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Market opportunities for Ugandan banana products: National, regional and global perspectives

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Abstract

Banana (Musa spp.) is the most important food crop in Uganda, and it is also the most important income source for the majority of the Ugandan farmers, especially in the Western Ugandan Regions. Besides pests, diseases and declining soil fertility, marketing seems to be a major constraint to production and income generation in the banana sector. To address these problems, the project on Improvement of Banana Marketing and Utilization in Uganda, a joint venture of NARO/ NBRP, Makerere University and Inernational Institute of Tropical Agriculture (ITTA), seeks new ways of marketing bananas nationally, regionally and globally. The paper discusses the findings of initial surveys on the status quo of banana marketing in Uganda. During a farm and household survey, data on banana supply, marketing and demand have been collected and analysed. In a survey of secondary data, international banana markets have been evaluated. It is clear that, although the second biggest banana producer in the world, Uganda lags far behind in terms of trade shares. However, global markets are of high competition, high dynamics and a high diversification in terms of banana varieties and products. Conclusions are that, the domestic markets, for the fresh product of *matooke*, price and income elasticities are low, and productivity increases are not likely to yield revenue increases for farmers. What could be feasible, is re-organising the marketing chain, in favour of the farmers. Processing has various promising perspectives especially in the high elasticity juice and alcoholic beverages sector. Concerning international trade, Uganda faces high competition on saturated markets. Key factors are the re-organisation of domestic production to obtain quantities and qualities required on global markets. Niches like seasonal highs of prices, and organic fruit markets can be exploited.

Key words: Domestic markets, market chain, Musa spp., revenue

Introduction

Uganda has a huge potential for banana production. Yet it seems as if this potential is not fully exploited, neither in terms of income generation on farm level, nor in terms of export earnings. Given the high potential in production, it is assumed that the constraints lie rather in marketing than in production systems. Consequently, various efforts are made to improve marketing of Ugandan banana products, be it on national or international level. The project 'Improvement of Banana Marketing and Utilization in Uganda (IBMU)' aims at establishing improved marketing and processing systems in the Ugandan banana sector, especially in favour of small scale farmers and producers.

One of the basic assumptions of the project is that from its early stages, knowledge on existing and potential markets is required. This assumption is derived from the definition of marketing as 'a management concept based on markets and oriented towards markets' (Weis 2003:15), which means that without proper market information, marketing, in whatever form, cannot be done properly. The first step of the work was thus to undertake market research both in Uganda and on international markets. The objective of these activities was to identify market opportunities and constraints on domestic and international banana markets from Uganda's perspective. The results are documented inthis paper. The following section is dedicated to a brief description of materials, methods and geographic study areas. Thereafter, two banana market segments, the national one and the international one with its sub-segments are discussed. In the final section, conclusions from the market study findings are drawn.

Methodology

The study on the domestic market is based on a baseline survey conducted in January/February 2004 in four districts in Uganda. These districts represent the major consumption zones of bananas (Kampala, Luwero) as well as the major

production zones (Mbarara, Bushenyi) in Uganda. Primary data were taken on production, marketing/trade and consumption of banana products. 410 randomized samples (producers, consumers, traders) were investigated. The data were analyzed with descriptive, uni-variate statistical methods.The data on international banana markets come from secondary sources, mainly FAO statistics and from a recent study on European banana markets.

Results and discusion

Domestic banana markets

Uganda produces about 10,000,000 tons of banana annually and therefore ranks second in world banana production behind India (FAO, 2004). About 30 % of the Ugandan cropland is dedicated to bananas (Ngambeki *et al.,* 2003). Ugandans consume 220 kg per caput and year of bananas, which is much more than the consumption of cassava (107 kg per caput and year) or maize (30 kg per caput and year) (FAO, 2004). Bananas an important food crop but also an important cash crop, with 50 to 85 percent of the harvest sold, especially in Western Uganda. When looking at Ugandan banana, one has to consider the high diversity of varieties. The most common type is the highland cooking banana (*matooke*). Others are dessert bananas (*bogoya, sukali ndizi)*, brewing bananas (*mbidde*) and roasting bananas (*gonja*).

Consumption in Uganda is mainly *matooke, gonja and mbidde*, with 184 kg per year (FAO, 2004). Table 1 shows the banana consumption as found in the baseline survey. 45 % of the Ugandan households' food budget go into *matooke* (Table 2), and only very little into other fresh consumed banana varieties. As urban residents consume a lot of *matooke*, this banana type is also the most traded one in Uganda. The banana trade is dominated by traders and their agents (Table 3).

It is this particular domestic trade of which a lot of problems are reported as listed below. Price elasticity is low with a value of -0.1, and income elasticity is reported to be positive, yet at a very low level of 0.16 (Adupa and Ngambeki, 1994, cited from Ngambeki *et al.,* 2003). Other data (FAO, 2003, World Bank, 2003), suggest that during the decade between 1991 and 2001, banana consumption has increased by three percent alongside with a 63 percent income increase in Uganda, which implies an income elasticity even below 0.1. It can be said that the domestic market for fresh cooking banana is saturated, and a production increase would in short term inevitably lead to a sharp price decline.

Product perishability plays a major role in the marketing system. As bananas have to be harvested throughout the year and sold on the spot due to the lack of storage facilities, farmers are exposed to the bargaining power of traders and their agents, which, together with the market structure and conduct described below, results in the risks of non-payment and low prices for farmers. On the other end of the chain, the consumer markets, perishability causes losses to traders, as ripening bananas often have to be sold at low prices. This price risk is handed through the chain from the trader down to the farmer. Other problems are infrastructure and the market structure. The system is dominated by the broker/ agent/retailer line rather than direct sales from farmer to consumer. About 50 % of the whole produce is channelled through this system, which gives the agents involved a strong market position and opens room for collusion. According to the baseline survey, the first agents in the line, the brokers, hold the strongest position in the market, as they control up to 50 % of the produce. The wholesalers control only about 30-40 %, which implies that a lot of bananas is sold to the consumer by the brokers themselves.

Both farmers and traders report many problems related to marketing and markets. In the survey, farmers valued the problem of unstable markets and low prices much higher than agronomic problems. The required solution to banana production problems on the farmers' side is better market access. Farmers do not consider price fluctuations as a problem.

The major constraints for traders seem to be low prices and high transport costs (in connection with bad roads), as well as losses from ripening. Apparently, liquidity aspects seem to be a lesser problem, the same holds for government interferences, competition or the interaction with the upstream agents (Table 4).The structure of the banana market and the problems listed in this section yield an uneven distribution of market revenues. It can be seen that farmers obtain only 17 % of the retail price per bunch of banana, whereas the rest goes to agents, brokers, wholesalers and retailers. Transport costs account for about 15 % of the consumer price and thus for about 80 percent of the whole costs (Spilsbury *et al.,* 2002).

Processing and demand for processed products

It is said that in Uganda, about 200 processed banana products exist. Among them are juice, wine (*tonto*), gin (*waragi*), banana pulp based bakery (*kabalagala*) and derivatives from fibres and stems. However, only a few of these products are fully developed and industrialized (e.g., gin), most of them are produced locally, in small scale and often poor quality. The following section gives an overview on consumer attitudes and preferences. Table 5 shows the most important banana products. Although consumption patterns seem to differ across regions in terms of amount consumed, the ranking of product consumption seems to be the same. Pancakes made of cassava flour and banana pulp (*kabalagala*) are the most common products, followed by juice and their derivatives like gin and beer. Banana-flour based bakery is less common, and so are banana chips.

However, it can be seen that only relatively few people (out of a sample of 80 in the survey area, only 35 consume *kabalagala*) consume processed banana products at all.

Table 1. Consumption of Bananas at Household Level

Type of Bananas	High Production Area *N* = 80		Pilot Study Area *N* = 34	
	Percentage who Consume	Average Consumption /Year	Percentage who Consume	Average Consumption /Year
Bananas	90.00	-	100.00	-
Matooke	82.50	188.21 bunches	100.00	101.07 bunches
Ndiizi	57.50	339.43 clusters	61.76	75.14 clusters
Bogoya	58.75	97.79 clusters	44.12	69.53 clusters
Kayinja (mbidde)	0.00	0.00 clusters	0.00	0.00 clusters
Others (Gonja)	13.75	77.27 clusters	14.71	27.80 clusters

Source: Survey Data

Table 2. Proportion of Bananas in the Household Food Budget (%)

Type of Bananas	High Production Areas *N* = 80		Pilot Study Area *N* = 34	
	Mean	Standard Deviation	Mean	Standard Deviation
Bananas	45.63	23.46	61.37	20.47
Matooke	35.30	22.98	54.97	20.75
Ndiizi	4.72	7.34	3.24	4.02
Bogoya	4.79	6.91	2.78	4.85
Kayinja	0.00	0.00	0.00	0.00
Others e.g Gonja, Kibuzi	0.83	0.29	0.37	1.24

Source: Survey Data

Table 3. Major Source of Bananas for Consumers

Source	Rural Area		Urban Area	
	N	Percent	N	Percent
Traders in the Market	35	43.75	29	85.3
Cooperative Stores	0	00.00	0	00.0
Supermarkets	0	00.00	0	00.0
Farmers	8	10.00	2	5.9
Marketing Agents	27	33.75	3	8.8
Not Applicable	10	12.50	-	-
Total	80	100.0	34	100.0

Source: Survey Data

Table 4. Constraints Faced by Traders in Banana Marketing

Nature of constraint	N	Percent
High Transport Costs	13	16.3
Low Sale Prices	12	15.0
Theft of Products	6	7.5
High Government Taxes	3	3.8
Lack of Vehicle/Bicycle Spare Parts	2	2.5
Competition Among Traders	2	2.5
Consumers Buying on Credit	2	2.5
Lack of Credit Facilities	4	5.0
High Prices of Bananas from Middle men	2	2.5
Shortage of Trucks	1	1.3
Bad Roads	11	13.8
Losses from Ripening	8	10.0
Seasonal Supply Fluctuations	2	2.5
Lack of Storage Facilities	1	1.3
Other	11	13.8
Total	**80**	**100.0**

Source: Survey Data.

Table 5 Percentage of Households Buying Processed Banana Products

Product	Survey Area		Pilot Area	
	N	Percent	N	Percent
Banana Pan Cakes	35	74.47	11	32.4
Alcohol (Gin)	0	0.00	10	29.4
Banana Juice	7	14.89	3	8.8
Banana Flour	0	0.00	2	5.9
Banana Beer	1	2.13	5	14.7
Banana Chips	2	4.26	1	2.9
Banana Cakes	0	0.00	3	8.8
Other	2	4.26	-	-
Total	47	100.0	35	100.0

Source: Survey Data

Most people do not buy the products because they do not know them, or they are not available. Issues like quality and taste seem to be a minor issue when directly asked for. However, such attributes could also be assigned to the relatively high response in the field "do not like them". Money seems to be a minor issue, yet that has to be discussed in further detail.For those who purchase locally made banana products, the reasons match with those given for non-consuming. Quality is not an issue for non-consuming, but consequently for consuming. Again, money is not the decisive factor for consuming: Products are not consumed because they are cheaper, but because of the consumer preferences concerning freshness, taste and quality attributes like chemicals. The survey also showed that the distribution system of the products is not yet well developed. Most of the products are purchased in small shops or market stalls, supermarkets do not play a big role in the trade.

Another indicator for a not yet well developed marketing system is the fact that processed products are not advertised. Most of the information on processed products seems to be spread locally through friends and relatives, some little information on these products is spread through training. As a conclusion from this section, it can be said that at present, banana processing and marketing of processed products is at a very early development stage. Thus there seems to be a potential for further developing some of the products, especially the juice and derivatives. There is even more hope as the same databases (FAO, 2003, The World Bank , 2003) that show a low increase in *matooke* consumption during income increases show a sharp increase in the consumption of alcohol and stimulants in Uganda. This yields hope for a future market potential especially for *tonto*. Improving quality of processed seems to be a promissing issue (as quality is a major criterion for consumer decisions), and increasing advertising and information issues might also be promising. These hypotheses are strengthened by the fact that money is not (yet) the decisive criterion for buying decisions. This yields some hope that there is still space for quality improvement at slightly higher prices than at present.

International banana markets

One of the most prominent arguments concerning Uganda's role on international banana markets is that despite the fact that Uganda holds the second rank in banana production, it only holds about rank 40 in total banana exports. Yet, one has to properly differentiate the products that are commonly known as 'bananas'. International statistics like the FAO mainly discriminate between desert bananas and non-desert bananas (in the following section, we refer to them as plantains, although this is botanically not correct, as in this case the 'plantain'-term also includes cooking bananas and other varieties other than plantains). They do not further distinguish non-desert bananas like we did in the domestic market section. However, already a look at the two different varieties gives a lot of information on how international banana markets function and which role Uganda is playing on them. Worldwide, about 68 million tons of desert bananas are produced annually, compared to 32 million tons of 'plantains'. Of the desert bananas, about 18 % are traded, whereas of 'plantains', only about 1.2 % is traded, which makes them a non-tradable.

Uganda ranks first in 'plantain' production, yet holds an insignificant 16th rank in 'plantain' exports. In desert banana production, Uganda ranks 23rd, and 38th in trade. When discriminating varieties, the rank differential is smaller than the overall one, although it is still high. It is also of high interest that according to official data, Uganda exports much more desert bananas (1560 mt) than 'plantains', which are officially close to zero, at least in official statistics of 2001 (FAO, 2003). Other sources however talk about 12,500 t of *matooke* annually crossing the border to Rwanda in 2001, and about 6,600 t of desert bananas going to Kenya in the same year (Spilsbury e*t al.*, 2002).

Uganda's constraints on international markets

Before looking at the global banana markets themselves, we should discuss specific constraints of Uganda on these markets. Uganda's landlockedness results in difficult access to harbours due to long transport on often poor roads. The lack of cooling and packaging facilities leads to a poor quality of the produce at the harbours. The distance to target

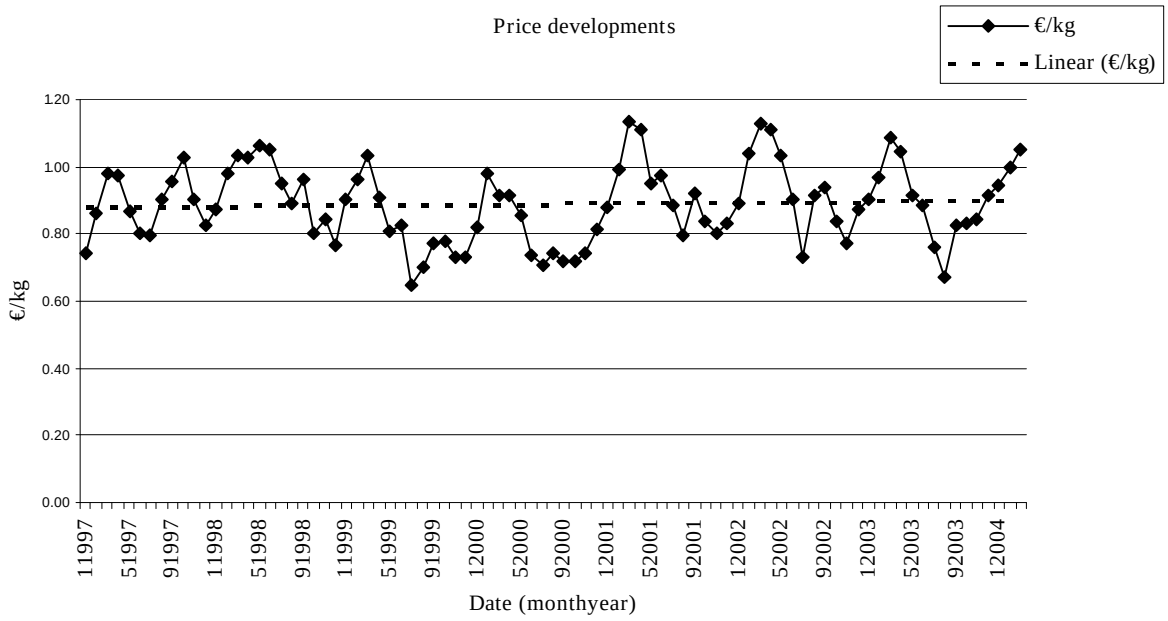

Figure 1. Price trends for desert bananas in the EU

markets like Europe is about one third longer than for example from West Africa and goes even beyond the maximum feasible transport period for fresh bananas. Small scale and scattered production alongside with a poor local infrastructure impose difficulties in gathering sufficient quantities for export, let alone stability of supply over a longer period of time. For small scale farmers, it is also difficult for farmers to obtain permanent high quality, e.g., avoid stains and dents on the fruits etc. Knowledge on international markets is often poor, especially concerning potential trading partners, prices and quality aspects as well as regulations like the EU. Some exporters have only one trading partner, with respective results in prices obtained. Lack of national quality control and certification bodies leads to expensive quality control and certification procedures. Problems with pests and diseases affect especially organic farmers.

The situation on potential foreign markets

The most interesting global markets for Uganda are Europe, with the EU as the core market and Eastern Europe as a potential future market, as well as the Middle East, due to its proximity to Africa. Other markets that may not be the first choice for Ugandan exports but may determine world market dynamics are the Americas and East Asia, especially the emerging Chinese market. The following section discusses the situation on the desert banana markets by region.

The European market

The presently regulated EU market will be deregulated in 2006, which will bring about major changes in prices, quantities and competition on this market. Moreover, the EU-enlargement to Central and Eastern Europe will bring about new markets. So far, EU markets do not look very dynamic. Prices have been at a stable trend during the last 7 years (Fig. 1). This certainly reflects the strict regulation (quota), but also a certain stagnation in consumption. In fact, per capita consumption in the EU has declined in the decade from 1991 to 2001 at overall 19 percent or about 2 percent p.a., from initially 10.5 kg per caput and year to now 8.6 kg per caput and year. Highest losses in consumption can be seen in 8 of 15 countries, especially high income countries like Germany, Austria, France, Belgium etc. whereas growth rates can be seen mainly in lower income countries of the EU-15 (Fischer, 2004). This implies a decreasing income elasticity of demand that becomes negative in high income classes. Consumption and prices are expected to be stable until the deregulation in 2006, then prices are expected to decline. The decline depends on the tariffs applied on non ACP-bananas. At a (low scenario) tariff of 75 US $, imported quantities would increase by 13 %, while prices would decline at a rate of 20 %. The higher the remaining tariff, the lower such changes would be: At a tariff of 200 $ per t, quantities would change by three percent while prices would change by 10 percent. In all scenarios, a relatively low price elasticity of demand can be observed. Price effects from the 75 $ tariff scenario on world markets are expected to be negative (-10 %), whereas quantity effects from the increased EU imports would yield a 5 % increase of demand on world markets (FAO, 2004).

Eastern Europe

Eastern Europe shows more market dynamics than the present EU-15. Banana prices for Eastern Europe (cif Hamburg) show an increasing trend, coming from a lower level than the EU prices. Concerning quantities, Eastern European banana imports are expected to increase by 20 % through 2010, from about 900 thousand mt to 1100 thousand mt. The biggest banana markets in Eastern Europe will be Poland (with about 300 thousand mt) and former Yugoslavia (160 thousand mt). The Russian region will experience a slight increase of 17 % from 590 thousand mt to about 690 thousand tons (FAO, 2004).

Middle and Far East

The Middle and Far East will experience the biggest growth rates in terms of demand for imported bananas. Demand in the Middle East will increase by 25 % until 2010, whereas import demand in the Far East, including China, will increase by almost 40 % (FAO, 2004). However, especially in the case of China, it is unclear where this increasing demand will be covered by increased domestic production or from outside, in particular from Thailand and Vietnam (FAO, 2003b). Japan will experience only a slight increase of total import consumption by 5 %. These imports, however, will be covered mostly by the Phillipines.

North America

North America (the USA and Canada) shows declining banana import prices over the last seven years, both on the East and West coast. However, import demand prospects for this decade are quite positive. The US and Canada have a relatively high population growth rate, so that demand is increasing. In total, imports to the US will grow at a rate of 10 percent until 2010, with the US being the main market (about 4.2 million mt) and Canada being a minor market (500,000 mt).

Other market aspects

Seasonality of prices

As in most cases, banana prices will be declining in the next decade, means have to be sought to optimize sales. The above described price figures show besides their trends strong volatilities. It is assumed that these volatilities are seasonally induced, i.e. that more tropical fruit is consumed during cold seasons in the Northern hemisphere. Consequently, prices for tropical fruit and bananas as well are highest during these seasons. In the European Union, prices are highest around Easter, when domestic fruits are not available. Prices are lowest during the summer season, when domestic fruit is available. The same picture can be seen in other Northern regions. In Eastern Europe, prices begin to increase in December and stay high through April. In North America, we can see the same picture (FAO, 2003). It can thus be stated that by selling at the right time, premia of 25 % and more can be earned.

Quality

Quality is reported to as important as prices in terms of banana marketing (Fischer, 2004). Besides strict quality regulations e.g. in the European Union, consumer preferences are particularly strong in terms of colour, firmness and taste of the bananas. Achieving such quality requirements is crucial on international markets. Yet quality preferences differ across countries and regions. While in Germany for example, colour, appearance, odour and taste play an important role, and Cavendish bananas cover 99 % of the market, in neighbouring France, taste and origin of the banana is of highest importance, while a wide range of banana varieties is consumed (Fischer, 2004).

Specialities

Specialities are for examples organic bananas, fair trade bananas and dried fruit. Organic bananas hold e.g. in the EU a market share of 2.5 % or 88,000 mt in 2002. Despite the small market share, growth rates are extraordinarily high, the amount up to 60 % per annum. Fair trade bananas hold about 1.2 percent of the European banana market, and their growth rate is about 20 % annually, i.e. much lower than the one for organic bananas. Dried fruit represent a market share of much less than 1 % in Europe, with a growth rate of about 10 percent from 1991 to 2001 (Fischer, 2004).

Conclusion

For the domestic Ugandan markets, we have seen that at least for the fresh product of *matooke*, price and income elasticities are low, and productivity increases are not likely to yield revenue increases for farmers but will rather crash prices on markets, at least in the short term. What could be feasible, is re-organising the marketing chain, in favour of the farmers. This would flush money into rural areas and further foster rural development. However, the marketing chain cannot be re-organised only with respect to a single item, but in a comprehensive manner. Farmers have to be organised in associations in order to gain negotiation power versus traders. Market information has to be disseminated in order to avoid asymmetries that hamper successful negotiations between actors. At the same time, storage facilities at both ends of the chain have to be established in order to reduce the risk that is involved with the perishability of bananas. Such storage should be organised alongside associations, and the same holds for finance and payment schemes that would enable farmers to obtain money without risk of payment.

Processing has various promising perspectives especially in the high elasticity juice and alcoholic beverages sector. Here, it can be hypothesized that through quality improvement and better marketing, quantities sold as well as prices can be increased. Small scale industries can be set up in rural areas to foster rural development.

Concerning international trade, Uganda faces high competition on saturated markets where Uganda has still to establish itself. Key factors are the re-organisation of domestic production to obtain quantities and qualities required on global markets. Other niches like seasonal highs of prices, and organic fruit markets can be exploited, yet it has to be outlined that especially niche markets remain small and cannot promise income for a large number of producers.

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