AgWater Solutions Project
Case Study

Structure of the Lusaka Fresh Produce Market in Zambia

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The AWM Project
The AgWater Solutions project was implemented in five countries in Africa and two states in India between 2008 and 2012. The objective of the project was to identify investment options and opportunities in agricultural water management with the greatest potential to improve incomes and food security for poor farmers, and to develop tools and recommendations for stakeholders in the sector including policymakers, investors, NGOs and small-scale farmers.

The leading implementing institutions were the International Water Management Institute (IWMI), the Stockholm Environment Institute (SEI), the Food and Agriculture Organization of the United Nations (FAO), the International Food Policy Research Institute (IFPRI), International Development Enterprises (iDE) and CH2MHill.

For more information on the project or detailed reports please visit the project website http://awm-solutions.iwmi.org/home-page.aspx.

Disclaimers

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LIST OF ACRONYMS

ANOPACI	National Association of Agricultural Producer Organizations of Côte d'Ivoire
AWM	Agricultural Water Management Solutions Project
CSO	Central Statistical Office
EC	European Commission
FASAZ	Farming Systems Association of Zambia
FSRP	Food Security Research Project
GDP	Gross Domestic Product
GRZ	Government of the Republic of Zambia
ICT	Information Communication Technology
IWMI	International Water Management Institute
LUMC	Lusaka Union of Marketeer Cooperatives
MACO	Ministry of Agriculture and Cooperatives
MCTI	Ministry of Commerce, Trade and Industry
MLGH	Ministry of Local Government and Housing
MMD	Movement for Multiparty Democracy
MSU	Michigan State University
NWGH	National Working Group on Horticulture
PPPs	Public Private Partnerships
SAPs	Structural Adjustment Programmes
SSA	Sub-Saharan African
UCS	Urban Consumption Survey
UMDP	Urban Markets Development Programme
UNIP	United National Independence Party
ZANAMA	Zambia National Marketers Association
ZEGA	Export Growers Association
ZNFU	Zambia National Farmers' Union

Summary

Background

The proportion of smallholder farmers selling horticultural produce (or fresh produce) in Zambia is very low at less than 20% compared to other Sub-Saharan African (SSA) countries such as Kenya. This suggests that new demand points could enjoy substantial supply response if they link effectively to the smallholder farm sector. Strengthening these supply chains (from smallholder farmers to urban consumers) can improve lives in Zambia. Rapidly growing urban populations and renewed growth in per capita incomes in SSA are creating major opportunities for local farmers by driving rapid growth in domestic market demand for food. At the same time, these trends put enormous stress on the supply chains that these farmers rely on to respond to this increasing demand.

The potential for increasing income from fresh produce production and marketing in Zambia is increasing with urban demand fuelled by rapid urbanization and increasing income. However, for this potential to be realized, i.e. rural producers earn increased incomes and urban consumers have access to good quality produce at competitive prices, efficient marketing systems from production right through wholesaling/assembling and retailing to consumers need to be in place. The role of wholesale markets is especially important.

Currently, fresh produce marketing systems are the biggest users of "public" marketing infrastructure and have been most affected by widespread under-investment. As formal public market places have been overwhelmed by rising volumes of commodities and numbers of traders, the informal marketing sector has exploded, raising major concerns about congestion and hygiene among city planners. The chaotic state of many of these markets also means that few if any comprehensive programs have been put in place to actively link farmers to them.

There is emerging consensus that the supermarket revolution that spread across Latin America and some parts of the Middle East is not taking place as earlier envisaged in SSA for a variety of reasons, and this has profound policy implications. It suggests that private investment in modern, integrated supply chains cannot be relied upon to solve the multitude of problems – logistical inefficiencies, deteriorating infrastructure, high product waste, urban congestion, and food safety concerns – that increasingly plague traditional production and marketing systems over a time frame acceptable to most policy makers and donors. What is more, Africa's high rate of urban population growth means that a rapidly rising share of the population will be subject to these problems over time. Public engagement will be central to any improvement in these areas. This public engagement must be based on a solid understanding of these systems and on new approaches to public private sector collaboration to improve them.

Objectives

This study seeks to study the organizational and physical structure and procedures (price setting, respective fees) of the Lusaka fresh produce market with special emphasis on the Soweto Market, the main wholesaling market, with a view to making recommendations on win-win arrangements for all stakeholders and service providers involved, in particular small-scale producers. Most importantly, the study examines the actual levels of

commission charged by agents over any transaction which are normally considered as reasonable, as long as the seller receives some value in the form of a higher price or shorter waiting time at the market. This study also aims at a better understanding of both the potential value of working through a broker and a more accurate estimate of the true cost – including any hidden commission. Smallholders need to be confident they are getting the true value of their produce. That way they will increase productivity by investing in technology such as treadle or motor pumps.

The study also seeks to know the perceptions of farmers and traders to the physical infrastructure improvements as well as the role of middlemen or brokers at the markets, and qualitatively assess the cleanliness, logistical efficiency, and level of value added in the traditional wholesale and retail markets

Data and methods

Primary data for this study comes from four sources:

1. Michigan State University's Food Security Research Project (FSRP): detailed information on prices and quantities of tomatoes, rape seed, and onions in Lusaka's dominant wholesale market (Soweto) since January 2007.
2. The FSRP Urban Consumption Survey (UCS) conducted in two rounds in August 2007 and February 2008 with detailed data on household food consumption and places of purchase allow us to estimate the total size of the Lusaka market for these three products and the market share of various types of retail outlets (open air markets, street vendors, supermarkets, and others).
3. Interviews with first-sellers (male and female farmers and traders), brokers and other fresh produce market stakeholders supported by the International Water Management Institute (IWMI) during the months of December 2009 to February 2010.
4. Tracking of transacted (prices paid by retailers in Soweto Market) and prices received by first-sellers of impwa (traditional eggplant), pumpkin leaves, sweet potato leaves, Chinese cabbage, and okra.

The study covered urban consumption patterns and market channels of fresh produce, fresh produce markets organizational arrangements, market structure and the role of brokers including farmer perceptions of the role played by the brokers in fresh produce wholesaling.

Urban consumption patterns and market channels

Fresh produce is an important component of the urban households' daily diet in Zambia. Analysis of the UCS data shows that vegetables rank third in the share of an urban households' monthly food budget in all the sampled cities of Lusaka, Kitwe, Mansa and Kasama among 11 broad groups of food.[1] The budget share of fruits is relatively smaller but is comparable to that of legumes or pulses (beans, groundnuts, Bambara nuts, cowpeas, etc). When fruits and vegetables are combined, their share is second to cereals and staples

[1] The broad groups of foods were cereals and staples, meats and eggs, dairy products, vegetables, fruits, fish, sugar and oils, legumes, other foods, and food purchased and eaten away from home and tobacco and alcohol.

(maize, wheat, rice, sorghum, millet, cassava, sweet potatoes), the most consumed food category.

The UCS used total household expenditure per adult equivalent as a proxy for income and ranked the households based on this into low, medium and high expenditure/income terciles. This allowed assessment of fresh produce consumption by household expenditure/income levels. Findings show that the share of the food budget of vegetables is higher among the low than the high expenditure/income households. However, the amount of money spent in absolute terms is larger among the high expenditure/income group. The consumption of fruits is higher among the high expenditure/income group in terms of both the budget share and the absolute amounts of money spent by the households. This is in agreement with the global trend that the consumption of fresh produce increases with increasing income levels.

Urban households in all the sampled cities in the UCS largely procure their fresh produce from the traditional market system (market stands, informal traders using rudimentary structures near the markets and in neighbourhoods and street and mobile vendors). Unlike the supermarket revolution that has in the past three decades swept developing countries in South America and parts of Asia, the market share of supermarkets in SSA countries including Zambia is still very small. The UCS data shows that the market share of the traditional system ranges from 95-97%, leaving the modern or formal system (grocers, mini-marts, supermarkets) with a paltry 3 to 5%. As expected, the market share of the modern market system is highest among the high income households, but still the share is much less compared to that of the traditional market system (90-94% compared to 6 -10%) within this income group.

Organizational arrangements of fresh produce markets

Markets in Zambia provide opportunities for income generation to the ever-growing informal sector, which was initially induced by privatization of government-owned and managed companies following adoption of economic liberalization policies. The informal sector is growing due to limited formal employment opportunities, the increasing number of young people who are annually being churned out of schools, colleges and universities into this sector. These markets have been quite politicize, although this has reduced in recent years.

In an effort to improve the management of markets, the government, with assistance from the European Commission, implemented an Urban Markets Improvement Programme which included improving market structure as well as developing a better institutional and legal framework for their management. The new market management model outlined under the Markets and Bus Stations Act requires that markets be run by a market board drawing representatives from all stakeholders. Implementation of this arrangement has been slow as it has met resistance from a number of stakeholders with vested interests. Some markets have started electing market boards with representation from the city authorities, Ministry of Local Government and Housing (MLGH), Ministry of Commerce, Trade and Industry (MCTI), marketers and an ordinary customer residing within the area. The new Soweto Market has no representation from fresh produce wholesale marketers (either traders or farmers), and did not even make any provision for this activity at the market.

The institutional set up and collaboration is also contributing to the confusion: agricultural marketing including that of fresh produce wholesaling is a responsibility of Ministry of Agriculture and Cooperatives (MACO) and even the market cooperatives are registered with this ministry. Yet the ministry is not even remotely involved in market issues. Though markets are primarily a responsibility of MLGH and local authorities with the MCTI having a role to play with regard to trade and commerce issues, MACO also needs to be involved, especially in markets where wholesaling fresh produce takes place. Only MACO can better appreciate the needs of this important trade and promote its needs.

Market structure

Lusaka's market structure[2] is conceived as the geographical extent over which product flows to Lusaka. Maps were used to map the 'marketshed'[3] for tomatoes, rape and onions based on the districts that provided 80% of Lusaka's supply of each crop from mid-January 2007 through mid-January 2009. The geographical extent of these marketsheds follows the perishability characteristics of the crops: the city draws nearly 60% of its onions from imports, with half of this coming from Johannesburg, about 1,200 km away; the city draws on five nearby districts for 87% of its tomatoes supply, while it needs only the two closest districts to assemble 83% of its rape supply. Rough estimates of the mean distance to market are 44 km for rape, 69 km for tomatoes, and 539 km for onions. Very little of the supply reaching Soweto comes from peri-urban areas. Even for rape, the most perishable of the three, production areas in the two main supply districts, though close to Lusaka, are rural in nature, and not peri-urban.

Within each district, smaller production areas were identified based on definitions used by farmers and traders selling in Soweto. Typically these areas follow existing local boundaries which could include one or several villages. This measure reinforces the finding that production of rape is substantially more concentrated than that of tomatoes: 53% of total rape supply to Lusaka comes from the top three areas (Monika, Assisi both in Chong we and Mangle in Chibombo), while only 28% of tomatoes from the top three (Lusaka West, Masansa in Mkushi, and Chisamba).

Market channels

Retail channels for fresh produce include open air markets, the "ka sector" (small vendors outside of organized market places who pursue sales by locating along busy pedestrian walkways and in residential neighbourhoods[4]), modern supermarkets, and private households producing in or near the city and selling to other households.

Several patterns emerge. First, marketing channels are short. Rape is the extreme case, with nearly two-thirds being sold directly to retailers by farmers. Tomatoes show much less direct farmer-retailer marketing (7%), but nearly half of all its value is taken directly to wholesale markets by farmers. Onions, due to the large marketshed, show the most intermediation, with 72% of all products brought to Lusaka by traders, not farmers (58%

[2] The way suppliers and demanders interact to determine quantity and price of a particular commodity

[3] Like 'watershed'; the area the market draws on.

[4] "ka" is the diminutive in Bantu thus kashop is a small, rudimentary shop, katable is a small table on which a vendor sells her wares, kantemba is a small "ntemba" or kiosk.

imported plus 14% among that originating within Zambia). A second pattern is that Soweto serves as a major redistribution market for onions and tomatoes. Over 30% of the tomatoes reaching Soweto are exported out of Lusaka to Livingstone in the south, and the Copperbelt and Democratic Republic of Congo to the north. Third, the role of the "modern" marketing sector is very small. Of the total value of fresh produce purchased by consumers in Lusaka, 92% of tomatoes and onions and 96% of rape is purchased in open air retail markets or the "ka sector".

Fourth, regional trade dominates the onions system and is also important in tomatoes. Over half of the onions reaching Lusaka are imported, and an important share of the 38% that is shipped from Soweto outside of Lusaka likely goes to the DRC. Thus, Zambia is likely a net importer of onions, although data for other areas of the country to confirm this could not be found. We find no evidence of imports of tomatoes, but clear indications from brokers and wholesalers in Soweto that significant volumes, probably more than half of the 31% that is shipped out of Lusaka, are exported to the DRC. Zambia is thus likely a net tomatoes exporter. Only in rape does regional trade play no role.

Evidence on the role of urban horticultural production is mixed. The UCS shows that only 2% of tomatoes and 3% of rape and onions are purchased from other urban households. Independently, the data on volumes entering Soweto show all important supply areas for all three crops to be at least several kilometers outside residential areas of the city. Yet 65% of all rape reaching retail markets comes directly from farms with small-scale retailers typically going to those farms and buying entire plots of rape. These farms are likely close to the city and some may reasonably be considered urban. More information is needed on this aspect of the trade to more firmly establish the importance of urban production of green leafy vegetables. For tomatoes and onions, however, urban agriculture clearly plays a very small role.

The role of brokers in Soweto Market

Tabular analysis showed that, with the exception of rape, in which essentially all sales are through brokers, there is a mix of brokered and unbrokered transactions. Onions, as expected, show the lowest rate of brokered transactions; and for both tomatoes and onions, farmers are more likely than traders to sell through brokers. The differences between farmers and traders selling tomatoes are not large; 99% of tomatoes farmers sell through brokers while 89% of tomatoes traders do so. This suggests that perishability is more important than search costs in driving the seller's decision.

A probit analysis showed that farmers are much more likely than rural assembly traders to sell through brokers, and the small numbers of wholesalers are less likely than rural assembly traders to use brokers. It also showed that women are more likely than male sellers to use brokers. In addition, the seller's lot size is positively and significantly associated with the probability of selling through a broker. This implies that the brokers are more interested in working with larger sellers and perhaps not making these services

available to the smaller sellers who may be most in need of them; yet these are problems that small players face in many markets[5].

Farmers normally contend that brokers get, in addition to the official commission agreed with firs-sellers, an unofficial commission which is the difference between the price paid by the traders and the price given to first-sellers. Findings show that the official commission achieved by the brokers is about 9% for the crops where the commission is negotiated between the broker and seller before selling, while it is only about 1% for okra and traditional eggplants for which largely no prior negotiation is made on the commission with the broker and seller only agreeing the price at which to sell the commodity. The sellers and brokers would normally agree on a price to give the sellers without any commission after which the brokers would sell at whatever price they could and keep the balance. Using the price paid by the retail traders and that reported by the first-sellers less the commission reportedly paid to the brokers, the broker commission (total) was found to range from 15% to 22% which is high compared to the normally used 10%. The total broker commission tended to be significantly higher between 0700 and 0800 in the morning for tomatoes while it was significantly higher between 0600 and 1000 for rape.

Thirty-five male and female farmer first-sellers were also interviewed to learn their experiences with regard to their relationships with brokers. The issues explored were reasons for selling through a broker, advantages and disadvantages experienced by selling through a broker, benefits from selling through a broker as well as how relationships with brokers can be improved. Respondents were allowed to give as many responses as they wished, and the relative frequency of each response among all the responses per question was used to gauge or rate its importance or significance. The female farmer first-sellers were less articulate and largely indicated that they were selling at the mercy of the brokers for which they literally had no choice. If they failed to negotiate they risked losing their merchandise. The men were more articulate and the following were the results of the analysis:

The majority of the farmers sell through brokers largely because they found the system in place and brokers would normally block them from selling on their own (45%).

A more positive note was that produce handled through brokers was less likely to be stolen (35%). That brokers provided security to the produce that they handled was the most important advantage farmers found (56%). Merchandise which is being handled (sold) through a broker is less likely to be stolen as the brokers are well known in the market and have the clout to safeguard their wares. Farmers also contend that the same brokers can organize for the merchandise being sold directly by the farmer to be stolen.

That brokers more easily found customers was far less important (16%). Much less important was that brokers sometimes provide inputs and that selling through brokers gives farmers time to other things (9% each). That farmers have more time to attend to other

[5] The mean lot size by gender of first-sellers was not significantly different for tomatoeses and rape (α=0.253); that of women was significantly higher (1%) for tomatoeses while the opposite was true for rape (1%). There are only about 3-4 women first-sellers who deal in tomatoeses and they deal in relatively large quantities (one is a commercial farmer and former government minister and the other 2-3 are seasoned traders)

things while their produce is being sold by brokers is one of most important benefits of selling through brokers the world over, and it is unfortunate that the farmers in Soweto cannot benefit from this while the wholesaling system at Soweto forces them to sell through brokers.

The main disadvantage of selling through brokers was the lack of transparency in pricing, whereby brokers get a 'hidden' commission without the knowledge and consent of the farmer (67%). Farmers contend that the price markups these brokers add end up slowing the sales (17%) after which the brokers go back to the farmers to ask for a reduction in the price on top of which they will still put a markup for themselves (11%).

The above notwithstanding, 28% of the interviewed farmers reported having stable relationships with brokers for an average period of 6 years. However, 19% of the farmers who reported having stable relationships with brokers reported having terminated their past relationships with brokers due to dishonesty and misappropriating sales proceeds. The main benefits from these relationships were provision of market information in terms of supply and demand and prices (61%) and inputs (26%). However, 17% of the farmers who reported receiving market information from the brokers contended that the information is quite often not reliable as some brokers would simply entice the farmer to supply so that the broker can raise some income through the commission he will charge through selling on behalf of the farmer. The brokers know that once farmers have brought produce to the market they would sell at whatever price as it becomes very difficult to take the produce back on account of logistical challenges as well incurring extra costs such that his/her decision is driven by minimizing loses rather than maximizing returns. About 26% of the farmers reported having input credit from brokers.

Farmers felt that relationships with brokers can be improved if the brokers were more honest (25%). Some farmers felt that the government should remove the brokers from the markets and have alternative security arrangements (19%). Others felt that pricing should be transparent (15%). There is also some degree of desperation on the part of the farmers as a significant proportion felt that there was nothing that could be done as they had no control over the brokers. The brokers categorically state that the market is 'theirs'.

Key issues

We have seen that fresh fruits and vegetables are important in urban diets and their consumption is expected to increase with increasing urbanization and income. This demand is important to stimulate production from the rural farming sector which would lead to increased income and poverty reduction. However, rural-urban linkages, especially at the level of wholesale markets, need to function effectively. The Structural Adjustment Policies (SAPs) and associated economic liberalization have resulted in reduced numbers of people in regular paid employment and increased numbers of people with irregular employment, entering the agricultural marketing systems including the brokers. These have primarily been seeking a personal livelihood from marketing and have little desire to develop the efficiency of the system itself. This has not helped the functioning of the fresh produce markets.

We have also seen that the market share of fresh fruits and vegetables of the modern market system is very low and it is particularly so for the most consumed vegetables (rape, tomatoes, local leaves and onions). Yet the traditional system, especially at the wholesale level, gets few investment resources for both hard market infrastructure (physical works) and soft infrastructure (e.g. market information, grades and standards, etc.). Thus the following urgently needs to be noted:
The modern market system is growing. However, the rate of growth is likely to be much slower than once thought and too slow to transform traditional market systems over any acceptable time frame for development planners and other stakeholders.

The importance of the traditional market system for the foreseeable future cannot be over emphasized. There is a need for improved hardware infrastructure especially at the wholesale level (e.g. Soweto Market), including:

- A wholesale market for fresh produce needs to be urgently developed as there practically is not any in Lusaka. This need not be an elaborate structure as long as it has good paving with provisions for drainage, refuse disposal, entry and exit points as well as loading and off-loading bays for trucks. Brokers currently tell farmers that the current market is there because they are the ones who established it using underhand methods. Transparency in pricing would greatly improve the efficiency of the markets making both sellers and buyers happier and this can only be achieved with well managed brokering systems.
- To be linked to greater private sector involvement in infrastructure development, ownership and management within the Public Private Partnerships (PPPs) concept for improved coordination and linked to improving the capacity of brokers through training and ensuring that only registered brokers operate, developing and use of grades and standards.
- To be linked to appropriate legislation in place under which the brokerage system can operate in addition to the Markets and Bus Stations Act and the Public Private Partnership Act.
- To learn from success stories in the region such as the organized system in South Africa and the development of markets in collaboration with national farmers' organization in Tanzania.

The mobile phone revolution offers great potential for improved flow of information across the whole supply chain. Market information would help minimize the fresh produce supply gluts causing collapse of prices. When available in different markets, this would also help traders and farmers take advantage of spatial price arbitrage. The ZNFU horticultural market information system developed in conjunction with FSRP is yet to be implemented due to lack of resources, and once in place could help a lot in this regard, especially after it is replicated in other places such as Livingstone or Choma in southern Province and Ndola/Kitwe and Kasumbalesa on the Copperbelt.

Priority investment options
One of the main reasons the domestic horticultural sector in Zambia is not developing as in other countries in the East and Southern African region is the lack of a national level

organization or institutions to spearhead the lobbying of policy makers and other stakeholders to address issues relating to its development. Uganda and Kenya, for example, have a number of such stakeholder organizations and there are even national policies and strategies on horticulture which are non-existent in Zambia. The Zambia Export Growers Association (ZEGA) is a membership organization (50 members) addressing the interest of its members who largely export fresh produce to Europe and has been supported by the EU.

The first step to address the issues affecting the horticultural sector in Zambia in general and that of wholesale markets in particular is the formation of a National Working Group on Horticulture (NWGH). Stakeholders at a workshop on the "Development of Horticulture Markets in Zambia" organized by the Agriculture Consultative Forum (ACF)/FSRP in early July 2010 agreed to select an interim committee for this group[6]. This committee will spearhead addressing issues affecting the sector on behalf of stakeholders. This avenue is open for more stakeholders (especially those who were not represented at the workshop) to buy in.

The primary issue to be addressed by this group is to sensitize and lobby policy makers on the problems of fresh produce markets especially at the wholesale level. The group will especially address the following as a matter of priority:

Developing a new fresh produce wholesale market on the outskirts of the City of Lusaka based on appropriate cost-effective design and a structure encompassing a concrete slab floor to facilitate drainage and cleaning, designated entry and exit points for vehicular and human traffic, loading and off-loading bays, storage facilities (which may or may not have refrigeration facilities) and roofing among others. This may entail visits to countries such as South Africa and Mozambique to learn from experiences in this field. Such a market is being developed in Uganda as well as Namibia. This investment avenue is necessary because it is inconceivable to develop the fresh produce wholesale section of Soweto Market considering problems with its legal ownership and limited space compounded by traffic congestion in the city.

The NWGH would also work with other stakeholders to attract investment in infrastructure development, ownership and management of the market within the framework of the PPPs concept as enshrined in the Public Private Partnerships Act No. 14 of 2009 of the Laws of Zambia.

Concurrent with the above developments would be the development of a legal and institutional framework under which brokerage activities at the market can be undertaken to achieve a win-win outcome for all stakeholders. An example of a such a situation is at the Johannesburg market where the market charges 5% of all sales while the registered and regulated brokers negotiate a commission of about 7.5%; an arrangement which gives the farmer or trader better service. For example, a farmer would only need to drive in, have his produced weighed, offload where his broker is located and drive out and then his/her sales would later be deposited in his/her account. In Soweto Market, brokers take all the 20% of sales without giving anything to the market to be used for maintenance and service

[6] The proceedings of the workshop are appended as Appendix 2.

provision purposes while farmers or first-sellers get no service at all. Poor brokerage has significantly contributed to smallholder farmers' disinterest in marketing fresh produce, which is unfortunate considering its potential for rural poverty reduction.

Another urgent issue to address would be the implementation of a horticultural market information system. The system developed by ZNFU/FSRP has not been implemented due to lack of funds. While ZNFU has continued looking for funds to implement the system, other interested parties can buy into this, especially ZNFU which largely depends on donor funds for its operations. The system is designed to capture and disseminate hourly prices and quantities available in the market. Opportunities exist to add into the system additional information relevant to the whole fresh produce supply chain.

The market development highlighted above would need to be replicated in at least two other markets (one each on the Copperbelt and Southern Province). These three will act as major links to markets in other parts of the country and indeed to regional markets.

It is expected that improved wholesale markets will stimulate producer participation in the supply chain. However, it is imperative that smallholder participation is enhanced through development of strategically located storage or packing houses for bulk produce before transportation to markets. Investment in these can be facilitated through farmer organizations with appropriate government or donor support or through PPPs. Other supply chain issues would be appropriately addressed through stakeholder articulation spearheaded by the NWGH as need may arise.

1. BACKGROUND

1.1 Introduction

The proportion of smallholder farmers selling horticultural produce (or fresh produce) in Zambia is low at less than 20% compared to other Sub-Saharan African (SSA) countries such as Kenya. This suggests that new demand points could enjoy substantial supply response if they link effectively to the smallholder farm sector. Strengthening these supply chains (from smallholder farmers to urban consumers) can improve lives in Zambia in several ways. First, because yields per unit of land area can be high, many of these crops provide the possibility for land constrained[7] farmers to become more commercialized, which has positive effects on incomes. Second, fresh produce crops provide a wide array of opportunities to add value through packaging, canning, slicing and dicing, and production of juice, sauces, preserves, and inputs to other food processing activities. Such value added creates off-farm employment, which is a major channel through which rural households escape poverty. Finally, the nutrients in horticultural crops (particularly micronutrients, vitamins, and trace elements) can make a critical contribution to improving diets.

Rapidly growing urban populations and renewed growth in per capita incomes in SSA are creating major opportunities for local farmers by driving rapid growth in domestic market demand for food. At the same time, these trends put enormous stress on the supply chains that these farmers rely on to respond to this increasing demand. Tschirley and Hichaambwa (2009) report that Africa has the highest urban growth rate of any developing area, currently 3.7% per year, and projected to remain above 3% through 2030. Urban populations will grow about 170% over the next 30 years, far outstripping rural growth and pushing the urban population share above 50% (World Urbanization Prospects, 2007).

The potential for increasing income from fresh produce production and marketing in Zambia is increasing with urban demand fuelled by rapid urbanization (population growth) and increasing income. According to Jayne and his co-workers (2007)[8] the share of income of smallholder farmers of fresh produce in Zambia is about 27.5%, which is comparable to that of maize (28.2%), and there is still potential for further increase. However, for this potential to be realized and for rural producers to earn increased incomes and urban consumers to have access to good quality produce at competitive prices, efficient marketing systems from production right through wholesaling/assembling and retailing to consumers need to be in place. The role of wholesale markets is especially important.

Currently, fresh produce marketing systems are the biggest users of "public" marketing infrastructure and have been most affected by the widespread under-investment in these systems. As formal public market places have been overwhelmed by rising volumes of commodities and numbers of traders, the informal marketing sector has exploded, raising major concerns about congestion and hygiene among city planners. The chaotic state of

[7] Zambia has on paper a lot of land but most of it is either game parks, game management areas, water bodies and what is available for cultivation largely has no infrastructure such as roads to support its productive potential

[8] Jayne, T. and FSRP-Zambia, 2007. Under-appreciated smallholder agriculture: possible implications for information design system. Presentation to WorldAgroInfo Project Design Team. Agricultural Consultative Forum, Lusaka, Zambia. August 13, 2007

many of these markets also means that few if any comprehensive programs have been put in place to actively link farmers to them.

Since about 2000, much attention has been paid to the "supermarket revolution" in developing countries[9]. The term may be appropriate to describe what has happened in some countries of Latin America and East Asia, as income growth and openness to foreign direct investment drove widespread growth in supermarkets, with important implications for farmers, traditional traders, consumers, and even municipal finances. Among many funding agencies, the phenomenon was viewed with concern for its potential to exclude small farmers, but also as a way to deal with the distressingly complex challenge of how to modernize the chaotic and increasingly inadequate supply chains serving urban areas.

After the initial burst of enthusiasm, there is now a broad consensus that this phenomenon is likely to proceed much more slowly than once thought in SSA (Tschirley et al., 2009; Humphrey 2006; Traill 2006; Minten 2009). This is due in large measure to much lower incomes: per capita purchasing power parity income across all of Africa (including South Africa and North Africa) compared to Latin America was only 40% that of the 15 *poorest* Latin American countries in 2006, and one-quarter that of Latin America as a whole (Maddison, 2009). This anticipated slow growth includes fresh produce supply chains, where both the promise and the perils of supermarket expansion have received greatest attention. In nearly the entire continent, the so-called "traditional" marketing sector of open air markets, dispersed informal vendors and traditional shops is expected to play a dominant role in fresh produce marketing for the next two to three decades.

If correct, this emerging consensus has profound policy implications. It suggests that private investment in modern, integrated supply chains cannot be relied upon to solve the multitude of problems of logistical inefficiencies, deteriorating infrastructure, high product wastage, urban congestion, and food safety concerns that increasingly plague traditional production and marketing systems over a time frame acceptable to most policy makers and donors. What is more, Africa's high rate of urban population growth means that a rapidly rising share of the population will be subject to these problems over time. Public engagement will be central to any improvement in these areas.

Public engagement must be based on a solid understanding of these systems and on new approaches to public private sector collaboration to improve them. While there is wide appreciation of the poor performance of many of these systems, little comparative knowledge has been generated to quantify the range of observed performance. The Food Security Research Project (FSRP) in Zambia began filling this gap by examining the marketing structure and price behavior of tomatoes, rape, and onions in Lusaka, Zambia (Tschirley et al., 2009 and Tschirley and Hichaambwa, 2010). These crops are perhaps the three main "staple vegetables" in East and Southern Africa, eaten on a daily basis by most people. In Lusaka, they account for more than half of all vegetable consumption. They also show great

[9] For early expositions of this theme on Latin America, see Reardon and Berdegue (2002) for a summary, and Alvarado and Charmel (2002), Schwentesius and Gomez (2002), Faigeuenbaum et al (2002), Farina (2002), and Ghezán et al (2002) for country studies. See also Reardon et al (2004). For Asia, see Reardon et al (2003a), Reardon et al (2003b), Hu et al (2004), and Coe and Hess (2005). For Africa, see Weatherspoon and Reardon (2003), Neven and Reardon (2004), and Neven et al (2005).

variability in production and perishability characteristics and so are likely to illustrate a substantial portion of the range of marketing structures and price behaviors seen in these traditional systems.

The Government of Zambia with support from cooperating partners has implemented some projects aimed at improving the physical infrastructure of markets in selected parts of the country, but has largely concentrated on retail rather than wholesale markets. Recently, a modern structure at Soweto Market, which is the largest wholesaling market in Lusaka and indeed the whole country, was developed under the European Commission (EC) funded Urban Markets Development Programme (UMDP), but still no provisions[10] for the unique requirements of fresh produce wholesaling were made. Yet wholesale markets are an essential integral part of marketing systems especially in poor countries where vertically integrated food supply systems are either nascent or inexistent.

Wholesale markets are an essential component of any agricultural marketing system especially for horticultural crops. In most countries, wholesale markets remain an essential link between production and consumption, facilitating both producers and consumers access to markets and thus increasing producer incomes as well as providing good quality produce at competitive prices for consumers. Maintaining effective and efficient wholesaling linkages in fresh produce production and consumption is a serious challenge in urban areas of most developing countries. This is because the rapid and concentrated population growth has been creating a growing demand for food, and food supply systems become increasingly complex as the demand and area required to supply this demand expands.

1.2 Objectives

This study examines the organizational and physical structure and procedures (price setting, respective fees) of the Lusaka fresh produce market with special emphasis on Soweto Market, the main wholesaling market, with a view to develop recommendations on win-win arrangements for all stakeholders and service providers involved, in particular small-scale producers. Most importantly, the study examines the actual levels of commission charged by brokers and these are compared with what is considered reasonable (about 10% under the rules of agency the world over) as long as the seller receives some value in the form of a higher price or shorter waiting time at the market. This study also aims to bring out a better understanding of both the potential value of working through a broker and a more accurate estimate of the true cost – including any hidden commissions. The smallholders need to be confident they are getting the true value of their produce, and that this value is attractive. That way they will increase productivity by investing in technology such as treadle or motor pumps.

The study also seeks to know the perceptions of farmers and traders to the physical infrastructure improvements as well as the role of middlemen or brokers at the markets, and qualitatively assess the cleanliness, logistical efficiency, and level of value added in the traditional wholesale and retail markets.

[10] Large open space with concrete flooring, roofing, designated traffic entry and exit points, loading and offloading bays, storage.

1.3 Data and methods

Primary data for this study comes from four sources. Michigan State University's FSRP has collaborated with the Zambia National Farmers' Union (ZNFU) since January 2007 to collect detailed information on prices and quantities of tomatoes, rape, and onions in Lusaka's dominant wholesale market (Soweto). During Monday, Wednesday, and Friday of each week, market reporters randomly collect three prices paid by buyers (primarily small-scale retailers) for each product during each hour from 6 am to 12 am. Market reporters also collect basic information on all trucks entering the market with the three products, including time of arrival, quantity, geographical origin of the product, and whether the seller will be working through a broker or selling directly. These data allow computation of total volumes and values flowing through Soweto and detailed assessment of seasonality, intra- and inter-day price variability, and marketing margins[11]. Building on their market knowledge and rapport with traders, market reporters interviewed traders on the destination of products flowing out of Soweto.

Wide variation in quality and a lack of formal grades and standards pose difficulties for price analysis of fresh produce markets in most developing countries. Zambia is no different in this regard. Yet analysis in this study is facilitated by the fact that FSRP/ZNFU have worked with traders to develop a (still informal) set of standards for low, medium, and high "standard" quality for all three crops being monitored. All price collection focuses on "medium standard" quality, which should reduce artificial price variation in our data. Within the medium standard prices have been recorded at three standard levels, namely:- medium low, medium average and medium high. The level of transactions in the markets has also been recorded at low, medium and high levels. At the time of collecting transacted prices, the market reporters also collected the price the first-seller (farmer or trader) received and what commission he/she paid the broker.

With support from IWMI, collection of three random observations per day of the price paid by retailers, the first-sellers' price and the official commission (the commission reported by the first-seller to be paid to the broker) which were not done by FSRP started in December 2009 to February 2010[12] for impwa (traditional eggplant), sweet potato leaves, pumpkin leaves, okra, and Chinese cabbage to expand the range of vegetables for which to assess the extent of official as well as unofficial (the difference between the price paid by the retailers and that received by the first-sellers) broker commissions. One on one interviews during the December 2009 to February 2010 period were also conducted with 40 first-sellers (5 of whom were traders) to learn more about their relationships with brokers and how they value their services including ways to improve the situation. Among the 35 farmer first-sellers interviewed, 14 were female.

Additional primary data comes from the FSRP Urban Consumption Survey (UCS). This survey comprises 1,800 interviews with householders in four urban centers of Zambia, including over 600 in Lusaka in two rounds in August 2007 and February 2008. Detailed data on

[11] Detailed analysis of this can be found in Tschirley and Hichaambwa (2010), Tschirley et al (2009) and Hichaambwa et al (2009).

[12] This collection has continued under FSRP to date to capture the seasonal nature of the broker commissions in the long run.

household food consumption and place of purchase allow us to estimate the total size of the Lusaka market for these three products and the market share of various types of retail outlets (open air markets, street vendors, supermarkets, and others).

2. Urban Consumption and Market Channels

2.1 Urban consumption

Fresh produce is an important component of the urban households' daily diet in Zambia. Analysis of the UCS data shows that vegetables rank third in the share of the urban households' monthly food budget in all the sampled cities of Lusaka, Kitwe, Mansa and Kasama among 11 categories: cereals and staples, meat and eggs, vegetables, fish, sugar and oils, fruits, legumes, dairy items, other foods, tobacco and alcohol and food purchased and consumed away from home (see Table 1 below). The budget share of fruits is relatively smaller but is comparable to that of legumes or pulses (beans, groundnuts, Bambara nuts, cowpeas, etc.). When fruits and vegetables are combined, their share is second to cereals and staples (maize, wheat, rice, sorghum, millet, cassava, sweet potatoes), the most consumed food category.

Table 1. Household per adult equivalent shares of broad food categories by urban area

Food Item	Lusaka	Kitwe	Mansa	Kasama
	Percent of total monthly food expenditures			
Cereals & staples	24.1	27.4	28.0	27.2
Meat & eggs	16.8	15.6	12.7	14.5
Vegetables	13.7	15.0	11.4	14.2
Fish	7.6	8.4	12.4	12.5
Sugar & oils	7.9	8.9	8.5	8.7
Fruits	3.6	4.0	3.7	4.0
Legumes	3.7	3.4	3.7	3.7
Dairy items	5.2	3.6	1.7	2.0
Other foods	4.7	4.8	4.7	6.0
Tobacco & alcohol	5.3	4.6	6.3	4.0
Food away from home	7.3	4.3	6.9	3.2
Total %	100	100	100	100

Source: CSO/MACO/FSRP Urban Consumption Survey, 2007-2008

The UCS used total household expenditure per adult equivalent as a proxy for income and ranked the households based on this into low, medium and high expenditure/income terciles. This allowed assessment of fresh produce consumption by household expenditure/income levels. Findings show that the share of the food budget of vegetables is higher among the low expenditure/income households than among the high expenditure/income households. However, the amount of money spent in absolute terms is larger among the high expenditure/income group. The consumption of fruits is higher

among the high expenditure/income group in terms of both the budget share and the absolute amounts of money spent by the households (see Table 2). This is in line with the global trend that the consumption of fresh produce increases with increasing income levels.

Table 2. Relative consumption of fresh produce among Lusaka urban households by income group

Food type	Low expenditure/income group		Medium expenditure/ income group		High expenditure/income group	
	% share of total monthly budget	Mean adult equivalent amount (ZMK/month)	% share of total monthly budget	Mean adult equivalent amount (ZMK/month)	% share of total monthly budget	Mean adult equivalent amount (ZMK/month)
Vegetables	18	29,380	13	46,077	10	104,126
Fruits	3	4,897	4	14,177	4	41,650
Total	21	34,277	17	60,254	14	145,776

Source: CSO/MACO/FSRP Urban Consumption Survey, 2007-2008

The main vegetables consumed in these urban areas are rape, tomatoes, local leaves (such as cassava leaves, pumpkin leaves, sweet potato leaves) and onions in this order, except that the budget share of onions is higher than that of local leaves for high expenditure/income households. The main fruits consumed are bananas, oranges and apples in this order, regardless of household expenditure/income levels. However, the budget shares for the high expenditure/income households are much higher than their lower expenditure/income counterparts (three times as much for bananas, two and half times for oranges and almost six times for apples).

2.2 Share of retail market channels

Urban households in all the sampled cities in the UCS largely procure their fresh produce from the traditional market system (market stands, informal traders using rudiment structures near the markets and in neighbourhoods and street and mobile vendors). Unlike the supermarket revolution that has in the past three or so decades swept developing countries in South America and parts of Asia, the market share of supermarkets in SSA countries including Zambia is still small. The UCS data shows that the market share of the traditional system ranges from 95-97%, leaving the modern or formal system (grocers, mini-marts, supermarkets) with a paltry 3 to 5%. As expected, the market share of the modern market system is highest among the high income households, but still the share is much less compared to that of the traditional market system (90-94% compared to 6 -10%) within this income group (see

Table 3).

Table 3. Share (%) of modern market system by household expenditure/income level

Urban area	Percent share by expenditure/income level		
	Low	Medium	High
Lusaka	0.4	1.2	9.5
Kitwe	0.9	1.2	7.5
Mansa	0.2	2.8	9.8
Kasama	0.3	1.4	6.2

Source: CSO/MACO/FSRP Urban Consumption Survey, 2007-2008

The market share of the modern/formal system of fresh produce differs according to the item involved. The item for which the modern market system has the biggest share is apples, which are all imported from South Africa at 25% (see Table 4). The only other items for which the modern system has a market of share of at least 10% are lemons, watermelons, bananas, avocado pears and green beans (the only vegetable in this group).

Table 4. Share of the modern market system by fresh fruit and vegetable[13]

Fruit/vegetable	% share of private household	% share of modern/formal market system
Apples	0.3	25.1
Lemons	1.7	15.3
Watermelons	1.2	14.4
Bananas	1.4	13.6
Avocado pears	3.1	12.4
Green beans	1.0	10.7
Eggplants	0.6	9.6
Oranges/tangerines	0.6	7.1
Pumpkin leaves	1.2	4.1
Cassava leaves	2.1	3.0
Cabbage	1.8	2.7
Sweet potato leaves	2.2	2.6
Onions	2.6	2.4
Tomatoes	3.5	2.0
Okra (lady's finger)	1.0	1.5
Mangoes	1.6	1.4
Amaranthus (Bondwe)	2.7	0.8
Impwa	1.1	0.7
Rape	3.8	0.7
Guavas	8.3	0.6
Bean leaves	1.6	0.1

Source: CSO/MACO/FSRP Urban Consumption Survey, 2007-2008

[13] The balance between the shares of these two market channels is attributed to the traditional system

The rest of the vegetables, mangoes and guavas record a modern market system share of less than 3%. The share for rape, which is the most consumed vegetable, is less than 1% while tomatoes is at 2% and onions at slightly above 2%. The modern market system for the traditional pumpkin leaves and cassava leaves is relatively higher at 4% and 3% respectively.

Urban consumers also purchase fresh produce from neighbours or other private households. These households mostly sell guavas (8% market share), rape (about 4% share), tomatoes (about 4% share) and avocados (3%). It is quite common to see guava and avocado trees in urban homestead, while urban households are more likely to grow and sell rape and tomatoes.

3. Organizational Arrangements

3.1 Background

Markets in Zambia provide opportunities for income generation to the ever-growing informal sector, which was initially induced by privatization of government-owned and managed companies following the adoption of economic liberalization policies. The informal sector is growing due to limited employment opportunities for the increasing number of young people annually churned out of schools, colleges and universities. As far back as the second republic (before 1991) when there was only one political party, the United Party for National Independence (UNIP), almost all markets were highly politicized with traders at the market expected to be card-carrying members of the ruling party. With the re-introduction of multiparty democracy in 1991, an attempt was made to reduce the level of influence exerted by the ruling party in market places, although parties still maintain offices in markets.

Originally, all markets in Zambia were owned by the local authorities like the Lusaka City Council, which fall under the Ministry of Local Government and Housing (MLGH). Within the markets were market committees or associations of one form or another including those with political inclinations. One of the national umbrellas of such associations is the Zambia National Association of Marketers (ZANAMA).

Due to the sprawling informal sector and demand pressure for more trading places, markets with rudimentary structures without title to land have sprung up through traders coming together. Some of these traders continue trading informally while others get registered as market cooperatives under the Ministry of Agriculture and Cooperatives (MACO). The market cooperatives in Lusaka also formed an umbrella body, the Lusaka Union of Market Cooperatives (LUMC).

The Lusaka City Council collected levies in these markets although there were few services provided and this presented a major source of conflict between the council authorities and traders (members of market associations such as ZANAMA in city council owned markets and market cooperatives in markets developed by marketers themselves) who do not see any justification in paying council levies (Kanchela and LaFleur, 2001). The traders' organizations and market committees also levied traders, although there have been complaints regarding transparency of the use of the income. In spite of its importance to all traders and residents of Lusaka, Soweto Market, especially the area for fresh produce

wholesaling, is an unpleasant environment. It is muddy and sometimes flooded in the rainy season and dusty in the dry season.

3.2 Evolution of the Markets Master Plan

Considering the importance of markets in the income generation activities of people in the informal sector and their deteriorated physical infrastructure as well as disorganized and politicized management, the Movement for Multiparty Democracy government following extensive consultation with various stakeholders developed the "*Master Plan for the Rehabilitation and Rationalization of the Urban Markets of Lusaka, Kitwe and Ndola*" in early 2000 (GRZ, 2002). This included a complete revision of the management system of these markets, with the final aim of providing the three cities of Lusaka, Kitwe and Ndola with an organized commercial network, with wholesale markets and district (township) markets. The general objective of the Master Plan was strengthening of significant urban and suburban centers understood as places of social congregation through:

- Rationalization of the overall trading system;
- Empowerment strong collective actors (unions, traders' associations, organizations of sellers and consumers, etc.), representing the actors involved in the market system so that apart from being beneficiaries of the initiative, they may also be promoters and counterparts of the public administration;
- Spreading among consumers and sellers a culture of selling and buying in designated public areas which makes this type of sale different from supermarkets and shops from the standpoint of the quality of the goods, of prices and of customer/seller relations;
- The definition of criteria for the location or relocation of new markets and the identification of technical regulations for the construction of new markets and the upgrading of existing markets; and
- Upgrading the system of refuse collection and of cleaning.

The activities foreseen as necessary to achieve the above objectives were:

- Review of legislation, local regulations and control and incentive policies;
- Reorganization of the methodologies of management of the trading system as a whole and also of the individual markets;
- Support for the creation of new managerial capacities, for maintaining the structures and for the creation of highly labour-intensive activities;
- Structural measures for the upgrading and creation of new markets; and
- Launch of an awareness campaign regarding selling and buying in public areas.

It was on this basis that the EC funded UMDP was developed and implemented. A number of selected markets, mostly retail in nature, in these three cities have been upgraded with Soweto Market being the recently completed one. The project concentrated on developing hard market infrastructure while soft infrastructure, including building management capacity, has to date not been done. Soweto is the only wholesale market that has been improved although no provisions were put in place for wholesaling of fresh produce. Only a

few wholesalers of onions have to a large extent been accommodated in the new market with the rest remaining in the old area where they were settled to give room for the new market. The new market never provided for a large open space with concrete flooring, roofing, designated traffic entry and exit points, loading and off-loading bays, or storage for fresh produce wholesaling. Its design was largely the same as that of improved retail markets in neighbourhoods on a larger scale.

3.3 Bus Stations and Markets Act

The markets Master Plan recommended a new market management model and this required amending a number of pieces of legislation such as the Markets Act, the Trades Licensing Act, the Food and Drug Act, the Public Health Act, the Environmental Protection and Pollution Control Act, and a new Act, the Bus Stations and Market Act, under which markets are managed and which was enacted in 2007. The new market management model under this Act requires that markets be run by a market board drawing representatives from all stakeholders. Implementation of this arrangement has been slow as it has met resistance from a number of stakeholders with vested interests such as ZANAMA (see Appendix 1) as it meant they would lose control of the markets as well as the levies they charged.

As of 2008, government was still negotiating and sensitizing marketers on the intentions of the new Act which was to bring organization to the markets as once in place the market boards would remove all politics and bring in accountability of levies. Currently, it is the group (political party or trader association) best able to 'bully the rest that runs the show and violent conflicts between opposing groups are not unheard of.

3.4 Current organizational and institutional arrangements

The new organizational and management structures based on the provisions of the Bus Stations and Market Act are being implemented by way of electing market boards. It is not clear how implementation has gone beyond election of the market boards. Under the Act, market boards are supposed to manage the markets based on a viable business plan. The proceeds of levies and charges would be used to maintain the markets and provide services as well as pay rentals to local authorities. The city market (modern and situated next to Soweto) has formed a board comprising three marketers, one official from MLGH, one from the city council, one from the bus station and one ordinary member residing within the ward and a regular customer. However, the board is not yet functioning and the market is being run by officials from MLGH. The situation at the new Soweto Market is similar. The board comprising four marketers, two officials from MLGH, two from the city council and two from the Ministry of Commerce Trade and Industry (MCTI) is yet to start functioning. This is the market that did not provide for fresh produce wholesaling at inception and it is surprising that farmers are not being represented on the board when they are a major stakeholder, especially at markets where wholesaling of fresh produce takes place.

Fresh produce wholesaling has remained in the area where traders were temporarily re-allocated to give room for the construction of this new market. Interviews with trader informants revealed that this piece of land belonged to a private company owning an adjoining property and was forcibly grabbed by traders/party cadres with *"blessings"* from authorities. As of now, this trading area has no title deeds and it is not known how far the case concerning ownership of this piece of land has gone. There used to be a 'tomato

committee' that was 'sort of running' the market, charging levies of ZMK 5,000 per day for farmers and ZMK 1,000 per day for traders when there was a need to raise money to pay for cleaning services. At present, there is no active association and there are no plans to institute a market board. Additional information from city council sources at the market indicated that the fresh produce wholesaling market was actually illegally squatting in that area and is earmarked for demolition. Some small space on the pavement of the new market has been allocated to first-sellers of okra and impwa. The women who normally bring this type of produce from rural areas bring small quantities. There are plans to move the rest of the fresh produce wholesalers/first-sellers to a place yet to be identified. What is not clear at this point in time is whether requirements for fresh produce wholesaling will be addressed when developing the market. This is an opportunity for stakeholders to move ahead and develop a purpose-built fresh produce wholesale market on the outskirts of the city.

The institutional set up and collaboration is also contributing to the confusion. Agricultural marketing, including that of fresh produce wholesaling, is a responsibility of MACO and even the market cooperatives are registered with this ministry. Yet the ministry is not even remotely involved in market issues. Although markets are primarily a responsibility of MLGH and local authorities with the MCTI having a role to play with regard to trade and commerce issues, MACO also needs to be involved, especially at markets where wholesaling of fresh produce takes. Only then can they better appreciate the needs of this important trade and promote its needs.

Plate 1. Wholesaling rape, the most consumed item among fresh produce in urban areas, at Soweto Market. Should such wholesaling facilities be acceptable?

There is normally little value added in the market, except for repackaging in smaller quantities and to a lesser extent plucking leaves from stems of sweet potatoes, pumpkins and cassava leaves. Some repackaged green beans or okra may be mixed with chillies/peppers, impwa, onions or tomatoes as a self contained package ready for the pot. Some enterprising tomato traders would buy a number of crates which they would then sort into grades and sell the high quality ones to high profile customers buying in for their homes or restaurants or even supermarkets for which they get a premium price.

4. Market Structure

4.1 Geographical distribution of marketed produce

This chapter summarizes results on the geographical distribution of marketed production entering Lusaka, and on the structure of the marketing channels for tomatoes, rape and onions, before turning to an assessment of the role of brokers in Soweto in Chapter 5. The city's marketshed is the geographical extent over which product flows to Lusaka. Figure 1 maps these marketsheds based on the districts that provided 80% of Lusaka's supply of each crop from mid-January 2007 through mid-January 2009[14]. The geographical extent of these marketsheds follows the perishability characteristics of the crops.

The city draws nearly 60% of its onions from imports, with half of this coming from Johannesburg, about 1,200 km away; on five nearby districts for 87% of its tomato supply; while it needs only the two closest districts to assemble 83% of its rape supply. Rough estimates of the mean distance to market are 44 km for rape, 69 km for tomatoes, and 539 km for onions.[15] Little of the supply reaching Soweto comes from peri-urban areas. Even for rape, the most perishable of the three, production areas in the two main supply districts, although close to Lusaka are rural in nature and not peri-urban.

Within each district, smaller production areas were identified based on definitions used by farmers and traders selling in Soweto. Typically these areas follow existing local boundaries which could include one or several villages. This reinforces the finding that production of rape is substantially more concentrated than that of tomatoes: 53% of total rape supply to Lusaka comes from the top three areas, while only 28% of tomatoes come from the top three (

[14] We limited the period to 24 full months to control for seasonality in supply, necessary in this case to calculate accurate mean yearly figures. All other analysis is based on data from mid-January 2007 through mid-November 2009.

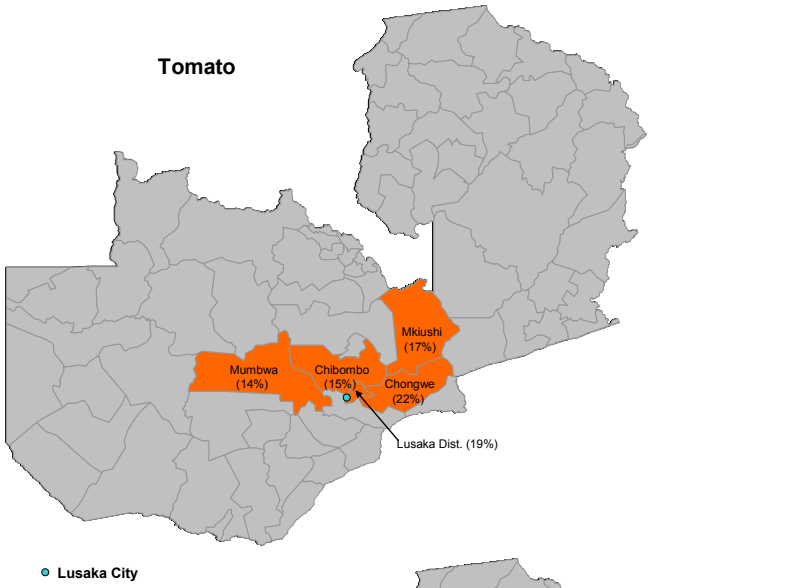
[15] For rape and tomatoes, these figures are based on straight line (air) distances from district capital towns to central Lusaka. For imported onions, we used distance from Johannesburg and mean distance from Blantyre and Lilongwe to Lusaka. Driving distances will be higher.

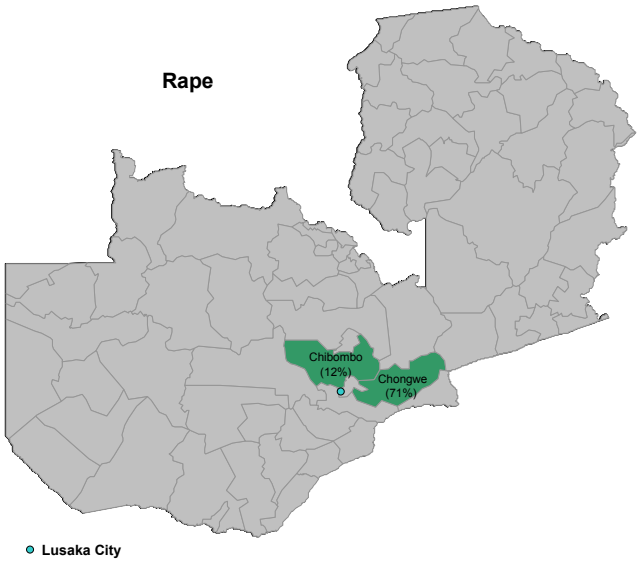
Table 5). Figures for onions are misleading in the sense that Malawi and Johannesburg were each classified as a single “area”, although each undoubtedly draws on many production areas within those countries for the supplies that reach Lusaka.

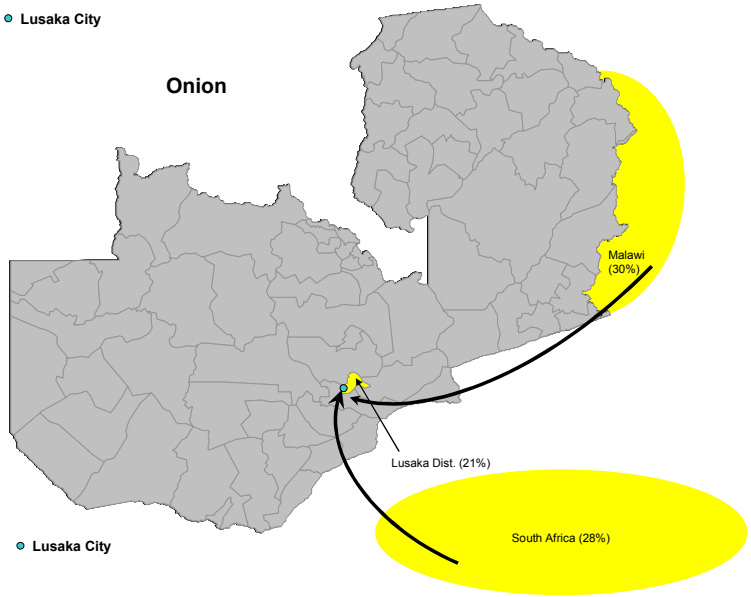
Table 5. Geographical concentration of marketed production flowing through Lusaka

	Tomatoes	Rape	Onions
Total number of identified production areas	115	93	42
Share of total supply from:			
Top 3 areas	0.28	0.53	0.65
Top 5 areas	0.39	0.59	0.75
Top 10 areas	0.61	0.73	0.93

Source: Tschirley et al. (2009)







Weighted average distance to market

Crop	Km
Tomato	69
Rape	44
Onion	539

Straight line (air) distance from district town to central Lusaka
(http://distancecalculator.globefeed.com/country_distance_calculator.asp)

Figure 1. District shares of tomatoes, rape, and onions supplied to Soweto, Lusaka

4.2 Channel maps

Tschirley et al. (2009) and Tschirley and Hichaambwa (2010) used data from the price and quantity collection system in Soweto, along with urban consumption survey results and interviews with sellers in Soweto to construct channel maps for the three crops (Figures 2-4). Key aspects of each map are summarized in

Table 6[16].

Soweto is a sprawling retail market, by far the largest in Lusaka, and is the dominant wholesale market in the city. In 2007 and 2008 it sold over 50,000 metric tonnes per year just of tomatoes, rape and onions, valued at over USD 13 million. Yet nearly all wholesaling takes place in an uncovered dirt field at one end of the market complex with no dedicated entry and exit points, limited storage capacity and no cold storage. The UMDP funded by the EC has made substantial investments in several retail markets of the city, including Soweto, but has now ended without making any improvements in this wholesaling area. This a major cause of concern and, coupled with problems with the legal ownership of this piece of land and its limited size, makes a strong case for stakeholders interested in improving fresh produce marketing especially at the wholesale level to push for the development of a purpose-built fresh produce wholesaling market elsewhere.

Retail channels for fresh produce include open air markets, the "ka sector" (small vendors outside of organized market places who sell from busy pedestrian walkways and in residential neighbourhoods[17]), modern supermarkets, and private household producing in or near the city and selling to other households. The main supermarket chain is Shoprite Checkers, which invested in 17 stores across Zambia (five in Lusaka) in 1997; over the past 3-4 years, Spar (a Dutch owned firm) has opened three outlets, while the local chain Melissa now has three outlets. Shoprite Checkers procures fresh produce locally through FreshMark, its wholesaling partner.

Several patterns emerge. First, marketing channels are short. Rape is the extreme case, with nearly two-thirds being sold directly to retailers by farmers. Tomatoes shows much less direct farmer-retailer marketing (7%) but nearly half of all its value is taken directly to wholesale markets by farmers. Onions, due to the large market shed, show the most intermediation, with 72% of all product brought to Lusaka by traders, not farmers (58% imported plus 14% among that originating within Zambia). A second pattern is that Soweto serves as a major redistribution market for onions and tomatoes. Over 30% of tomatoes reaching Soweto are exported out of Lusaka to Livingstone in the south, the Copperbelt and Democratic Republic of Congo to the north. Third, the role of the "modern" marketing sector is small. Of the total value of fresh produce purchased by consumers in Lusaka, 92% of tomatoes and onions and 96% of rape is purchased in open air retail markets or the "ka sector".

These exceptionally high shares held by the traditional marketing system prevail more than a decade after Shoprite first invested in Lusaka with 17 stores nationwide, and after three

[16] ZK in the figure stands for Zambian Kwacha

[17] "ka" is the diminutive in Bantu; thus kashop is a small, rudimentary shop, katable is a small table on which a vendor sells her wares, kantemba is a small "ntemba" or kiosk.

Spar outlets opened in the city. FreshMark, Shoprite's wholesaling division, holds less than a 1% market share in all three products, while processors are important only in tomatoes, with about an 8% market share; this share is held primarily by Freshpikt, which produces canned tomatoes primarily for the export market.

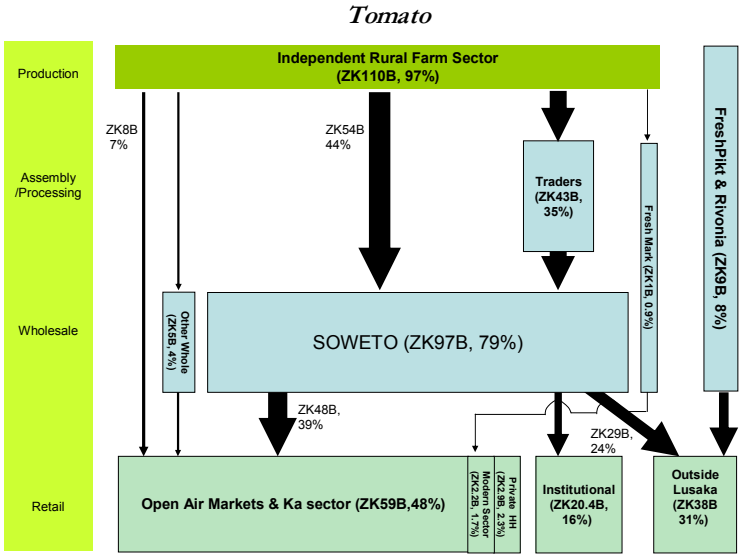


Figure 2. Simplified channel map for tomatoes in Lusaka

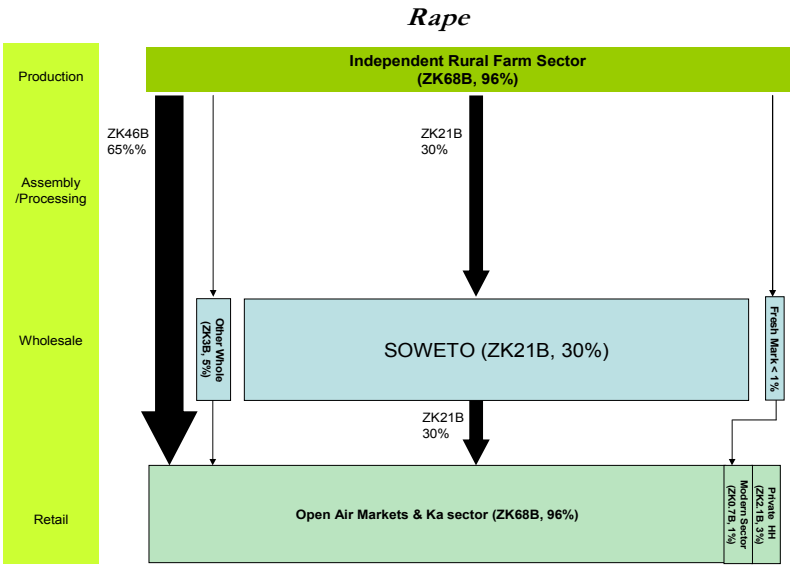


Figure 3. `Simplified channel map for rape in Lusaka

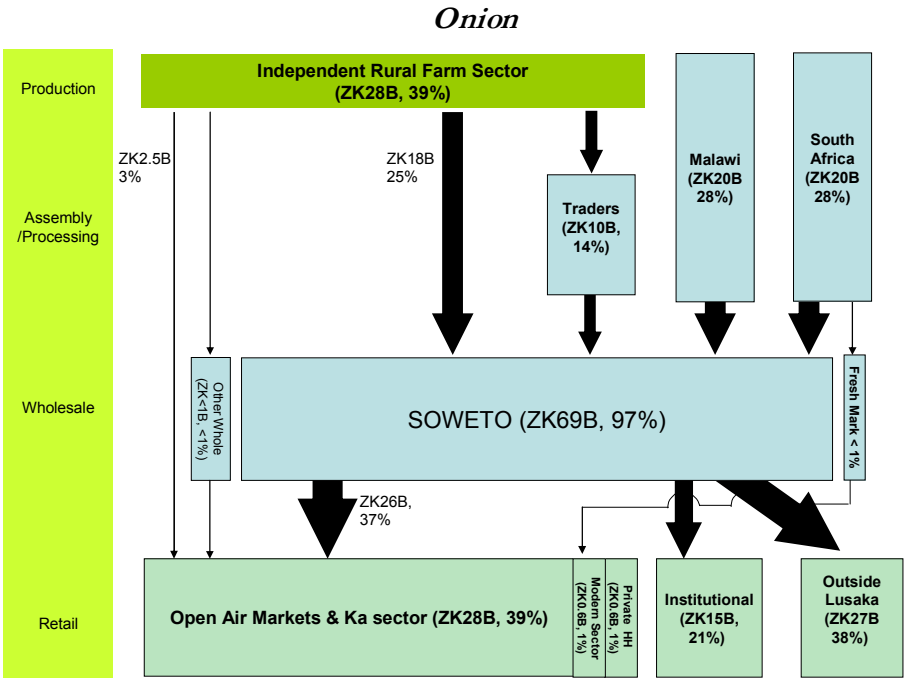


Figure 4. Simplified channel map for onions in Lusaka

Fourth, regional trade dominates the onion system and is also important in tomatoes. Over half the onions reaching Lusaka are imported, and an important share of the 38% that is shipped from Soweto outside of Lusaka likely goes to the DRC. Zambia is likely a net importer of onions, although data for other areas of the country to confirm this could not be found. We find no evidence of imports of tomatoes, but clear indications from brokers and wholesalers in Soweto that significant volumes, probably more than half of the 31% that is shipped out of Lusaka, are exported to DRC. Zambia is thus likely a net tomato exporter. Only in rape does regional trade play no role.

Finally, evidence on the role of urban horticultural production is mixed. The UCS shows that only 2% of tomatoes and 3% of rape and onions are purchased from other urban households. Independently, the data on volumes entering Soweto show all important supply areas for all three crops to be at least several kilometers outside residential areas of the city. Yet 65% of all rape reaching retail markets comes directly from farms (**Error! Reference source not found.**), with small-scale retailers typically going to those farms and buying entire plots of rape. These farms are likely close to the city and some may reasonably be considered urban. More information is needed on this aspect of the trade to establish the importance of urban production of green leafy vegetables. For tomatoes and onions, however, urban agriculture clearly plays a small role.

Table 6. Key structural characteristics of marketing channels in Lusaka by crop

Share[1]	Crop		
	Tomatoes	Rape	Onions
Marketed directly by farmers to retailers	0.07	0.65	0.03
Flowing first through wholesale markets	0.83	0.35	0.40
Of which …			
… sold directly by farmers in wholesale markets	0.48	0.35	0.26
… sold first to rural traders	0.35	0.00	0.14
Sold by farmers to "modern wholesalers" and processors	0.09	0.00	<0.01
Imported	0.00	0.00	0.58
Purchased by consumers …			
… in traditional markets and ka sector	0.48	0.96	0.39
… in supermarket chains	0.02	0.01	<0.01
… from urban producers	0.02	0.03	0.03
Sold to institutional buyers within Lusaka	0.16	0.00	0.21
Shipped outside of Lusaka	0.31	0.00	0.38

[1] Denominator is total value at weighted average retail prices of volumes flowing through Lusaka (wholesale and retail markets, modern wholesalers, and processors).

5. The Role of Brokers

5.1 Levels of brokering in fresh produce wholesaling in Soweto Market

Brokers are agents who arrange sales without taking ownership of the commodity, earning their money on a commission. They are a common and frequently controversial presence in wholesale markets of east and southern Africa.[18] The FSRP database shows that there are on average of 39, 27 and 2 tomato, rape and onion farmer first-sellers accounting for 82.0%, 99.8% and 7.8% of first-sellers for each crop per day in Soweto Market. Their backgrounds vary but they generally have basic to high school levels of education with those coming from further away areas being less educated.

In general, farmers in Zambia have mixed opinions of brokers. During a rapid appraisal of Zambia's domestic horticultural chain in 2006 (Hichaambwa and Tschirley, 2006), some farmers said they are forced to sell through brokers via threats of stealing product if they try to sell on their own. Yet a group of fresh vegetables farmers who regularly supply Soweto (and to a lesser extent other wholesale markets), believed that these brokers provide some level of service. although brokers charged about 10% commission on sales, farmers developed relationships with them over time that provided greater security and sales opportunities for their product. Yet even this group lodged a common complaint -- that brokers sometimes add price markups they keep for themselves without the farmers'

[18] See Tschirley and Ayieko (2006) for a discussion of the issue in Kenya. Gabre-Madhin (2001) analyzes brokers' contributions to grain market efficiency in Ethiopia.

knowledge, in addition to the commission. Farmers who do not know these agents may be at higher risk for these problems.

Brokering services can improve market efficiency by economizing on search effort (Gabre-Madhin 2001). Because brokers do not have to put time and effort into managing the substantial price risk present in fresh produce markets, they can develop expertise in gathering information on buyers and sellers and bring them together to effect transactions. In this way, an efficient and competitive set of brokers can match supply with demand at lower cost than if all sellers and buyers engaged in "bilateral search" – each conducting their own search. Largely for this reason, all produce moving through South Africa's of modern wholesale system must legally be sold through brokers. Actual performance of a brokering system can be reduced if brokers do not behave competitively or if they are able to influence information by strategically withholding it from sellers and buyers on supply and demand conditions or on the commissions they are charging. Performance can also be reduced if bilateral search costs are low but buyers and sellers are prevented, either by law or by collusive behavior among brokers, from conducting their own search and negotiating their own transactions.

Formally testing for the efficiency of a brokering system requires transaction level data on the search costs of buyers and sellers and on the commissions they paid, and estimates of the opportunity cost of their time. Higher search costs and opportunity costs of time should increase the use of brokers, and commissions should be in line with the sum of these costs. In the absence of such data, Tschirley et al. (2009) and Tschirley and Hichaambwa (2010) nevertheless developed testable hypotheses and were able to draw insights regarding the efficiency of this process in Soweto.

First, in the absence of legal mechanisms either requiring or precluding brokering, and under the assumption that search costs and opportunity costs of time differ across buyers and sellers, a mix of brokered sales and direct sales is expected to be found. Second, due to the absence of a cold chain, it is expected that the more perishable items will more likely be sold through brokers, since failing to find a buyer early in the day can result in major financial losses for the seller. This suggests that rape should have the highest rate of brokerage and onions the lowest. Third, assembly traders selling in the market should be less likely than farmers to use brokers, since traders have more frequent exposure to the market, more opportunity to develop relationships with retail buyers, and so should have lower search costs.

Their fourth and final hypothesis was that, if brokerage services are offered competitively, sellers with large quantities will more likely do so through a broker. This hypothesis was based on several factors. First, large sellers face a higher risk of not selling all their produce and may also have higher opportunity costs of time, both of which favour brokering. Second, it is suspected that such sellers are generally better connected and more knowledgeable of the market and its participants. If so, such sellers will have lower search costs (thus reducing the likelihood of brokering) and will less likely be manoeuvred into a brokered transaction against their will by non-competitive brokers. A finding that large sellers are more likely to sell through brokers may thus be evidence that brokers are offering a valued service to sellers. At the same time, such a result could suggest that smaller sellers

who may benefit most from access to efficient brokering services (due to high search costs) are not able to gain that access, because brokers focus on larger sellers.

Other factors may also affect the likelihood of a transaction being brokered, though clear hypotheses regarding the direction of the affect cannot be formed.

Nearly all brokers in Soweto are men. Might they be more able to foreclose direct sales opportunities among women sellers, increasing the likelihood of brokered sales? On the other hand, women may value their time differently from men, resulting in differing decisions even in the absence of manipulative behavior by brokers. More conceptual and empirical work is needed to form clear expectations in this regard. Here we can only test for the presence and direction of an affect.

Total volumes arriving on the market will also have an ambiguous affect on brokering. Low volumes will be associated with fewer sellers, suggesting lower search costs and reduced demand for brokering services. Yet because fluctuations in daily volumes arriving on the market are unpredictable, the total number of brokers operating in the market on a given day may show little flexibility, or at least little correlation with total volumes. This means that the supply of brokering services *per unit volume arriving on the market* may rise substantially when volumes unexpectedly fall.

Tabular analysis confirms the first three expectations (Table 7). With the exception of rape, in which essentially all sales are through brokers, there is a mix of brokered and unbrokered transactions. Onions, as expected, show the lowest rate of brokered transactions and for both tomatoes and onions, farmers are more likely than traders to sell through brokers. Differences between farmers and traders selling tomatoes, however, are not large; 99% of tomato farmers sell through brokers while 89% of tomato traders do so. This suggests that perishability is more important than search costs in driving a seller's decision.

Table 7. Role of brokers in Lusaka by crop

	Crop		
	Tomatoes	Rape	Onions
	Share of transactions using brokers		
Total	0.886	1.00	0.116
By farmer first-sellers	0.985	1.00	0.861
By trader first-sellers	0.851	1.00	0.027

To test the fourth hypothesis, and also to explore the relationship between brokering and a) the gender of the seller and b) the total quantity of product on the market, Tschirley et a. (2009) and Tschirley and Hichaambwa (2010) conducted a probit analysis using data collected from 29 October 2007 to 16 November 2009[19]. Data is at the level of individual sales lot, allowing exploration of all the hypotheses and relationships discussed above. Rape was excluded from the analysis because essentially all transactions are conducted through brokers. By including mean daily quantities transacted in the market over the past month in

[19] Data on whether a seller was selling through a broker only began to be collected at end of October 2007.

addition to monthly dummy variables, two aspects of potential seasonality were controlled: total volumes transacted through the lagged quantity variable and weather effects (heat and precipitation and their effect on product quality) through the monthly dummies. Because seasonal patterns are different for onions and tomatoes, separate regressions for each were run, in addition to one pooled regression.[20]

Marginal effects are shown in

[20] The regression assumes that values of the dependent variable are serially uncorrelated. This may not be the case if some sellers have binding contracts with brokers over given periods of time. While more research is needed, we believe that this problem is small in this particular case because a) any contracts that do exist are informal, suggesting a more fluid relationship (and less serial correlation) than might exist in the presence of formal written agreements; b) few sellers will have such contracts, and c) a large number of sellers come to the market so that the share of transactions showing this lack of independence will be small.

Table 8. Consistent with the bivariate results, farmers in all three regressions are much more likely than rural assembly traders to sell through brokers, and the small numbers of wholesalers are less likely than rural assembly traders to use brokers. Women in all three regressions are more likely than male sellers to use brokers.

Table 8. Marginal effects from probit analysis of determinants of selling through a broker

	Tomatoes & Onions	Tomatoes	Onions
Number of observations	21,592	13,642	7,211
Prob>chi2	0.000	0.000	0.000
Pseudo R2	0.797	0.660	0.615
Log likelihood	-2,952	-1,643	-1,058
Variable	Dy/dx	Dy/dx	Dy/dx
Continuous variables			
Log quantity being sold (seller's lot size)	0.082***	0.011***	0.021***
Log total quantity sold in market that day	-0.060***	0.008	-0.024***
Log mean daily quantity sold in market over past month	-0.042***	0.003	-0.023***
Trend (week)	-0.000	0.000	-0.000
0/1 variables			
Seller is a farmer (trader excluded)	0.661***	0.236***	0.756***
Sellers is a wholesaler (trader excluded)	-0.568***	-0.563***	-0.020*
Seller is female (male excluded)	0.171***	0.030***	0.108***
Product being sold is onions (tomatoes excluded)	-0.715***	-----	-----
January (relative to June)	-0.002	-0.033**	0.036*
February (relative to June)	0.068***	0.006	0.032
March (relative to June)	0.090***	-0.004	0.111***
April (relative to June)	0.027	0.015**	-0.038***
May (relative to June)	-0.025	.019***	-----
July (relative to June)	-0.011	-0.018	0.022
August (relative to June)	0.016	-0.023*	0.046*
September (relative to June)	0.029	-0.015	0.033
October (relative to June)	0.143***	0.002	0.141***
November (relative to June)	0.170***	0.010	0.168***
December (relative to June)	0.102***	0.011	0.108***

Dependent variable is 1=sale made through broker, 0=sale made directly to retailer
*** significant at 1% level **5% *10%

Seasonal patterns (monthly dummies) are not easily interpretable. Use of brokers for selling onions appears to be higher during the hot and wet months of October through March, but this pattern does not hold for tomatoes. These differential results may relate to the fact that tomato volumes in Soweto have shown a much less stable seasonal pattern since 2007 than have onions.

Our most important result is that the seller's lot size in all three regressions is positively and significantly associated with the probability of selling through a broker. To probe the

robustness of this result, we ran two other regressions, one limited to farmers and another limited to traders. In each case, seller's lot size remained positive and significant. As argued above, this result may suggest that, at least for these larger sellers, brokering services are adding value and involve a free choice by the sellers. The results are also consistent with brokers being more interested in working with larger sellers and perhaps not making these services available to the smaller sellers who may be most in need of them; yet these are problems that small players face in many markets. On balance, the results, though suggestive rather than definitive, paint a less negative picture than is typically held of brokering activities. Key concerns do remain regarding the lack of transparency in commissions, and more understanding is needed regarding the details of the brokering relationships and the level of free choice by sellers who end up transacting through brokers.

5.2 Actual levels of broker commissions obtained

The FSRP market reporters have, since the beginning of 2010, been obtaining the price the first-seller (trader or farmer) gets and the commission they reported to be paid to the broker in their trade volume and price collection work. This made it possible to estimate the levels of official broker commission (that reported by the sellers) and unofficial broker commission (the difference in the price paid by the retailers and that received by the sellers) in addition to tracking the factors affecting the level of broker commission. Extra data was also collected from five more crops: impwa, sweet potato leaves, pumpkin leaves, okra and Chinese cabbage in order to increase the number of crops over which to assess the true value of commissions made by the brokers.

Before examining the actual commission that brokers get, it is important to look at the process of price setting. Normally, trading would not start until 6 am for rape and after 7 am for tomatoes. Before this, retail traders who are the buyers will wait around the lots they are interested in buying as is shown in the picture in Plate 1. The brokers with high quality produce will set the price based on the previous day's supply and demand and what has been supplied on that particular day. Having decided on a price, these brokers will then discuss the price with the farmers and reach an agreement. After that the price of other qualities of that produce item will be decided on a relative basis to that of the high quality ones. These prices are also agreed upon by the concerned broker and farmer. After this, the farmers are normally encouraged to move into makeshift restaurants to have their meals sometimes paid for by the brokers. The farmers, even if they are not physically near their produce being sold, need to stay within the vicinity to be readily available to discuss downward adjustment of prices when needed. Most farmers complain about the lack of transparency in the pricing system, and establishing the true commissions earned by brokers was one of the critical objectives of this study.

To establish the true commission, we determined the price paid by retailers (transacted price) for randomly selected market lots and the price received and reported by the first-seller including the commission the first-seller paid the broker. The official broker commission was taken as that reported by the first-seller while the unofficial commission was the difference between the price paid by retailers and the price reported by the first-seller. The total broker commission is the sum of the official and unofficial commission also reflected as a percentage of the price paid by retailers. Table 9 shows the relative levels of commission that the brokers obtained per crop over the period January to March 2010.

Future analysis of the broker commission will include seasonality effects as more data is collected over at least a complete year. The table vindicates the first-sellers perceptions: that the commission the brokers actually get is much more than they show. The level of the total commission is higher than the normally charged 10% for agency transactions.

Table 9. Relative real broker commission for selected vegetable sales in Soweto Market, Lusaka (January to March 2010)

Commodity	No. of observations	1/Price paid by retailers	2/Official price received and reported by first-seller	3/Official commission as paid by first-seller	4/Unofficial commission (1- 2)	Total commission (3 + 4)	Total broker commission as % of price paid by retailers	Official commission as % of price paid by retailers
Tomatoes	325	43,618	40,748	4,075	2,871	6,946	15	9
Rape	234	35,325	32,423	3,242	2,902	6,144	18	9
Impwa	57	39,737	32,018	263	7,719	7,982	20	1
Sweet potato leaves	57	25,982	24,018	2,258	1,965	4,223	17	9
Pumpkin leaves	52	21,365	18,615	1,852	2,750	4,602	22	9
Okra	54	30,667	25,778	389	4,889	5,278	20	1
Chinese cabbage	48	25,667	24,125	2,381	1,542	3,923	16	9

the crops being highest among the leaves and impwa and lowest with tomatoes. The level of the official commission at 9% (for all crops except impwa and okra) is reasonable. In fact, the brokers and the first-sellers normally agree that they will charge 10% of the first-seller's price, which is normally less than the price paid by retailers. When the prices drop, brokers will normally charge a figure that is less than 10% of the first-seller price.

The situation is different with regard to impwa and okra. In this case, the brokers would tell the farmers at what price they were going to pay them for the produce after selling and after which no other commission (except in a very few case), is charged. The brokers will then keep the difference between this and the price paid by retailers. This results in a poor relationship between the price paid by retailers and the total broker commission based on the coefficients of determination[21] derived by simple regression of the price paid by retailers on the total commission obtained by traders, done separately for each crop as is shown in Table 10. The amount of official commission is highly related to the rice paid by retailers on all the crops except these two. The unofficial commission is highly correlated to the price paid by retailers for rape and to a lesser extent impwa and tomatoes.

Table 10. Relationship between the price paid by retailers and broker commission per crop

	Coefficient of determination (R^2) of price paid by retailers done separately for each crop and type of broker commission			Total commission as % price paid by retailers
Crop	Total commission	Official commission	Unofficial commission	
All crops	0.568***	0.821***	0.205***	17
Rape	0.914***	0.996***	0.619***	18
Tomatoes	0.509***	0.996***	0.206***	15
Chinese cabbage	0.551***	0.961***	0.022	16
Pumpkin leaves	0.425***	0.953***	0.063**	22
Sweet potato leaves	0.498***	0.789***	0.019	17
Okra	0.118***	0.226***	0.000	20
Impwa (traditional eggplant)	0.267***	-0.003	0.324***	20

We now examine the broker commission behavior further by assessing what factors affect the level of the commission. The FSRP database contains for each price observation, information on the time of collection (hourly from 6 am to noon), the level of transactions and produce quality standards. It would be expected that the broker commission will be higher early in the morning when most trade is taking place and when the produce quality is high and would normally attract a premium on the price. The amount of broker commission is also expected to vary seasonally due to the seasonal nature of production and marketing of fresh produce, but we do not have sufficient monthly data to take this into account. To explore the determinants of broker commissions, these commissions were regressed against

[21] The closer the coefficient is to 1, the stronger the relationship between the variables.

time of day of transaction, produce quality, and the level of transactions in the market. The model took the form:

$$\log P_{tql} = \alpha + \beta_{1i} T_i + \beta_{2i} Q_i + \beta_{3i} L_i + e_i$$

where,

P = the total broker commission at this time period, produce quality and level of transaction,

T_i = 5 hourly data collection time dummy variables,

Q_i = 2 produce quality dummy variables,

T_i = 2 level of transactions dummy variables,

e_i = a normally distributed error term, and

Estimation is in Stata with Prais-Winsten correction for first order serial correlation and robust standard errors. The regression is only done for tomatoes and rape together and then separately for each crop to ascertain differences as the level of brokerage with the two crops is different. Onions are excluded from the regression because the level of brokerage is very low, while the other crops are not included because data on these variables was not collected for these crops. Analysis included testing for seasonality effects through monthly dummy variables in future when data spanning at least a year is collected. The results of the regressions are shown in

Table 11.

Table 11. Regression model for factors affecting broker commission

Regression parameter	Tomatoes and Rape	Tomatoes	Rape
No. of observations	107	95	81
F	F(9,97)=44.35	F(8, 86)=12.55	F(8,72)=20.08
Prob>F	0.000	0.000	0.000
R squared	0.805	0.539	0.691
Adjusted R squared	0.786	0.496	0.656
Root MSE	0.182	0.163	0.140
	coefficients		
Time series trend	0.139**	0.229***	0.116**
Time of collecting price			
06-07 hours	0.134	-	0.155**
07-08 hours	0.260**	0.170**	0.136***
08-09 hours	0.217***	0.134	0.111***
09-10 hours	0.217***	0.113	0.097**
10-11 hours	0.075	0.058	-
11-12 hours	-	-	-
Low level of transaction *(compared to medium)*	0.055	0.096	-0.450***
High level of transaction *(compared to medium)*	0.103	0.019	0.010
Medium quality (compared to low/high quality[22])	0.187**	-0.043	0.120**
Constant	2.924***	2.933***	3.176***
Rho	0.734	0.481	0.697
Transformed DW	2.020	2.239	1.598

Dependent variable is log (percent commission)
*** Significant at 1% level **5% *10%
- variable excluded from regression

The regression of both crops shows that the total broker commission is significantly higher between 8 and 10 am than between 6 to 7 s, and after 10 am. That of rape alone shows significantly higher broker commission from 6 to 10 am while that of tomatoes alone shows significantly higher broker commission from 7 to 8 am. This is the time when sales are at the highest level. Low levels of transaction, when supply is considerably higher than demand, significantly reduces the brokers' commissions for rape.

5.3. Farmer perceptions of brokers' roles

Thirty-five farmer first-sellers were interviewed to learn their experiences with regard to their relationships with brokers. The issues explored were: reasons for selling through a broker, advantages and disadvantages experienced by selling through a broker, benefits from selling through a broker, and how relationships with brokers can be improved. Respondents were allowed to give as many responses as they wished, and the relative frequency of each response among all the responses per question was used to gauge or rate

[22] Both low and high standard quality were excluded from the regression due to collinearity.

its importance or significance. The results of these interviews are shown in Tables 12 to 16. The women farmer first-sellers were less articulate and largely indicated that they were selling at the mercy of the brokers for which they literally had no choice and failure to negotiate meant they risked losing their merchandise. The men were more articulate.

Table 12 shows the frequency of reasons farmers gave for selling through brokers. The majority of farmers sell through brokers largely because they found the system in place and brokers would normally block them from selling on their own (45%). On a more positive note was that produce handled through brokers was less likely to be stolen (35%).

Table 12. Reasons for selling through a broker

Reason	Frequency	Percent
System found in place, brokers say its 'their' premises	22	44.9
Produce handled by brokers is more secure from theft	17	34.7
They know the customers and are more knowledgeable in selling	6	12.2
They provide the crates used for packing tomatoes	2	4.1
Allows us time to do other things	1	2.0
They provide farmers with inputs	1	2.0
Total	49	100.0

That brokers provided security to the produce they handled was the most important advantage (Table 13) farmers found (56%); and that brokers found customers was far less important (16%). Even less important was that brokers sometimes provide inputs and selling through brokers gives farmers time to other things (9% each). That farmers have more time to attend to other things while their produce is being sold by brokers is one of most important benefits of selling through brokers the world over. It is unfortunate that farmers in Soweto cannot benefit from this. Interviews with some of these farmers as well as experience from the FSRP market reporters revealed that farmers have to actually stay within the market so that they can try to monitor the sales as they quite often do not trust the brokers. Situations where a broker simply takes off with sales proceeds have been heard of from first-sellers.

The main disadvantage, as Table 14 shows, was the lack of transparency in pricing, whereby brokers get a hidden commission without the knowledge and consent of the farmer (67%). In fact, farmers contend that the price markups brokers add end up slowing the sales (17%) after which the brokers go back to the farmer to ask for a reduction in the price on top of which they will still put a markup for themselves (11%).

The above notwithstanding, 28% of the interviewed farmers reported having stable relationships with brokers for an average period of six years. However, 19% of these reported having terminated their past relationships with brokers due to dishonesty or misappropriating sales proceeds. The main benefits from these relationships (Table 15) were provision of market information in terms of supply and demand and prices (61%) and inputs (26%). However, 17% of the farmers who reported receiving market information from the brokers contended that the information is quite often not reliable as some brokers will

simply entice the farmer to supply so he can raise more income through the commission he will charge. The brokers know that once farmers have brought their produce to the market they will take whatever they find. About 26% of the farmers reported having input credit from brokers.

Table 13. Advantages of selling through a broker

Advantage	Frequency	Percent
Brokers provide security	24	55.8
Brokers more easily find customers	7	16.3
Brokers sometimes provide some inputs	4	9.3
Selling through brokers allows farmers time to do other things	4	9.3
None	2	4.7
Provide market information	1	2.3
Brokers sometimes assist to pay transport costs	1	2.3
Total	43	100.0

Table 14. Disadvantages of selling through a broker

Disadvantage	Frequency	Percent
Lack of pricing transparency (hidden commission)	31	67.4
Make sales slow due to markup they add	8	17.4
Entice farmers to reduce prices on false account of slow sales	5	10.9
Make farmers make losses	1	2.2
Farmers have no say on pricing	1	2.2
Total	46	100.0

Table 15. Benefits from the broker relationship

Benefit	Frequency	Percent
Provision of market information	23	60.5
Provision of inputs	10	26.3
None, just selling on behalf of farmers	5	13.2
Total	38	100.0

On how relationships with brokers can be improved (

Table 16), most farmers felt that the brokers should be more honest (25%), while others preferred that the government remove them from the markets and provide security for them to sell on their own (19%), and that pricing should be transparent (15%) as is shown in

Table 16. There is also some degree of desperation on the part of the farmers as a significant proportion felt there was nothing that could be done as they had no control over the brokers.

Table 16. How farmer relationships with brokers can be improved

How relationship with brokers can be improved	Frequency	Percent
Brokers should be more honest	13	25.0
Government should remove brokers and let farmers sell on their own	10	19.2
Pricing should be transparent	8	15.4
Nothing, farmers have no control over them	6	11.5
Sensitize brokers on their roles	5	9.6
Brokers should provide security while the farmer sells on his own	4	7.7
Brokers should provide inputs	3	5.8
Brokers should buy the commodities from farmers and then re-sale	2	3.8
Brokers should secure suitable selling spaces on time	1	1.9
Total	52	100.0

6. Key Issues and Investment Priorities

6.1 Key issues

We have seen that fresh fruits and vegetables are important in urban diets and their consumption is expected to increase with increasing urbanization and income. This demand is important to stimulate production from the rural farming sector which would lead to increased income and poverty reduction. However, rural-urban linkages, especially at the level of wholesale markets, need to function effectively. The Structural Adjustment Policies (SAPs) and associated economic liberalization have resulted in reduced numbers of people in regular paid employment and increased numbers of people with irregular employment, entering the agricultural marketing systems including the brokers. These have primarily been seeking a personal livelihood from marketing and have little desire to develop the efficiency of the system itself. This has not helped the functioning of the fresh produce markets.

We have also seen that the market share of fresh fruits and vegetables of the modern market system is very low and it is particularly so for the most consumed vegetables (rape, tomatoes, local leaves and onions). Yet the traditional system, especially at the wholesale level, gets few investment resources for both hard market infrastructure (physical works) and soft infrastructure (e.g. market information, grades and standards, etc.). Thus the following urgently needs to be noted:

- The modern market system is growing. However, the rate of growth is likely to be much slower than once thought and too slow to transform traditional market systems over any acceptable time frame for development planners and other stakeholders.

- The importance of the traditional market system for the foreseeable future cannot be over emphasized. There is a need for improved hardware

infrastructure especially at the wholesale level (e.g. Soweto Market), including:

- A wholesale market for fresh produce needs to be urgently developed as there practically is not any in Lusaka. This need not be an elaborate structure as long as it has good paving with provisions for drainage, refuse disposal, entry and exit points as well as loading and off-loading bays for trucks. Brokers currently tell farmers that the current market is there because they are the ones who established it using underhand methods. Transparency in pricing would greatly improve the efficiency of the markets making both sellers and buyers happier and this can only be achieved with well managed brokering systems.
- To be linked to greater private sector involvement in infrastructure development, ownership and management within the Public Private Partnerships (PPPs) concept for improved coordination and linked to improving the capacity of brokers through training and ensuring that only registered brokers operate, developing and use of grades and standards.
- To be linked to appropriate legislation in place under which the brokerage system can operate in addition to the Markets and Bus Stations Act and the Public Private Partnership Act.
- To learn from success stories in the region such as the organized system in South Africa and the development of markets in collaboration with national farmers' organization in Tanzania.

The mobile phone revolution offers great potential for improved flow of information across the whole supply chain. Market information would help minimize the fresh produce supply gluts causing collapse of prices. When available in different markets, this would also help traders and farmers take advantage of spatial price arbitrage. The ZNFU horticultural market information system developed in conjunction with FSRP is yet to be implemented due to lack of resources, and once in place could help a lot in this regard, especially after it is replicated in other places such as Livingstone or Choma in southern Province and Ndola/Kitwe and Kasumbalesa on the Copperbelt.

6.2 Priority investment options

One of the main reasons the domestic horticultural sector in Zambia is not developing as in other countries in the East and Southern African region is the lack of a national level organization or institutions to spearhead the lobbying of policy makers and other stakeholders to address issues relating to its development. Uganda and Kenya, for example, have a number of such stakeholder organizations and there are even national policies and strategies on horticulture which are non-existent in Zambia. The Zambia Export Growers Association (ZEGA) is a membership organization (50 members) addressing the interest of its members who largely export fresh produce to Europe and has been supported by the EU.

The first step to address the issues affecting the horticultural sector in Zambia in general and that of wholesale markets in particular is the formation of a National Working Group on

Horticulture (NWGH). Stakeholders at a workshop on the "Development of Horticulture Markets in Zambia" organized by the Agriculture Consultative Forum (ACF)/FSRP in early July 2010 agreed to select an interim committee for this group[23]. This committee will spearhead addressing issues affecting the sector on behalf of stakeholders. This avenue is open for more stakeholders (especially those who were not represented at the workshop) to buy in.

The primary issue to be addressed by this group is to sensitize and lobby policy makers on the problems of fresh produce markets especially at the wholesale level. The group will especially address the following as a matter of priority:

Developing a new fresh produce wholesale market on the outskirts of the City of Lusaka based on appropriate cost-effective design and a structure encompassing a concrete slab floor to facilitate drainage and cleaning, designated entry and exit points for vehicular and human traffic, loading and off-loading bays, storage facilities (which may or may not have refrigeration facilities) and roofing among others. This may entail visits to countries such as South Africa and Mozambique to learn from experiences in this field. Such a market is being developed in Uganda as well as Namibia. This investment avenue is necessary because it is inconceivable to develop the fresh produce wholesale section of Soweto Market considering problems with its legal ownership and limited space compounded by traffic congestion in the city.

The NWGH would also work with other stakeholders to attract investment in infrastructure development, ownership and management of the market within the framework of the PPPs concept as enshrined in the Public Private Partnerships Act No. 14 of 2009 of the Laws of Zambia.

Concurrent with the above developments would be the development of a legal and institutional framework under which brokerage activities at the market can be undertaken to achieve a win-win outcome for all stakeholders. An example of a such a situation is at the Johannesburg market where the market charges 5% of all sales while the registered and regulated brokers negotiate a commission of about 7.5%; an arrangement which gives the farmer or trader better service. For example, a farmer would only need to drive in, have his produced weighed, offload where his broker is located and drive out and then his/her sales would later be deposited in his/her account. In Soweto Market, brokers take all the 20% of sales without giving anything to the market to be used for maintenance and service provision purposes while farmers or first-sellers get no service at all. Poor brokerage has significantly contributed to smallholder farmers' disinterest in marketing fresh produce, which is unfortunate considering its potential for rural poverty reduction.

Another urgent issue to address would be the implementation of a horticultural market information system. The system developed by ZNFU/FSRP has not been implemented due to lack of funds. While ZNFU has continued looking for funds to implement the system, other interested parties can buy into this, especially ZNFU which largely depends on donor funds for its operations. The system is designed to capture and disseminate hourly prices and

[23] The proceedings of the workshop are appended as Appendix 2.

quantities available in the market. Opportunities exist to add into the system additional information relevant to the whole fresh produce supply chain.

The market development highlighted above would need to be replicated in at least two other markets (one each on the Copperbelt and Southern Province). These three will act as major links to markets in other parts of the country and indeed to regional markets.

It is expected that improved wholesale markets will stimulate producer participation in the supply chain. However, it is imperative that smallholder participation is enhanced through development of strategically located storage or packing houses for bulk produce before transportation to markets. Investment in these can be facilitated through farmer organizations with appropriate government or donor support or through PPPs. Other supply chain issues would be appropriately addressed through stakeholder articulation spearheaded by the NWGH as need may arise.

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APPENDIX 1. Trader resistance to the new bus stations and markets act

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OPINION

THE call by President Mwanawasa for a meeting with the Zambia National Marketeers Association (ZANAMA) is timely and welcome.

It is timely because it exhibits Government's willingness to dialogue with stakeholders including those at grassroot level rather than always getting views from the elite policy makers.

The issue of the Markets Act and eventual appointments of the boards to run the markets and bus stations seems to have raised a lot of dissatisfaction from some stakeholders, especially the marketeers.

The reasons for introducing market boards have been well articulated. Once in place, the boards were expected to remove politics from the markets and bring sanity in the use of market levies, thus resulting in smooth operations of the markets.

It is also envisaged that services to the consumer will then improve in the markets when it is clear who is running the show, as the boards would also be responsible for ensuring that markets operated in hygienic conditions.

Another important aspect is that there will be accountability in the manner all revenues raised from the markets are utilised. Currently, it is a case of which group is better able to bully all other marketeers.

In the recent past, there have been "wars" in markets based on who should collect levies and the coming of the boards is expected to solve this problem.

The political dimension of the operations of markets has not helped matters. In fact it has provided another potential spark for violent confrontations during election campaigns. City market in Lusaka is an example of this.

Because of the thousands of people who throng the market everyday, the market is seen by various political parties as a particularly strategic place for election campaigns. Each side is therefore keen on controlling the market. Because of this, leadership of the market committee has acquired significance that is beyond simply running the market.

Market boards are expected to help cure this malady in operation of markets, so that they are solely places of trading.

But notwithstanding the good intentions of this law, members of ZANAMA have not welcomed the proposed market boards. That is why the meeting between ZANAMA and Dr Mwanawasa and the government is most welcome as it should iron out any budding problems.

While the minister of Local Government has been reporting to Dr Mwanawasa on progress and implementation of the Act, it is important that the President has called for such a meeting to get the views of the other side.

This is a clear demonstration that Dr Mwanawasa and the Government are committed to listening to all stakeholders on important national issues.

APPENDIX 2: proceedings of the acf/fsrp horticultural markets development workshop

(Held on 2nd July 2010 at the Pamodzi Hotel, Lusaka)

INTRODUCTION

This workshop was organized to initiate sharing of empirical information about fresh produce markets in Zambia among various stakeholders, as a basis upon which decisions and actions to improve or develop the sector can be made. The workshop was opened by the Minister of Local Government and Housing, Honourable Dr. Eustarckio Kazongo, MP, and attended by a cross section of stakeholders[24] including the Mayor of Lusaka and 5-6 city councillors, the Town Clerk of Lusaka and representatives from the Ministry of Agriculture and Cooperatives, Ministry of Local Government and Housing, Lusaka City Council, the University of Zambia, the Japanese International Development Agency, the African Development Bank, the World Bank, the Swedish International Development Agency, the European Union and a farmer and a broker from Soweto Market (the main wholesale market in the city and the country as a whole)..

In his opening remarks, the honourable minister said that government has always regarded horticulture as a priority non-traditional export sector and has put in places policies facilitating its growth. This, however, involved only a few players who belong to the Zambia Export Growers Association. He expressed concern that while a lot was known about the export horticulture sector, little was known about the domestic sector which involved more people and had larger potential for rural income growth. Information about the performance of this sector needed to be generated in order for it to be developed.

He further highlighted to the participants that since fresh produce was largely produced in rural areas and consumed in urban areas there was need for better rural-urban linkages through effective markets. Considering that more than 90% of the fresh produce consumed in urban areas is accessed through the traditional market system, there was a need to improve this system especially at wholesale level. He reiterated government's concern about the deplorable conditions of these markets and challenged his ministry staff as well as those of city council to strive to remedy the situation. He emphasized that his ministry was willing to work with other stakeholders in developing specially designated fresh produce wholesale markets in major cities of the country which could later be linked to regional markets, within the public private partnership (PPP) framework. He expressed gratitude that the policy, legal and institutional frameworks under which such investments can be implemented have already been put in place by government. The honourable minister ended by emphasizing that these developments need to go beyond the traditional infrastructural development to include increased private sector ownership and management of these markets.

Reacting to the honourable minister's remarks, Mr. Chance Kabaghe, Director of FSRP, expressed gratitude at the minister's ability to take time off his busy schedule to open the workshop and promised the minister that stakeholders in the sector will rise to the challenge to develop horticultural markets and indeed the sector as a whole. He further

[24] The full list of participants is attached in the annex.

stated that the anticipated outcome of the workshop was concrete ideas on the way forward with regard to these issues. He promised the honourable minister that stakeholders would not let the government down in this regard as especially the PPP policy and legal framework was in place.

Mr. Kabaghe then invited the honourable minister and workshop participants to watch a short video documentary depicting the status of fresh produce markets in Zambia. The honourable minister, after the video, agreed there was no exaggeration with regard to the physical conditions of the fresh produce wholesale markets depicted in the documentary and again, challenged stakeholders to work with his ministry staff and the city council to address these issues. At this point, the honourable minister left to attend to other pressing issues. The workshop proceeded to have three presentations each of which was followed by a plenary discussion. The workshop ended with a panel discussion on key issues which was also followed by a plenary discussion on resolutions on the way forward.

KEY CHARACTERISTICS AND MAIN CHALLENGES IN ZAMBIA'S FRESH PRODUCE SYSTEM; By Mr. M. Hichaambwa and Dr. D. Tschirley, FSRP

The presentation centered around eight key characteristics and challenges in Zambia's fresh produce system, namely:

fresh produce presents income generating opportunities for land constrained farmers, but these opportunities are largely missed in Zambia;
those farmers that do supply Lusaka with fresh produce have direct access to markets;
yet benefits of direct access are reduced by the way in which brokering operates;
Soweto Market dominates fresh produce marketing in Lusaka and whole country, yet physical conditions are deplorable;
very high price variability, driven by even higher variability in quantities arriving on the market, harms farmers and consumers;
margins from wholesale to retail are high, but retailers are probably not earning a lot due to small-scale of operation and high unit costs;
market share of the modern market system of fresh produce is very low; and
investment in developing the traditional market system must emerge from private-public collaboration.

The participants were earlier informed that FSRP has generated a wealth of data/information which is available for sharing with stakeholders but was only limiting the presentation to these few issues.

Issues arising from the presentation were:
Improved markets raise prices beyond the reach of most customers: Concern was raised on the tendency of prices rising beyond the reach of most of the common people when markets are improved and that customers tend to buy from traders operating from outside rather than inside the improved markets because of higher prices inside. It was clarified that the focus here is the extremely poor physical condition of fresh produce wholesale markets the situation of which needed addressing. Development of appropriate fresh produce

wholesale markets does not imply erection of large and expensive structures but putting up basic infrastructures including a concrete slab to facilitate cleaning and drainage, designated traffic entry and exit points, loading and off-loading bays and storage space among others which need not be costly. The issue of customers preferring to buy from outside the markets on account of lower prices was disputed and it was actually explained that it was the traders who tended to move to where the customers were. In addition, it has not been established, due to lack of data, that there was more trading outside than inside the markets.

High wholesale-retail margins yet low income for traders: Clarification was sought on how traders can have high price margins (26 – 68%) and yet have low earnings. It was clarified that these margins were based on differences in wholesale-retail prices without taking into account other costs. The costs per unit are highly inflated by the small volumes that these traders deal in. For example, experience in the markets has shown that it can take about three days for a trader to sell a crate of tomatoes (27 Kg), and that most of traders by and large live modest lives.

Procedures to enter into the PPPs by the city council: Some participants wanted to know the processes or procedures required by the city council to update the PPPs for markets. The Town Clerk explained that this issue hinged on the value of the area in which to invest, the value of proposed structures and the period in which to recoup the investment. The cardinal point is that the standard/value of the proposed structures (including markets) must match the standards of the area in which they are proposed to be put up. The development can then start as soon as funds are available as long as this has been approved by the city council. He further explained that the city council has been involved in PPPs in markets such as Kamwala and Chachacha which have been successful except that lease periods given to some markets are very long which has raised concern from some sectors of the public. These would be discussed with a view to review them. The revision will be based on lessons from the experience of the University of Zambia which has developed structures within the campus on PPP arrangements. The Town Clerk urged people with money to build markets to approach the city council discuss their proposed investments especially that the regulatory framework is in place. It was noted that the regulated period of leasing markets under PPPs is 14 years, though the council could seek authority from government to enter into lease periods longer than 14 years. The PPP Act does not limit the lease period.

- *Origin of the extremely poor physical conditions of the fresh produce markets and how they compare to other countries such as Kenya:* It was explained that the reasons why markets are in poor condition varies from country to country. However, the main explanation could be low incentives for local authorities to clean and maintain the markets and to manage revenue efficiently and transparently, resulting in degraded physical facilities and lack of needed new investment. At the root of the problem are regulatory structures that severely limit private sector participation. Investment here does not necessary mean heavy investment in super structures but investment that would put up a moderate structure with basic needs of fresh produce wholesaling.

- *Regulatory framework under which brokers operate:* Participants noted the chaotic nature of brokering activities at the Soweto Market and some wondered whether there

was no regulatory framework under which brokers operated. It was confirmed that brokers do not operate under a regulatory framework. All produce in South Africa Johannesburg market has to be sold through a broker and all brokers are registered and have to operate under a regulatory framework in place. The fresh produce markets in Kenya also operate through brokers though Kenya also has no regulatory framework. The regulatory framework needed to properly govern broker behavior is one of the issues that the FSRP can look at.

THE AFRICAN DEVELOPMENT BANK'S INVESTMENT PRIORITIES IN ZAMBIA'S HORTICULTURE SECTOR; By Mr. L. Bangwe and Mr. C. Banda, ADB

This presentation gave a brief overview of the formation of the bank and a genesis of its programmes in Zambia. That the bank's support is globally defined in Medium Term Strategy (MTS) for the period 2008 – 2010 and was adopted in line with JASZ (2006 – 2010). Current loan portfolio and support to agriculture sector including future support through Country Strategy Programme/Sixth National Development Plan/Comprehensive African Agriculture Development Programme framework emphasizing public private sector partnerships in investments were highlighted.

Issues arising from the presentation were:

Ownership and management of the marketing infrastructure for the Ministry of Agriculture and Cooperatives (MACO) which the ADB helped fund in Eastern Province: It was learned that the ADB funded market structures (in five districts) were started under the Agriculture Investment Support Programme in 1996. At the time it was not clear how MACO wanted these structured managed, but it has been realized at the moment that MACO and other stakeholders should work with local authorities on how these should be managed. The ministry is currently looking at PPP and using the council as options for managing these investments. All concerned have learned that the ownership and management of such investments should be clear from the outset.

Option for the ADB to work with local authorities: The workshop learned that the bank is ready to work with all institutions whether they be public or private. However public institutions such as local authorities need to have Government support and guarantees through the Ministry of Finance and National Planning. An example of a project where the bank is working with local public utilities is the Nkana Water Supply and Sanitation Project and Lukanga Water Supply and Sanitation.

- *Period of access to ADB loans and interest rates private sector:* It was learned that the interest rate charged for private sector loans depend on the category in which the investment project fell: the interest rate on LIBOR basis can be in the range of 1.5% to 5%. That of Blue chip can be 1% and Greenfields can range from 3 to 4%. Submission of complete filled up proposal is cardinal for accessing the loan early. Normally the Board of Directors meets every month to review the proposals.

OPTIONS UNDER CONSIDERATIONS FOR IMPROVING FRESH PRODUCE WHOLESALING IN LUSAKA; By Mr. P. Chipasu, Lusaka City Council

The presentation started by outlining the current management arrangements of markets within the framework of the Markets and Bus Stations Act and highlighted the current situation for fresh produce wholesale markets in the city. The presentation later brought out the main challenges facing these markets before pointing out options for improvement which emphasized encompassing of the PPP concept in ownership and management.

Issues arising from the presentation were:

Poor management of the storage facility at the new Soweto Market: The workshop learned that the city council leased the facility to a private trader at ZMK30 million per month through open tender. This trader has not made any innovations to attract customers leading to it being largely underutilized and the city council is planning to repossess it. This is the facility which was meant for fresh produce storage at the design stage of the market. It was agreed requirements for fresh produce wholesaling were not taken into account as this facility was just meant for fresh produce storage. It is currently used to store anything.

Independence from political interference of the city council in managing markets: The local authority runs the markets using the policy guidelines in the Markets and Bus Stations Act and therefore, running of the markets is as transparent as possible. It was however acknowledged that there is a lot of interference from political cadres in the running of council owned markets unlike cooperative markets. There is not much political will to resolve this problem. This and the fact that the problem is less in cooperative markets emphasizes the need for PPP approach in the management of markets.

Safeguards for ensuring transparency when the city council is implementing PPPs: These are to be guided by the policy and legal framework which is now in place. Decisions on such matters are transparent and all have to be passed by full council meetings.

Very high rentals in new Soweto Market: Rentals in the market vary according to the type of shop and normally range from ZMK2,000/day through ZMK100,000 to ZMK300,000 per month with depots going for ZMK850,000 per month.

Proportion of fresh produce wholesalers that can be accommodated in the new Soweto Market: About 25% of wholesalers can be accommodated in that market. However, the offload bays are not developed

PANEL DISCUSSION

The discussion was led by a panel of four from among workshop participants, including a university lecturer in horticulture, a farmer and two officers from the Lusaka City Council (Director, Housing and Social Services and Manager, Markets Unit). The main panel was followed by plenary on two issues:

Issue 1: What are the most pressing challenges facing Zambia's horticulture sector?
Lack of leadership to articulate issues affecting the horticultural sector. The Zambia National Farmers' Union deals with a myriad of commodities and is not doing enough for the domestic horticultural sector.
Lack of quality standards which encourage better management and lead to better returns.
Low volumes of trade which is largely as a result of imperfect markets discouraging production.
Limited access to finance across the whole supply chain.
Lack of training on pertinent issues across the supply chain.
Inadequate consultation on design of market infrastructure (farmers or first-sellers are largely not included in the planning and management of markets).
Lack of city council owned land to develop new markets. Any new markets will need to involve the private sector which owns most of the land in the city.
Poor and uncontrolled brokerage activities which cause resentment among farmers and loss of revenue for the city council to develop, manage, and maintain the markets. Compare this with the Johannesburg market where the market gets 5% and the brokers 7.5% and in Soweto where brokers get all the 20%.
Poor management capacity of market boards.

Issue 2: What are the highest priority actions that government and private sector need to take to address these challenges?
Formation of a task force or association to spearhead the development of the sector.
Development of appropriate fresh produce wholesale markets in major cities
Develop a proper and regulated brokerage system in wholesale markets
Implement the PPP concept at all levels of market development, i.e. infrastructure development, ownership and management.
Funds allocated for the development of irrigation projects need to be applied across the whole supply chain rather than at production alone. These projects are after all bound to fail if markets are not functioning well.

Resolutions on way forward
Based on the above activities and discussions the workshop resolved that the workshop proceedings will be circulated to all participants. FSRP will then call a meeting with the purpose of forming an interim committee of a new Zambian Horticulture Association (or any other name that will be agreed upon). The interim committee would from then on steer activities initially focused on:

Elevate the discussion of these issues at policy level (Permanent Secretaries and Ministers).
Engage cooperating partners and see what support they can provide.
Learning experiences on development of fresh produce wholesale markets from the region.