or a fixed location. Hence any trader was interviewed when willing and available. This was done until when the total number required for each crop was achieved. For exporters, the problem was their willingness to be interviewed. Since the exporters are few, they show an oligopolistic behavior, as they are very suspicious and sensitive to giving information about their businesses. In this case, the interview was done with whoever was willing to answer most of our questions.

The data were analyzed using mainly cross tabulation and comparing the mean or frequency across type of traders and/or commodity traded. An econometric model was used to determine the factors that determine a choice of commodity to trade.

Many factors may lead to traders deciding to market any given commodity. The most obvious one are profit, supply and demand factors, level of commodity trading risk, perishability, availability of transport storage and road and communication infrastructure required to handle the commodity. How one responds to these factors depends on the socio-economic characteristics of the principal trader like age, level of education, gender, and trading capital. In this study we seek to understand the factors that determine the decision of the respondents to choose trading one of the four selected

commodities. The commodities considered in this research are coffee, cotton, maize or cassava. A trader is faced by four major choices considered in this study, to trade coffee, or cotton, or maize or cassava. The four choices are nominal, i.e., they are not ordered. The choices are also categorical (discrete). Hence the appropriate econometric model to use is multinomial logit (MNL).

The MNL is a probability model and is generally specified as follows:

$$(1) \Pr(d=c | \mathbf{x} \mathbf{b}_j)$$

Where  $\Pr(\cdot)$  is the probability of observing choice  $c$ , given a vector of socio-economic factors  $\mathbf{x}$  and  $\mathbf{b}_j$  is a vector of coefficients associated with each of the socio-economic factors,  $d$  is the dependent variable with  $c$  possible outcomes.

Equation (1) needs to be normalized to ensure that  $\Pr(\cdot)$  is nonnegative and that the probabilities of the possible choices add to 1,  $\mathbf{x} \mathbf{b}_j$  is expressed in an exponential form and then the probability of each possible choice is expressed as follows:

$$(2) \Pr(d_i = c | \mathbf{x} \mathbf{b}_j) = \frac{\exp(x_i b_j)}{\sum_{j=1}^J \exp(x_i b_j)}$$

However, the equation remain unidentified since if we multiply it with  $\exp(x_i \alpha) / \exp(x_i \alpha)$ , the product equals equation 1 but the coefficients change as shown in equation 3:

$$(3) \Pr(d_i = c | \mathbf{x} \mathbf{b}_j) = \frac{\exp(x_i (b_j + \alpha))}{\sum_{j=1}^c \exp(x_i (b_j + \alpha))}$$

A constraint needs to be imposed to ensure that for any  $\alpha \neq 0$ , the constraint is not violated. Let the constraint be  $\mathbf{B}_j = (\mathbf{b}_j + \alpha) = 0$

For any  $\alpha \neq 0$ , the assumption is violated. Now, assume that  $\mathbf{B}_1=0$ , then equation 3 is expressed as follows:

$$(4) \Pr(d_i = c | \mathbf{x} \mathbf{b}_j) = \frac{\exp(x_i (b_j + \alpha))}{1 + \sum_{j=2}^J \exp(x_i (b_j + \alpha))} \text{ for } j > 1$$

since  $\exp(x_i \mathbf{B}_1) = \exp(x_i 0) = 1$ . Equation 4 is estimated using a maximum likelihood function (ML). Amemiya, (1985) shows that the likelihood function is globally concave; hence the ML estimates are unique.

The MNLM compares the choice of one of the outcomes with a benchmark choice that is specified by the researcher. In this case, we chose to compare all other alternatives against the choice to trade coffee, since the majority of the respondents were coffee traders.<sup>2</sup> The independent variables included in the model are the socio-economic factors of the principal trader, namely, gender, age, level of formal education, and country of origin. Other factors considered are capital, which is represented by the type of trader and market access, which is captured by including the dummy variable for region. All these factors are important determinants in output marketing (Fafchamps, 2000; Gabre-Madhin, 2001; Ngategize, 2001; PMA, 2000).

Female traders are likely to be engaged in trading food crops that are of low value like cassava and maize. Male traders are likely to trade in the high value export crops. Older and more educated traders are likely to have more capital and hence trade in export crops. Foreigners are likely to have more capital and probably better knowledge of the international market. Hence they are expected to be engaged in the export crop trading. Historically, traders of Asian origin have dominated cotton trading and processing in east Africa (Fafchamps, 2000; Fafchamps and Minten, 1999; EAGER, 2001). In Uganda, foreigners own 36% of the manufacturing companies, which include agro-processing, and 25% are jointly by foreigners and Ugandans (UIA, 2000).

## **CHARACTERISTICS OF OUTPUT TRADING BUSINESSES AND PRINCIPAL TRADERS**

This section describes the general characteristics of the output business and the principal trader. Most of the businesses covered in this study are young as the majority started in the late 1990's. The small businesses operate seasonally mainly because of the seasonality of the commodities traded. The effect of this seasonality is risk in output trading which prompt traders to hedge it by diversifying their commodity marketing, or engaging in other non-trade activities. However, larger businesses tend to operate around the year and have some form of specialization in the commodities they trade.

### **Characteristics of businesses**

---

<sup>2</sup> For details on MNLM, see Long, (1997).

### *Ownership structure of commodity trading*

Large companies are required by law to have a limited liability since their trading businesses affect large section of the population. In Uganda, there is no specific share capital required for a new company. However, private limited companies are required to have two to fifty shareholders. Publicly traded (listed) companies need to have seven or more shareholders (Registrar of Companies, personal communication, 2002).

Table 2 shows that more than 73% of businesses are sole owned. The exception is the bigger exporting companies, two-thirds of which are limited liability companies. The relationship between type of trader and ownership status is statistically significant at  $p=0.01$ . This is a reflection that the exporters are big companies. The most common capital used to start up business for all respondents was from own savings (Table 3). However for exporters, local and foreign companies and financial institutions are important sources of capital for starting trading business. Microfinance institutions (MFIs), NGOs and CBOs do not seem to be important sources of start-up capital. This is a reflection of poor financial services to output traders though Uganda is one of the leading countries in MFI's services in Africa.<sup>3</sup>

### *Level of competition*

The level of competition of the Kampala and main town traders is at LC1 level because these urban centers are likely to have many traders within a given LC1 (Table 4 and 5). As expected the primary traders level of competition is at sub-county while the exporters compete at national level. The number of purchase and sale competitors for all types of traders has been increasing significantly from the time the business started to 2000 (Table 6, 7 & 8). The exception to the upward trend is exporters and main town traders whose sale competitors decreased between 1998 to 2000. The increasing level of market competition in Uganda may explain the upward trend of competitors. The competition has been increasing as a result of marketing reforms that allowed the private sector to get engaged in agricultural marketing.

However, UCDA data of registered coffee exporters has been decreasing due to stiff competition from agents of international coffee houses. This has squeezed the local exporters out of the lucrative coffee market. The possible reason for this problem is that the agents/representative of international coffee houses get credit from international financial institutions, which offer lower

---

<sup>3</sup> Uganda has about 500 MFIs with 550,000 active customers saving about \$370 million (Duursman, 2001).

interest rate of less than 10%. The interest rates for borrowing from local banks are about 25%. The international coffee houses also have a considerable knowledge and control of the international markets. The local entrepreneurs who attempted to export coffee found it hard to penetrate the international market for lack of capital, information and experience in international trade. Additionally, price fluctuations in the world market has been haunting new entrants who have low risk bearing ability (Ponte, 2002). These problems have led to massive exit of local traders from the coffee export market from well over 120 in 1990/91 to only about 40 in 2000 (UCDA raw data show that cumulatively, there has been 220 licensed coffee exporters between 1990/91 to 2000). Even among the currently registered exporters, it is only 10 who export more than 80% of the Ugandan coffee (UCDA, 2000 raw data).

Due to this trend, a potential exists for monopsonistic structure at the exporter level for coffee and cotton. Although competition among these exporters is perceived to be strong, it is unclear whether a marketing structure with so few exporters is efficient. It is also not clear why so many local companies went bankrupt.

### **Characteristics of principal traders**

#### *Women participation in output trading*

Women in sub-Saharan Africa are the major producers and processors of food for home consumption. African women are also actively involved in retailing foodstuffs in seasonal markets, street-side and permanent market stalls. In Ghana for example, women sell about 80% of all foodstuffs and other agricultural products (FAO, 1993). A study conducted by the International Food Policy Research Institute (IFPRI) in urban Ghana showed that about 47% of women in Accra are engaged in petty trading and 20% in street food preparation/vending (Maxwell, et al., 2000). Participation of women in coffee, cotton, maize and cassava trading is less than 20% (Table 9 & 10). On the type of traders' basis, Kampala traders reported the highest proportion of female traders. Primary non-fixed traders reported the smallest proportion of female traders, probably because, they are involved extensive traveling, which is not feasible for women who are always engaged in child rearing and other house chores that do not permit extensive traveling. On commodity-traded basis, cassava was marketed by the highest proportion of female traders than all other commodities covered in this study. Coffee trading had the smallest proportion of female traders.

### *Nationality, languages spoken and education of principal trader*

As expected the majority of respondents were Ugandans. About 26% of exporters were foreigners from Kenya, Europe and East Asia (Table 9 & 10). Coffee and cotton are the most preferable crops for foreigners. In Uganda, foreigners own 36.4% of the licensed 2021 private companies, as compared to local entrepreneurs who own 38%. Companies owned jointly by foreigners and local Ugandans account for 25% (UIA, 2000). Uganda's competitiveness for FDI is quite impressive. The leading foreign investors come from United Kingdom, Bermuda, South Africa, Kenya and Mauritius (Table 11).

The respondents speak an average of 3 to four languages and are aged in their thirties. The exporters were the most educated - about 71% had a university degree. The majority of Kampala, main town traders, and primary fixed traders had a secondary education and primary non-fixed traders had a primary school education (Table 12). On the crop basis, coffee and cotton traders were the most educated as they had the highest proportion of post-secondary education. The possible explanation for this observation is the fact that coffee and cotton are export crops, which require a fair amount of formal education to be able to conduct business in the complicated international market.

### *Factors determining type of crop traded*

It is interesting to know why traders decide to market one of the four commodities covered in this study. The results of this analysis are important since they will provide information that may be used to influence decision of traders to market the commodities under study. Table 13 summarizes the variables that are used in the multinomial logit model to study the determinants of choice of crops to market. Table 14 reports the MNLM results for the three choices, namely the decision to market cotton, or maize or cassava. The benchmark choice, coffee trading, is not estimated since it is dropped to avoid perfect multicollinearity in the model. The model results suggest that non-Ugandans are more likely to be engaged in cotton trading than coffee. As shown on Table 10, the highest proportion of foreigners trade cotton. These results support Fafchamps (2000) findings that Asians dominate cotton ginning and manufacturing sector in general.<sup>4</sup>

---

<sup>4</sup> In Uganda, most cotton exporters are also owners of ginneries. Hence cotton processors are also exporters.

The results for maize and cassava also show that the country of origin is an important determinant of decision to trade coffee or one of the two food crops. In both cases, Ugandans are more likely to market maize or cassava than coffee. The same argument, as for the cotton case, applies here.

Level of education also significantly influences the decision to trade in coffee or one of the other three crops. Attainment of college/profession training increases the probability of being engaged in cotton trading than coffee trading. The results can also be interpreted to mean that respondents with secondary education are more likely to be engaged in coffee trading than cotton.<sup>5</sup> A change from secondary to University education increases the probability for a trader to switch from maize to coffee marketing.

The region where the business is located significantly affected the probability to choose a commodity to market. Traders located in the eastern region are more likely to be involved in cotton or maize rather than coffee marketing. Respondents conducting business in eastern and northern region are more likely to be engaged in cassava than coffee trading. The results of the region factor may be explained by the supply factor. Cotton, maize and cassava are easily available in the eastern and northern region than in the central region.

Type of trader and gender are significant factors that determine decision to be engaged in cassava or coffee trading. Kampala traders are more likely to be involved in cassava than coffee trading. This is supported by recent evidence of increasing demand for cassava in urban areas (Mwayi, 2000). Cassava is deep fried or boiled and used as a snack by the urban consumers. Low-income urban consumers also use it as a substitute for breakfast bread. The econometric results also show that female traders are more likely to be engaged in cassava trading than coffee. The results are supported by other studies showing that female traders are more likely to be engaged in low-value, food crop trading than high-value export crop.

### **The role of trading associations and commercial networks in output marketing**

This section looks at the social capital that output traders build and use in their trading activities. The section also looks at the market intermediaries that are used by output traders to search for market information. The social capital is built through associations, frequent contacts with regular

---

<sup>5</sup> The dummy educ3 = secondary education was dropped to avoid the dummy trap. Therefore educ3 is used as a benchmark to compare with the other four possible options: educ1, educ2 educ4 and educ5.

suppliers and customers, and interpersonal relationship outside trading business. Social capital interest group, (1999) defines social capital as “the potential benefits, advantages, and preferential treatment resulting from one person or group’s sympathy and sense of obligation toward another person or group.” In the commercial world, social capital is likely to change the level and terms of transactions, internalize externalities and may reduce cost of contractual obligations (Wilson, 2000).

Networks and commercial relationships facilitate exchange of information, which is crucial in decision-making. Social capital in the form of close commercial relationships may facilitate availability of credit in the absence of collateral (Siles, et al. 1994). Commercial relationships and networks may also reduce transaction costs, for instance by pooling transport for purchases and/or making transaction on behalf of a colleague (North, 1990). In the absence of efficient financial systems in low-income countries the need to build a social capital is even more important.<sup>6</sup> Fafchamps and Minten (1999) observed that agricultural traders in Madagascar perceive interpersonal relationship as the most important factor for success in their business. They further noted that relationships serve a variety of purposes such as market information sharing, risk mitigation, provision of trade credit, regularity of supplies and demand, and prevention and handling of contractual difficulties.

### *Trading Associations*

Formation of trader associations is one method of building social capital, forging collective actions in order to pool resources, negotiate prices and sharing information. Formation of associations by many sellers in a competitive environment may be beneficial to both consumers and sellers. In this study, we discuss the prevalence of trading associations and benefits that members draw from the associations. Table 15 shows that more than 91% of exporters belong to trader associations. They pay an average annual fee of about Ush 5.7 million, an amount that is a lot more than the other types of traders belonging to associations. About half of the Kampala traders also belong to trader associations. The associations are designed to form pressure groups against the central and local governments. Less than quarter of the main town and primary traders belonged to trader association. This shows their lack of cohesiveness and hence weakness for taking any collective action.

---

<sup>6</sup> The need for social capital is also important to the poor in general, since they do not have access to other forms of capital, namely financial and human capital, land and other forms of assets.

*Purchase and sale contracts:* Formal contracting helps to ensure sufficient and reliable supply and demand. Through farmer cooperatives, traders or processors used contracting in east Africa to enhance yields through the advancement of inputs or credit to farmers. In this study, we examine the existence of contracting between output traders with their suppliers and customers.

Business relationship between suppliers and customers is established after the agents involved establish a trust between each other. Once such trust is established, customers are likely to buy regularly from some few suppliers. This regularity reduces the search costs and risks of being cheated on price or quality. The relationship also ensures regular supply and demand. In advanced marketing environment, buyers and sellers may enter into binding contracts that ensure quality, time of delivery and price. Contract marketing and futures trading involving binding contracts are used as hedge against price and other market risks (Hardaker, et al. 1997).

In Uganda, Nkonya and Kato (2001) observed that the proportion of total input purchases from regular suppliers was 84% for retailers 91% for wholesalers and importers. The number of regular suppliers tended to be smaller than number of regular customers. They further noted that ethnic groups, blood relationship and religion did not seem to be strong criteria for picking regular suppliers.

Table 16 & 17 show that more than 75% of the sampled output traders purchased from regular suppliers. However, it does not seem that the traders enter into any binding contracts with their suppliers since all of them reported that they are free to buy from other suppliers and more than 90% are free to sell to any customer (Table 18 & 19). It is interesting to note that about 10% of the cotton traders reported that they are not free to sell to any customer. This indicates that 10% of cotton traders have binding contracts with their buyers. This is probably due to the few cotton traders who also double as processors. As mentioned earlier, the main reason for the lack of contracting seems to be the lack of enforceability of the contracts. Informal contracting seems to occur however. Because of the high level of competition among traders to purchase coffee, farmers are encouraged with instant cash to sell their coffee to the trader often before it has been harvested off the tree, or properly dried, and occasionally too early in the production cycle in order to secure funds (Bucyanayandi, 2000, personal communication). Additional research could help to identify the problems and constraints that limit traders from entering into contracts with producers to secure product, and into contracts with processors and exporters to provide product.

### *Quality and standards problems*

Table 20 – 21 show that traders experienced quality, measuring system, price and late delivery problems with their regular suppliers and customers. Quality appears to be the most common problem with regular suppliers among all types of traders. In the case of coffee, the quality decline is probably due to the high competition, which lead exporters to buy even low quality coffee. At the coffee purchase market, farmers and traders negotiate price basing on weight of beans only. This may discourage farmers to produce high quality coffee since the premium for quality is not remunerated. Farmers may therefore have no incentive to invest in quality enhancement inputs such as proper drying or storage facilities. By contrast, exporters obtain a better price by selling a uniform, high quality product at the international and to a lesser extent at the regional markets.

Traders are also exporting low quality coffee that was discarded or locally consumed in the past. While the aggregate Ugandan coffee might have fallen, such decline may not necessarily be bad on the economy as increase in export volume of lower quality coffee might offset the premium price loss. However, this problem points to the need to effective control on the tendency of traders buying even unripe berries.

Maize and cassava do not have an effective regulatory body that may ensure quality and standards of the products. The quality of commodities is in general good, but it deteriorates during post harvest handling for maize, cotton, and coffee. Different varieties of commodities with different characteristics are often mixed together. Testing equipment for determining quality of maize and cassava are often unavailable at the local level. Prices for the most part do not appear to reward quality of maize and cassava.

Addition of quality seems a way of overcoming the plummeting coffee price that has fallen to their 30-year low (Ponte, 2002). For instance in February 2002, Uganda started exporting instant coffee to US under the Africa Growth and Opportunities Act (AGOA). The country has also successfully negotiated a deal with the Chinese to export processed coffee (*New Vision*, February 22, 2002).

For the maize marketing, lack of storage facilities is a severe problem for output traders and farmers. The consequent poor maize storage leads to deterioration of its quality and high post-harvest losses. It is estimated that post-harvest losses for cereals and legumes is about 12-25%. Additionally, maize marketing passes through many agents/actors. This leads to substantial losses in terms of quality. Lack of product standards, irregular supplies and low product volume are the

other problems that lead farmers to fail to capture the export market which requires standardized product and regular supply.

Cassava trading is the least developed market among the three crops covered in this study. However, cassava also has a potential of being processed into industrial starch in order to increase its value (Mwayi, 2000). A cassava starch factory has been recently opened in Nakaseke County (*New Vision*, February 22, 2002). This factory may open up new avenues for processing cassava for the domestic, regional and international markets.

*Use of intermediaries:* Studies on market intermediaries have been scanty despite their important role in reducing search costs (Gabre-Madhin, 2001). Table 22 shows that half of the exporters, main town and primary fixed traders use intermediaries. It is a bit puzzling that smaller proportion of Kampala traders use intermediaries than the case for primary traders. It was expected that the sophisticated Kampala traders would use intermediaries more than the primary traders.

On crop basis, cotton traders reported the highest proportion of intermediary use. It is common for cotton traders in east Africa to form a chain of buying agents in cotton growing areas. This is because cotton is bulky and is produced in areas with poorest infrastructure in the north and east of Uganda. These areas are also characterized with insecurity.<sup>7</sup> Cotton therefore needs to be collected by agents at buying posts before being transported to ginneries for processing. As expected, cotton has the highest number of intermediaries though there is no significant difference in the number of intermediaries used by traders of the four commodities under study.

These results signify the importance of intermediaries in the output purchase marketing in Uganda. The policy implication for these findings is that the government needs to recognize intermediaries and license their operations. Mechanism should also be put in place to improve their market information search. This will improve their efficiency in providing their brokerage services.

## **CONCLUSIONS AND RECOMMENDATIONS**

The government has achieved impressive development in its economic recovery and good governance efforts though a lot remain to be done in the country in order to make output marketing

---

<sup>7</sup> These problems make output traders to bid lower prices to cotton producers to cover for the risks and transport costs involved. This is one of the reasons for the collapse of the cotton industry in the 1970's.

more efficient. Credit availability remains a major constraint to the local Ugandan output traders. The local entrepreneurs who attempt to export coffee find it hard to penetrate the lucrative international market for lack of capital, information and experience in international trade. Price fluctuations in the world market also frustrate the new entrants who have low risk bearing ability. These problems have led to massive exit of local traders from the coffee export market.

Findings of this study point to some other areas that need to be examined closely to understand their role in performance of the export sector and efficient output marketing in general. These are education, collective action through trade associations of cooperatives, gender of principal trader, contracting, and use of agents for market information collection and performing transactions. Level of education significantly influences the decision to trade in one of the four crops. For instance, our results show that support of professional training programs may help exporters to run their businesses more competitively.

Trade associations seem important to exporters since more than 91% of exporters sampled belong to trader associations while less than quarter of the other types of traders belonged to trader association. This shows potential of collective action among the exporters and lack of it among main town traders and hence weakness for taking any collective action. This suggests the need to encourage local traders to form associations and cooperatives for marketing their crops in the international market. The associations may help in pooling resources, obtaining credit and information and a score of other benefits.

Cassava, the crop with lowest value, was marketed by the highest proportion of female traders than all other commodities covered in this study while coffee trading had the smallest proportion of female traders. The need to have targeted support to women to get involved in the export sector or other high-value crops is apparent.

There is lack of contracting in the output marketing due mainly to lack of enforceability of the contracts. Additional research could help to identify the problems and constraints that limit traders from entering into contracts with producers to secure product, and into contracts with processors and exporters to provide product.

Quality appears to be the most common problem in output trading, partly because farmers are not remunerated for quality. Farmers may therefore have no incentive to invest in quality enhancement

inputs such as proper drying or storage facilities. This problem points to the need to effectively control and regulate crop quality. This is important for Uganda since addition of quality seems to be one way of overcoming the plummeting world coffee prices.

Maize and cassava do not have an effective regulatory body that may ensure quality and standards of the products. Different varieties of commodities with different characteristics are often mixed together. Testing equipment for determining quality of maize and cassava are often unavailable at the local level. Prices for the most part do not appear to reward quality of maize and cassava. Other problems facing the maize and cassava marketing are lack of storage facilities, irregular supplies and low product volume. These problems lead farmers and output traders to fail capture the export market, which requires standardized product and regular supply.

Half of the exporters, main town and primary fixed traders use intermediaries. These results signify the importance of intermediaries in the output purchase marketing in Uganda. The policy implication for these findings is that the government needs to recognize intermediaries and license their operations. Mechanism should also be put in place to improve their market information search. This will improve their efficiency in providing their brokerage services.

**Table 1: Main Commodities Traded and Type of Traders**

Type of Trader	Main Commodities Traded				
	Coffee	Cotton	Maize	Cassava	Total
	Number of Respondents				
Exporters	13	7	4	0	24
Kampala Traders	0	0	11	10	21
Main Town Traders	24	21	28	25	98
Primary Fixed Traders	26	38	21	19	104
Primary Non-fixed Traders	32	19	26	28	105
Total	95	85	90	82	352

**Table 2: Ownership of Output Trading Business by Type of Trader**

Business Ownership	Type of Trader				
	Exporters	Kampala	Main Town	Primary Fixed	Prim. Non- fixed
Sole Ownership	12.5	90.5	73.5	88.5	98.1
Partnership With Local Traders	0.0	0.0	1.0	1.0	0.0
Cooperative	4.17	0.0	0.0	5.8	0.0
Ltd. Company	66.7	4.8	5.1	1.0	0.0
Association	0.0	0.0	2.0	1.0	0.0
NGO/ Church	0.0	0.0	1.0	0.0	0.0
Joint Venture	4.2	4.8	14.3	1.0	1.9
Foreign Company	12.5	0.0	0.0	0.0	0.0
Other	0.0	0.0	3.1	1.9	0.0
Significance of Business Ownership and Type of Trade				$\chi^2=249.3^{***}$	

**Table 3: Source of Capital to Start Business by Type of Trader.**

Source of Capital	Exporter (N=23)	Kampala (N=21)	Main Town (N=92)	Primary Fixed (N=101)	Primary Non-fixed (n=103)
% Reporting source					
Own Savings	56.0	61.9	76.1	71.3	81.6
Family Members	8.7	28.6	10.9	14.9	11.7
Non Family Members	0.0	0.0	4.4	6.9	3.9
Local Company	17.4	0.0	2.2	0.0	0.0
Foreign Company	4.4	0.0	2.2	2.0	1.0
Local Bank/Institution	4.4	0.0	3.3	0.0	0.0
Other Financial Institution	0.0	4.8	0.0	1.0	1.0
Other	4.4	0.0	1.1	0.0	1.0
Significance of Association of Type of Trader and The Source of Start-UP Capital				$\chi^2=83.84^{***}$	

**Table 4: Level of Competition For Buying Commodities By Type of Trader**

Level of Competition	Type of Trader					
	Exporter (N=24)	Kampala (N=21)	Main Town (N=98)	Primary Fixed (N=104)	Primary non-fixed (N=105)	
% reporting source						
LC1	16.6	61.9	29.6	32.7	24.8	
Sub-county	0.0	4.8	25.5	35.6	57.1	
County	0.0	4.8	10.2	10.6	12.4	
District	8.3	0.0	9.2	12.5	2.9	
Region	25.0	0.0	17.4	5.8	2.9	
National	50.0	28.6	7.1	2.9	0.0	
Other	0.0	0.0	1.0	0.0	0.0	
Significance of Association of Level of Competition and Type of Trader				$\chi^2=216.15^{***}$		

**Table 5: Direct Sale Competitors by Type of Traders**

Level of Competition	Type of Trader					
	Exporter (N=24)	Kampala (N=21)	Main Town (N=98)	Primary Fixed (N=104)	Primary Non-fixed (N=105)	Non-fixed (N=105)
% reporting level of competition						
LC1	20.8	85.7	45.7	18.5	26.6	
Sub-county	0.0	0.0	13.4	24.3	41.9	
County	0.0	9.5	6.2	9.7	13.3	
District	4.2	4.8	17.5	16.5	13.8	
Region	8.3	0.0	10.3	18.5	3.8	
National	58.3	0.0	6.2	4.9	1.0	
Other	8.3	0.0	1.0	0.0	0.0	

Significance of Association of Level of Competition and Type of Trader  $\chi^2=223.36^{***}$

**Table 6: Number of Purchasing Competitors by Type of Trader**

Type of Trader	Number of Competitors		
	At Start	1998	2000
Exporter (N=24)	43.7	54.2	69.8
Kampala (N=21)	44.8	152.3	163.9
Main Town (N=98)	42.4	79.8	98.5
Primary Fixed (104)	18.4	30.4	41.1
Primary Non-fixed (105)	23.2	28.2	35.9
F-Test	2.18***	1.56***	1.95***

**Table 7: Number of Selling Competitors by Type Trader.**

Type of Trader	Number of Competitors		
	At Start	1998	2000
Exporter (N=24)	35.2	64.1	51.6
Kampala (N=21)	35.0	73.8	104.3
Main Town (N=98)	50.4	88.1	81.4
Primary Fixed (104)	36.6	58.0	88.1
Primary Non-fixed (105)	40.6	49.6	62.8
F-Test	1.00	1.21	1.42**

**Table 8: Number of Selling Competitors By Type of Trader.**

Main Commodity	Number of Competitors		
	At Start	1998	2000
Coffee (N=95)	58.8	76.7	59.2
Cotton (N=85)	37.3	70.2	110.5
Maize (N=90)	46.2	82.2	104.8
Cassava (N=82)	18.9	24.5	34.8
F-Test	1.27	1.22	1.16

**Table 9: Gender, Country of Origin, Languages Spoken and Age of Principal Trader by Type of Trader**

Characteristics	Type of Trader					Statistical Test
	Exporter N=24	Kampala N=21	Main Town N=98	Primary Fixed N=104	Non-fixed N=105	
Gender: % female	12.5	19.1	8.2	5.8	3.8	$\chi^2=7.77^*$
Country of Origin : % from						$\chi^2=91.70^{**}$
Uganda	73.9	100.0	100.0	100.0	98.1	
Kenya	13.0	0.0	0.0	0.0	0.0	
Burundi	0.0	0.0	0.0	0.0	1.9	
East Asia	4.4	0.0	0.0	0.0	0.0	
Europe	8.7	0.0	0.0	0.0	0.0	
Languages Spoken: #	3.0	4.0	3.0	3.0	3.0	F-Test 2.67***
Age of principal trader (yrs)	41.0	34.0	34.0	36.0	29.0	2.31***

**Table 10: Gender, Country of Origin, Languages Spoken and Age of Principal Trader by commodity traded**

Characteristics	Coffee N=95	Cotton N=24	Maize N=90	Cassava N=82	Stat. Test
Gender: % Female	2.1	4.7	6.7	15.9	$\chi^2=13.88^{***}$
Country of Origin:% from:					$\chi^2=16.33$
Uganda	97.9	95.2	98.9	98.8	
Kenya	0.0	3.6	0.0	0.0	
Burundi	0.0	1.2	0.0	1.2	
East Asia	1.1	0.0	0.0	0.0	
Europe	1.1	0.0	1.1	0.0	
Languages Spoken: #	2.0	3.0	3.0	3.0	F = 3.20
Age of principal trader: yrs.	33.0	37.0	33.0	32.0	F = 0.89

**Table 11: Source of Foreign Direct Investment in Uganda in 2000**

Source of FDI	Amount of FDI US\$ Million	% of total
U.K.	147.4	22.1
Bermuda	148.1	22.2
South Africa	86.7	13.0
Kenya	49.5	7.4
Mauritius	20.0	3.0
Other countries	215.0	32.2
Total	666.7	100.0

Source: UIA, 2000

**Table 12: Level of Education of Principal Trader by type of Trader**

Highest Level of Education attained	Type of Trader				
	Exporter N=24	Kampala N =21	Main Town N=98	Primary Fixed N=104	Primary Non-fixed N=105
	% Who Attained Level of Education				
No Formal School	0.0	0.0	2.0	2.0	2.0
Primary School	12.5	14.0	26.6	29.3	65.7
Secondary School	4.2	48.0	57.1	57.1	30.5
University	70.8	4.8	1.0	1.0	0.0
College/ Professional Training	12.5	23.8	13.3	10.6	1.9

Significance of Association Between Level of Education And Type of Trader  $\chi^2=314.87^{***}$

**Table 13: Major socio-economic determinants of trading selected commodities**

Variable	Description of principal trader
Type	Type of trader: 1=exporter, 2=Kampala trader, 3=Main town trader, 4=Primary traders
Gender	Gender: Gender = 1 male, Gender=0 female
Age	Age (years) of principal trader
Country	Country of origin: 1=Uganda, 2=Rest of the World
Educ	Education: educ1=no formal education, educ2=primary, educ3=secondary, Educ4=University, educ5=college/professional training
Region	Region where business located: Region 1 = central, 2 = eastern, 3 = northern

**Table 14: Multinomial Logit Results Showing The Major Determinants of Trading Main Commodity**

Main commodity	Coefficient	Standard error	P>Z
<b>Cotton</b>			
Type1	0.591	1.189	0.619
Type2	-2.113	4.02exp(08)	1.000
Type3	-0.029	0.512	0.954
Gender	-0.805	1.353	0.552
Age	0.025	0.024	0.286
Country	-58.398	1.753	0.000
Educ1	1.584	1.563	0.311
Educ2	0.111	0.189	0.820
Educ4	-56.760		
Educ5	2.133	0.912	0.019
Region2	4.090	0.667	0.000
Region3	24.813		
<b>Maize</b>			
Type1	0.809	1.355	0.550
Type2	40.603		
Type3	0.727	0.462	0.116
Gender	-1.356	1.243	0.275
Age	-0.023	0.024	0.341
Country	-36.076	1.478	0.000
Educ1	-40.813	7.97exp(08)	1.000
Educ2	0.202	0.441	0.646
Educ4	-35.791	2.363	0.000
Educ5	-0.193	0.976	0.844
Region2	2.969	0.455	0.000
Region3	23.400	0.715	0.000
<b>Cassava</b>			
Type1	-78.170	3.350exp(08)	1.000
Type2	40.355	0.630	0.000
Type3	0.556	0.474	0.241
Gender	-2.692	1.186	0.023
Age	-0.023	0.025	0.360
Country	-58.019	2.284	0.000
Educ1	1.077	1.542	0.485
Educ2	0.214	0.453	0.637
Educ4	-17.876	4347.533	0.997
Educ5	-0.490	1.037	0.637
Region2	3.005	0.477	0.000
Region3	23.441	0.741	0.000

Number of observations = 349

LR  $\chi^2$  (36) = 295.04 Prob >  $\chi^2$  = 0.000Log likelihood = -335.737 Pseudo R<sup>2</sup> = 0.3053

**Table 15: Membership to associations by type of traders**

Type of Trader	Belong to association? % yes	Means of Association characteristics				
		# of Assoc belonging to	Assoc. Fee ('000 Ush)	Fee period (Months)	# of members	# of members traded with
Exporters (N=24)	91.7	1.7	285.73	6.5	29.6	1.8
Kampala (N=21)	47.6	1.0	41.00	5.6	171.0	39.4
Main Town (N=98)	23.5	1.3	57.69	6.5	238.2	17.2
Primary Fixed (N=104)	19.2	1.2	93.37	6.9	180.1	19.1
Primary Non-Fixed (N=105)	11.4	1.3	8.64	7.0	362.3	8.1
F- test	75.46***	1.53	2.49***	0.76	1.45	0.94

Note the test statistic for column two is Chi-square

**Table 16: Regular Customers and Suppliers by type of trader**

Regulars	% with regular suppliers & customers					$\chi^2$ for association of row & column
	Exporter (N=24)	Kampala (N=21)	Main town (N=98)	Primary Fixed (N=104)	Primary Non-Fixed (N=105)	
Customers	95.8	76.2	89.8	93.2	97.1	12.85**
Suppliers	79.2	76.2	84.7	87.5	93.3	7.78*

**Table 17: Regular Customers and Suppliers by Main Output traded**

Regulars	% with regular suppliers & customers				$\chi^2$ for association of row & column
	Coffee (N=95)	Cotton (N=85)	Maize (N=90)	Cassava (N=82)	
Customers	94.7	97.7	87.6	90.2	7.59*
Suppliers	95.8	82.4	82.2	87.8	10.10*

**Table 18: Freedom of business to make decision by type of trader**

Freedom of business to decide from whom to	% free to trade with anyone				
	Exporter (N=24)	Kampala (N=21)	Main town (N=98)	Primary Fixed (N=104)	Primary Non-Fixed (N=105)
Buy from	100.0	100.0	100.0	100.0	100.0
Sell to	95.8	100.0	95.9	96.9	97.1

Significance of association between freedom of business to trade and type of trader;  $\chi^2 = 1.08$

**Table 19: Freedom of business to make decision by Main Output traded**

Freedom of business to decide from whom to	% Yes By Main Output traded			
	Coffee (N=95)	Cotton (N=85)	Maize (N=90)	Cassava (N=82)
Buy from	100.0	100.0	100.0	100.0
Sell to	96.8	90.5	98.9	100.0

Significance of association between freedom of business to trade and type of trader;  $\chi^2 = 13.66***$

**Table 20: Problems with regular suppliers and customers by type of trader**

Type of trader	% having problems with		
	Quality	Measuring system	Price
Exporter, N=24	79.2	33.3	45.8
Kampala Trader, N=21	71.4	33.3	47.6
Main Town, N= 98	81.6	50.0	54.1
Primary fixed, N=104	82.7	51.9	68.0
Primary Non-fixed, N=103	80.0	58.1	63.0
$\chi^2$	1.55	7.81*	7.84*

**Table 21: Problems with regular suppliers and customers by Main Output traded**

Main Output Traded	% having problem with		
	Quality	Measuring system	Price
Coffee (N=95)	81.0	42.1	61.0
Cotton (N=85)	80.0	50.6	49.4
Maize (N=90)	83.3	55.6	61.8
Cassava (N=82)	78.0	56.1	67.1
$\chi^2$	0.80	4.61	5.83

**Table 22: Use of intermediaries**

By type of trader		By Main Output Traded	
	% using intermediaries		% using intermediary
Exporter, N=24	50.0	Coffee (N=95)	36.8
Kampala Trader, N=21	38.1	Cotton (N=84)	55.9
Main Town, N= 98	51.0	Maize (N=90)	37.8
Primary fixed, N=103	50.5	Cassava (N=82)	37.8
Primary Non-fixed, N=105	23.8	$\chi^2$	9.01**
$\chi^2$	21.36***		

**Table 23: Proportion of purchases in main market through intermediaries by type of trader**

Type of trader	% total purchases in main market by:		
	Buying agents	Broker	Own/Employees
Exporter, N=24	50.7	4.3	45.0
Kampala Trader, N=21	21.4	22.9	41.4
Main Town, N= 98	48.9	10.5	41.4
Primary fixed, N=103	55.9	6.3	38.7
Primary Non-fixed, N=105	39.0	3.2	57.8
F-test	1.15	1.19	0.83

## REFERENCES

- Agricultural Policy Secretariat (APSEC), 1999. *Report on Economic of crops and livestock production, processing and marketing, 1998/99*. Mimeo, APSEC, Kampala Uganda: 63-148.
- Amemiya, T. 1985. *Advanced Econometrics*. Cambridge, Massachusetts: 295-296.
- Bucyanayandi, T.N., 2000. Uganda Coffee Development Authority (UCDA) Managing Director (former) Personal communication, Kampala Uganda.
- Duursman, M. 2001. *Prospects for Microfinance in Uganda*. Workshop Proceedings, Grand Imperial Hotel, Kampala Uganda, November 21, 2001 (Unpublished).
- Equity and Growth Through Economic Research (EAGER), 2001. "Ethnicity and investment promotion: A thorny path for policy makers," *Policy Brief*, 49(January 2001):1-7.
- ESMAP, (Energy Sector Management Assistance Program); 1996. *Uganda Energy Assessment Report NO. 193/96*. World Bank Washington D.C. 11-12.
- Fafchamps, M., 2000. "Ethnicity and Credit in African Manufacturing." *Journal of Development Economics*, 61:205-235.
- Fafchamps, M., and B. Minten, 1999. "Relationships and Traders in Madagascar." *Journal of Development Studies*, 35(6):1-35.
- FAO. 1993 "Women's Activities in Food and Agricultural Marketing" in Abbott, J.C. (ed.) 1993. *Agricultural and Food Marketing in Developing Countries Selected Readings*. CTA and CAB International, UK: 112 – 116.
- Gabre-Madhin, E.Z. 2001. The role of intermediaries in enhancing market efficiency in the Ethiopian grain market," *Agricultural Economics* 25(2001):311-320.
- Hardaker, J.B., R.B.M. Huirne and J.R. Anderson. 1997. *Coping with Risk in Agriculture*. CAB International Oxford UK: 232-51.
- International Fertilizer Development Center (IFDC) 1999. The fertilizer market in Uganda. An Assessment and strategy for Development unpublished report.
- Jayne, T.S., J. Govereh, A. Mwanumo, A. Chapoto, and J.K. Nyoro. 2001. "False promise or false premises? The experience of food and input market reforms in eastern and southern Africa." In: Jayne, T.S., G. Argwings-Kodhek and I. Minde (eds). *Perspectives on agricultural transformation: A view from Africa*, Nova science, New York (forthcoming).
- Kasenge, V., D.B. Taylor, S. Kyamanywa, G. Birigwa, and J.M. Erbaugh. 2001. "Farm-level evaluation of monocropping impacts on maize yields and returns in Iganga district, Uganda," *Eastern Africa Journal of Development*, 17(1): 18-24.

- Long, J.S. 1997. *Regression models for categorical and limited dependent variables*. Sage Publications, Thousand Oaks, California: 151-178.
- Maxwell, D, C. Levin, M. Armar-klemesu, M. Ruel, S. Morris and C. Ahiadeke. 2000. *Urban Livelihoods and Food and Nutrition Security in Greater Accra, Ghana*. International Food Policy Research Institute (IFPRI) Washington D.C. Research Report # 112, April 2000.
- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and Ministry of Finance, Planning and Economic Development (MFEPD), 2000. *Plan for Modernization of Agriculture: Eradicating Poverty in Uganda. Final draft*, April 2000. Government of the Republic of Uganda: 32-40.
- Mwayi, R. 2000. The marketing systems of cassava and cassava products in Uganda, the case of Kampala. Mimeo, Institute of statistics and applied economics, Makerere University, Kampala Uganda.
- Ngategize, P. 2001. "Input and output marketing in remote areas of Uganda: A country case study." (Unpublished)
- Nkonya, E.M., E.Kato. 2001. Agricultural Input Marketing in Uganda. A paper presented at the IFPRI Policy workshop, June 25-26, 2001, Kampala Uganda.
- North, D.C. 1990 "Institutions and Transaction cost Theory of Exchange." In J.E. Alt and K.A. Shepsle (eds), *Perspectives on Positive Political Economy*. London Cambridge University Press: 182-94.
- PMA (Plan for Modernization of Agriculture), 2000. Project Report Submitted to Ministry of Finance and Economic Planning, Government of Uganda, Kampala.
- Ponte, S. 2002. *The Coffee Crisis: Quantity vs quality in production and consumption*. Center for Development Research (CDR) Policy Brief Copenhagen, Denmark.
- Registrar of companies, 2002. Personal communication.
- Siles, M., Robinson and S. Hanson, 1994 "Socio-economics and the probability of Loan Approval" *Review of Agricultural Economics*, 16: 363-72.
- Social Capital Interest Group 1999. *Social Capital: A Position Paper* SCIG, Michigan State University. Online at <http://www.ssc.msu.edu/internat/soccal/position.html>.
- The New Vision*, 2002. Uganda's Daily Newspaper, February 22, 2002, Kampala Uganda.
- Uganda Bureau of statistics (UBOS) 2002. *Uganda National Household Survey, 1999/2000. Report on the Crop Survey module*. The Republic of Uganda: 1-30.
- Uganda Bureau of statistics (UBOS) 2000. *Statistical Abstracts*, 2000. The Republic of Uganda: Various sections, Pp1 – 176.
- Uganda Investment Authority (UIA), 2000. Raw data UIA.

Vinlaw Associates, 1997. Farm gate to export market study of maize and beans. Unpublished  
Consultancy report submitted to USAID Agribusiness Development Center (ADC) Project.

Wilson, P.N. 2000. "Social Capital, Trust, and the Agribusiness of Economics." *Journal of  
Agricultural and Resource Economics* 25: 1-13.