

POLICY SYNTHESIS

FOOD SECURITY RESEARCH PROJECT - ZAMBIA

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HOW ARE VEGETABLES MARKETED INTO LUSAKA? THE STRUCTURE OF LUSAKA'S FRESH PRODUCE MARKETING SYSTEM AND IMPLICATIONS FOR INVESTMENT PRIORITIES

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Main Points

1. Key findings regarding the structure of trade for tomato, rape, and onion into Lusaka are (a) regional trade is an important part of Zambia's fresh produce system, (b) supply chains for tomato, rape, and onion are short, (c) the role of the modern market system is very small, and (d) the role of urban agriculture in supplying Lusaka markets for these vegetables is also small, though it is meaningful in the case of rape.
2. Main policy implications from this and related work are that (a) investments and policies to promote regional trade are relevant for the horticultural sector, not just food staples, (b) the traditional market system needs improved hard infrastructure linked to more collaborative public/private management models and improved coordination in the supply chains, and (c) more programmatic emphasis should be placed on helping existing traders scale-up and gain better access to information to do their job more effectively.

INTRODUCTION: Rapidly growing urban populations and renewed growth in per capita incomes in Sub-Saharan Africa (SSA) are creating major opportunities for local farmers by driving rapid growth in 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.

Following a burst of enthusiasm through the mid-2000s, there now exists a broad consensus that supermarkets are likely to grow much more slowly than once thought in SSA (Tschirley et al, 2009; Humphrey 2006; Traill 2006; Minten 2009). This emerging consensus suggests that private investment in modern, integrated supply chains cannot be relied upon as the sole solution, over an acceptable time frame, to the multitude of problems that increasingly plague traditional production and marketing systems (logistical inefficiency, deteriorating infrastructure, high product wastage, urban congestion, and food safety concerns). 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 collaboration. Yet,

while there is wide appreciation of the poor performance of many of these systems, little has been done to quantify the range of observed performance. We begin filling this gap by examining the marketing structure of tomato, rape, and onion marketed into Lusaka. 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. This Policy Brief draws from a much larger report that covers this and other topics (FSRP Research Report #46)

DATA: Primary data for this study come from three sources. The Food Security Research Project (ACF/FSRP, carried out in collaboration with the Agricultural Consultative Forum) has collaborated with the Zambia National Farmers' Union (ZNFU) since January 2007 to collect detailed information on prices and quantities of tomato, rape, and onion in Lusaka's dominant wholesale market (Soweto). On Monday, Wednesday, and Friday of each week, market reporters collect information on all trucks entering the market with the three products. These data allow computation of total volumes and values flowing through Soweto. Market

reporters also interview traders on the destination of product leaving Soweto.

Additional primary data comes from the ACF/FSRP Urban Consumption Survey (UCS). This survey interviewed over 1,800 households in four urban centers of Zambia, including over 600 in Lusaka, over two rounds in August 2007 and February 2008. These detailed data 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, others).

LUSAKA’S “MARKET SHEDS”: Lusaka’s “market shed” is the geographical supplying product to the city. Figure 1 maps these market sheds based on the districts that provided 80% of Lusaka’s supply of each crop from mid-January 2007 through mid-January 2009¹. The geographical extent of these market sheds follows the perishability of the crops: 60% of the city’s onion comes from imports, half from Johannesburg, about 1,200 km away; five nearby districts provide 87% of the city’s tomato supply, while only the two closest districts account for 83% of Lusaka’s rape supply. 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 local boundaries and could include one or several villages. This measure reinforces the finding that production of rape is geographically more concentrated than tomato: 53% of total rape supply to Lusaka comes from the top three areas, while only 28% of tomato does so (Table 1). Figures for onion are misleading because Malawi and Johannesburg were each classified as a single “area”, though they draw on many production areas.

CHANNEL MAPS²: We used data from the price and quantity collection system in Soweto,

along with UCS 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 2³.

Table 1. Geographical Concentration of Marketed Production Flowing Through Lusaka

Concentration measure	Crop		
	Tomato	Rape	Onion
No. of 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

Soweto is by far the largest retail or wholesale market in Lusaka. In 2007 and 2008 it transacted over 50,000 mt per year just of tomato, rape and onion, valued at over US\$13m. 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, very limited storage capacity, and no cold storage. The Urban Markets Development Program, funded by the EU, made substantial investments in several retail markets of the city, including Soweto, but has ended without making any improvements in this wholesaling area.

Retail channels for fresh produce include open air markets, the “ka sector” (small vendors that pursue sales by locating along busy pedestrian walkways and in residential neighborhoods⁴), modern supermarkets, and private households 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 two outlets, while the local chain Melissa now has three outlets. Shoprite Checkers procures fresh produce locally through Freshmark, its wholesaling partner.

All percentages in the channel maps are based on our estimate of the total value at retail prices of all product flowing through the city; this is the sum of figures in all boxes located in the Retail section of each map (Figures 2 to 4).

¹ We limited the period to 24 full months to control for seasonality in supply, necessary in this case to calculate accurate mean yearly figures.

² See Tschirley and Hichaambwa (2010) for more detail on how these channel maps were developed.

³ ZK in the figure stands for Zambian Kwacha.

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.

Table 2. Key Structural Characteristics of Marketing Channels in Lusaka, by Crop

Share ¹	Crop		
	Tomato	Rape	Onion
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)

Several patterns emerge. First, marketing channels are short. Rape is the extreme case, with nearly two-thirds sold directly to retailers by farmers. Tomato shows less direct farmer-retailer marketing – 7% -- but nearly half of all its value is taken directly to wholesale markets by farmers. Onion, due to its large market shed, shows the most intermediation, with 72% of all product brought to Lusaka by traders, not farmers (58% imported plus 14% of that originating within Zambia). A second pattern is that Soweto serves as a major redistribution market for onion and tomato. Over 30% of tomato reaching Soweto is exported to Livingstone in the south and the Copperbelt and DRC 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 tomato and onion 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 two Spar outlets have also opened in the city. Processors are important only in tomato, with about an 8% market share, held primarily by Freshpikt, which products canned tomatoes primarily for the export market.

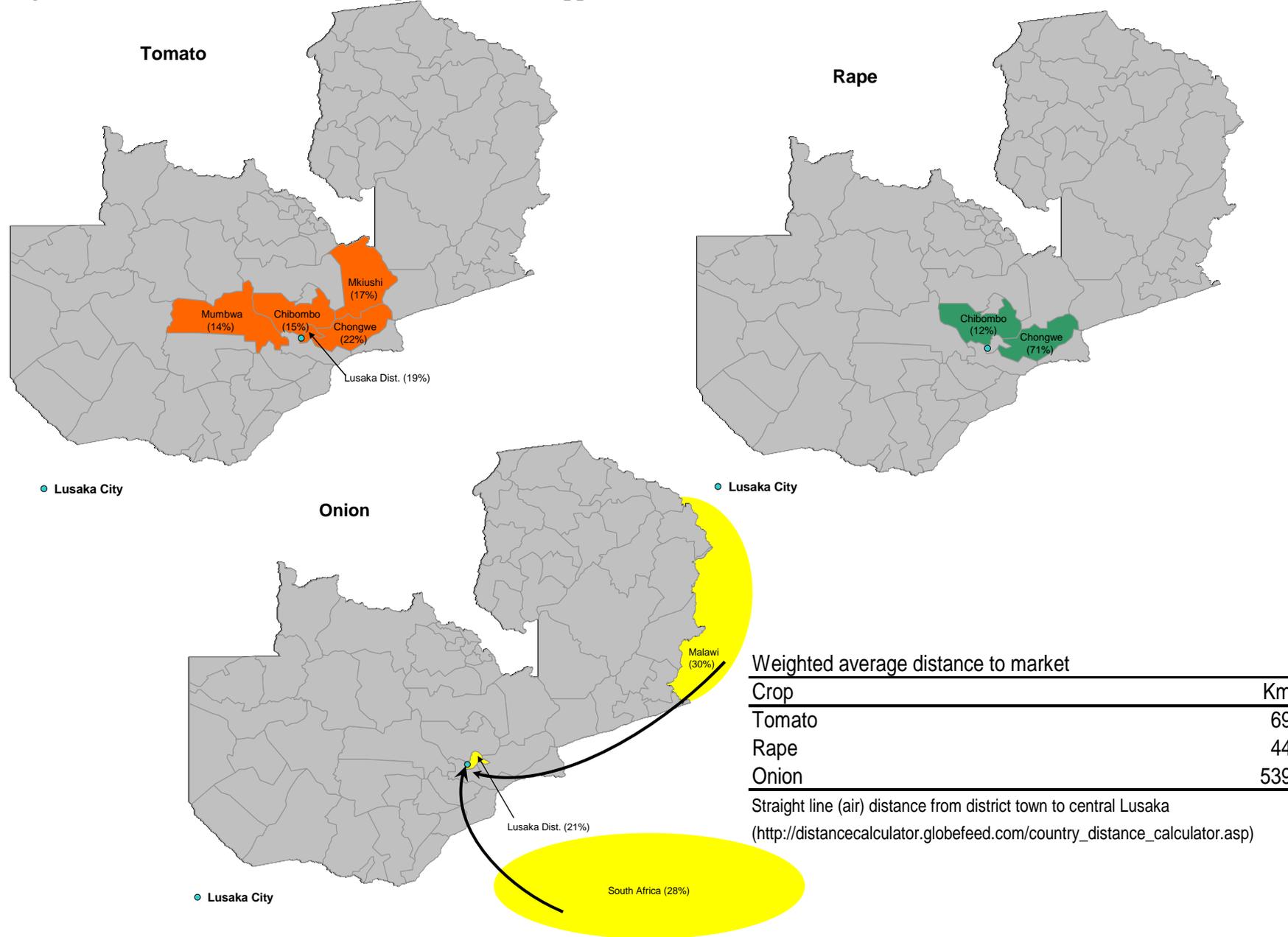
Fourth, regional trade dominates the onion system and is also important in tomatoes. Over half of onion reaching Lusaka is imported, and an important share of the 38% that is shipped from Soweto outside of Lusaka likely goes to the

DRC. Thus, Zambia is likely a net importer of onions, though data for other areas of the country to confirm this could not be found. We find no evidence of imports of tomatoes, but indications from brokers and wholesalers in Soweto that probably more than half of the 31% that is shipped out of Lusaka is 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 tomato 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 reaches retail markets by small scale retailers going to nearby farms and buying entire plots of rape. These farms are likely close to the city and some may 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 onion, however, urban agriculture clearly plays a very small role.

CONCLUSIONS: Four key findings emerge from this research. First, regional trade is an important part of Zambia’s fresh produce system, especially for less perishable onion but also for tomato. Second, supply chains for tomato, rape, and onion are short, meaning that relatively few transactions take place between farmer and consumer. Third, the role of the

Figure 1. District Shares of Tomato, Rape, and Onion Supplied to Soweto, Lusaka



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 2. Simplified Channel Map for Tomato in Lusaka

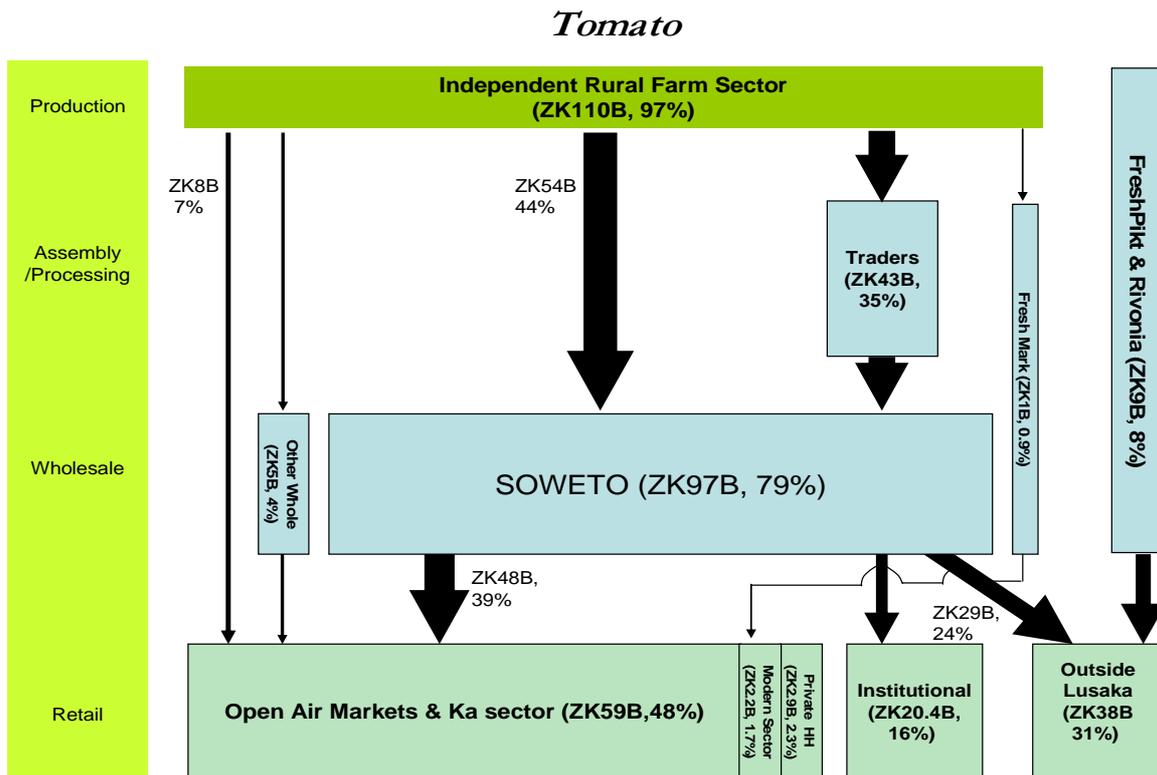


Figure 3. Simplified Channel Map for Rape in Lusaka

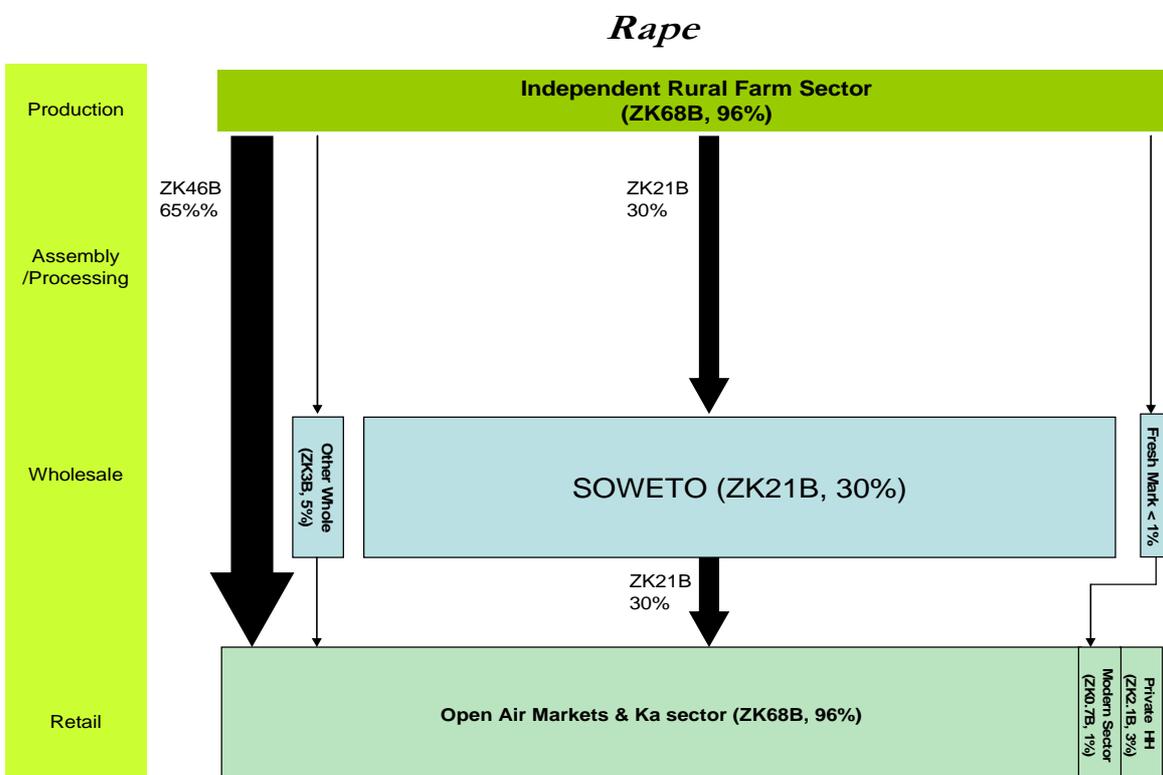
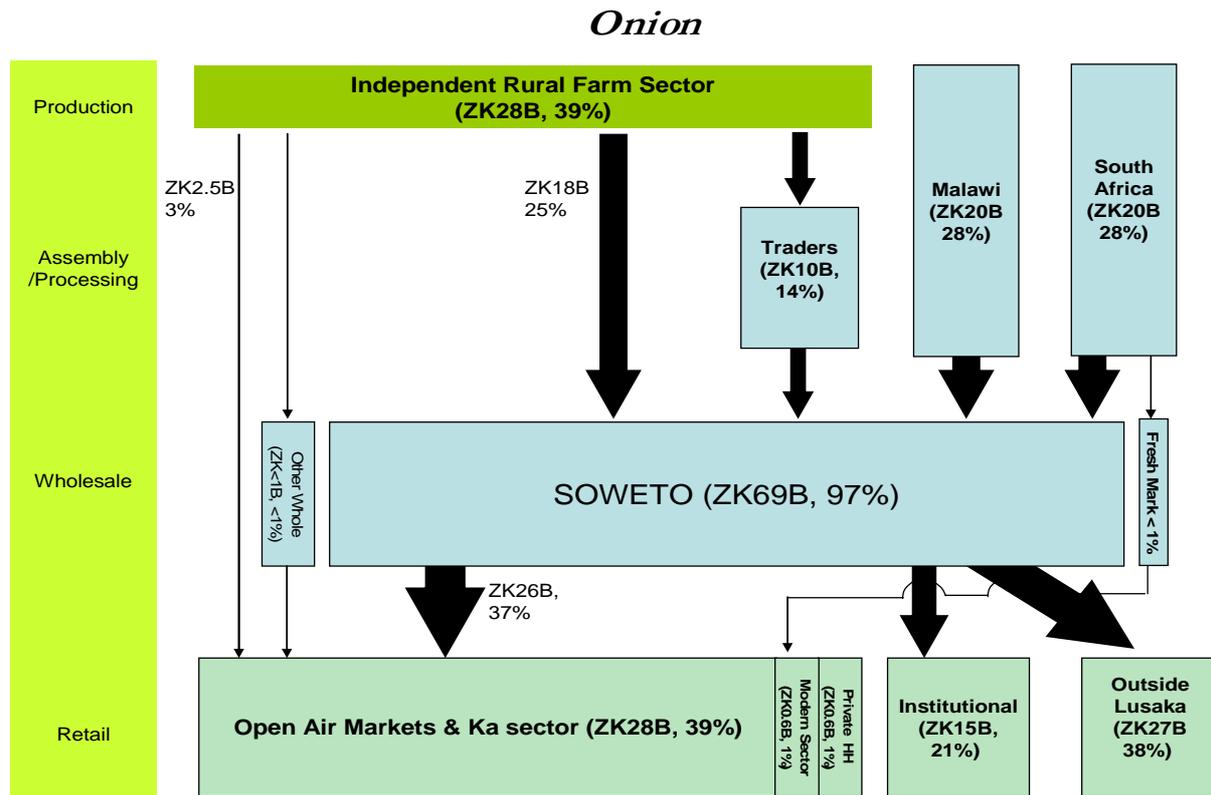


Figure 4. Simplified Channel Map for Onion in Lusaka



modern market system in supplying Lusaka consumers with fresh produce is very small, rising from zero in 1997 to no more than 5% for any of the commodities. Finally, the role of urban agriculture in supplying Lusaka markets for these vegetables is also small, though it is meaningful in the case of rape.

The importance of regional trade in onion and tomato means that regional transport links, harmonization of trade regulations, avoidance of arbitrary border closings, and regional market information sharing – all issues typically addressed with vigor in cereals markets – are also important for improving performance of fresh produce markets.

One implication of short supply chains is that more programmatic emphasis should be placed on helping existing traders scale-up and gain better access to information. Helping farmers to bypass these traders and market their produce directly to supermarkets or processors will be appropriate in some circumstances, but most farmers will continue to rely on the existing fresh market trading system.

The importance of the traditional marketing system, and the fact that it will remain dominant

for many years to come, means that smart investment is urgently needed. These investments must include hard infrastructure – the physical conditions for wholesaling in Soweto are deplorable – but such investments will generate very little benefit if not paired with a dramatically modified approach to management featuring much more active private sector involvement.

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