

Vegetable Market in Arba Minch and Sodo Towns, South Ethiopia

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Abstract – This study was conducted to address the vegetable market in two towns, Arba Minch and Sodo, South Ethiopia. It aimed to show the gap of vegetable demand and supply in the area. Furthermore, the study focus on examining the excellent distribution channel to bring vegetable products from production center to municipal market places. Practically vegetable distribution path used to measure market performance was the existence of producer farmers' association. Thus the producer farmers' association has been collecting vegetable from members and directly distributing it for consumers. This type of distribution model optimize benefit of both producer farmers and consumers. Traders in the municipal market share one complaint about shortage of local supply and consistency. They are unable to get a consistent supply of vegetable and they do not know how to store it in required quality. Therefore, there are two aspects that must work synonymously – increased production coupled with good quality products and provision of market linkage with motivational pricing mechanisms.

Keywords – Consumer, Market, Producer, Vegetable.

I. INTRODUCTION

One of the most critical sections of business plan is market analysis (13,14). Find out just what information we need to know about our potential customers. The market we need to look at is our potential market, not the actual market served, the one that is limited to our existing customers. Our target market is much wider than just the people we already reach. It is the people we might someday reach, or people we could reach, that we need to be concerned about (6-11).

The information sources that will help us what we conduct a market analyses is different for every business plan(3,4). We might also need to find other government statistics, or other commercial statistics, so we may be conducting some internet searches to track down the information. Not all information we need is going to be publicly available, and we may have to settle for educated estimates. Sometimes we will have to extrapolate information from different sources to get the information we are seeking.

Always try to divide our target market into useful slices or segments. Such market segments of vegetable buyer are hotels, restaurants, higher education institutions, wholesaler and distributor businesses, and retailer. Dividing the vegetable market into these segments helps the producers to address the more specific market needs, pricing patterns and decision criteria in each of their different market segments. Knowing our market segments will help to make smart decisions when it comes to

providing the products and services that will supply best for them and for communicating with them(2).

We need to be able to measure and quantify our local vegetable supply potential and market demand for it. When it comes to market growth, we need to think about percentage change as a market forecast. Is the number of homeowners in our target market increasing or decreasing (by how much per year)? How many restaurants demand our products every year, and how is this changing? How many people eat in restaurants in our market area, and how is this behavior changing? Market forecasts start with the total numbers of possible purchasers in each market segment, then project percentage change over the next three to five years.

We need to understand what is going on with our market. What marketing trends and fashions do we see having an influence on our market segments? What is important that as we create our business plan, we become aware of the market trends that affect our specific market? And furthermore, do we recognize the response of seasonality of the products?

Market assessment research can help focus on the competitive strengths and weaknesses of our product or service within our target market, identify opportunities to improve our offering, and help us to ensure marketing strategies are correctly positioned to achieve maximum relevance and impact.

The main objective of this study is to assess local vegetable market demand and potential sources of supply. In line with this the study aimed-1) to identify markets or business organizations with potential vegetable demand, estimate demand levels; 2) to identify past and present areas of vegetable supply, quantify current supply potential from project sites; 3) to determine main kinds of vegetables produced and consumed in and around Arba Minch or Sodo town; and 4) to explore ways how to make market linkage of vegetable products with potential consumers.

II. MATERIAL AND METHOD

To provide a reliable overview of our competitive position, the market assessment research must based on a representative sample of the market that we have defined (12). This means going beyond our own customers and contacts. It could be tempting to use in-house marketing databases for this type of project, but that might provide a skewed result, unless we know for certain that we hold records of all the relevant players(1). We used an independent, comprehensive business list to sample from, and we will obtain a far more reliable picture of where we

have stand. Therefore, the key elements of vegetable market assessment study included:

- Awareness, usage and perception levels of farmers/producers, consumers, business organizations of vegetable production, consumption and use.
- Buyer, seller, and consumer needs and expectations.
- Issues/changes that will affect buyers in the future.
- Market trend and seasonality of the production and consumption of vegetables.

With this information we could plot where we currently stand against the competition and against market expectations. We could also prioritize where action needs to be taken to ensure to meet our market needs as effectively as possible, now and into the future.

Other question areas we could weave around this core might include: how is decision making structures work? how frequent farmers produce vegetables per year? what are push and pull factors influence this? what kind of existing market structure, production structure and distribution structure available? and what has been the most potential impact? As already noted, the research must be representative in order to provide a reliable set of results. This means any method of data collection that would potentially skew the findings should be avoided. Potential customers who did not know much about our product yet are as important here as existing contacts.

Face to face structured interview method for this local vegetable market assessment was employed to gather data regarding past and present sources of supply, presence or absence of market linkage with anybody/ any institution, potential challenges, trends and seasonality of the market. Generally the research was designed to use mixed approach: qualitative and quantitative. Data analysis should also been cascaded along with this line. Data gathering mechanisms involved structured questionnaire, structured face to face interviews with farmers, kebele administrators, business men and key informants. Furthermore it employed focus group discussion, field observation and literature review.

III. RESULT AND DISCUSSION

An assessment has been made of the market structure in Arba Minch and Sodo towns. The main areas of assessment were focus on existing market, production and distribution structures of vegetable product. Also types of participants involved in the market, the methodologies and practical vegetable distribution models used to measure market performance, as well as the likely impacts on the market were addressed. This was (with the overall intention) indicating how effective the current domestic local market data inform the vegetable market situation.

A. Existing Market

An initial scoping to determine the structure of the vegetable market in Arba Minch or Sodo town involved a desktop review of available data. In particular the review focused on data on the existing markets and market distribution points and production centers. Following this, a physical review of the markets and production sites were carried out. These include:

~ Visiting and observing production sites to determine production potential and sighting the input sources.

~ Interviews with participants in the various market channels to determine general behavior or pattern in terms of vegetable volume and kinds traded, frequency of trade and factors influencing pricing.

In order to capture the required data, structured face to face interviews were conducted at all points in the value chain. These include; input suppliers, farmers (both involved and not involved in the project), business organizations (hotels, restaurants, higher education institutions and unions), and wholesalers/retailers.

For each of value chain steps, interviews were conducted to determine;

~ production statistics and production frequency

~ market channel and pricing of vegetables

~ volume of vegetables traded and consumed weekly bases

~ existing supplier centers of vegetables and distribution channels

~ market demand and supply potential

~ current opportunities of smallholder farmers' to produce more and more.

B. Production

On the perspective of *production* the current structure comprises the following types of producers in the study area:

1) Intermittent subsistence with overflow sold on the market-the farmer only participates in the market when an excess of home consumption occurs which is not as a result of a planned production activity. These type of producer typically produce vegetable not more than 50 meter square plot area or not more than 20 to 30 units of headed cabbage or 2 to 4 quintals of potato. The producers use opportunistic sales and may walk to sell it in village market.

2) Small commercial producer where small volume of vegetables are planted (less than 700 meter square plot of land) to cater for both home consumption and commercial sale in planned manner. Sales channel is similar to that mentioned above, but this type of producers have been practiced on sale in municipal markets. The producers have been focused on a few key commercial vegetable varieties (cabbage, spinach, beat root, carrot, potato and pepper) and taking good initiation for future production of more volume and quality.

In generally, farmers who got support from Community Development for Smallholder Farmers' Project in both project sites show up good motivation to develop and extend the volume and variety of their products. Furthermore, they have been establishing cooperative association which is expected to power them bargaining of market challenges.

C. Distribution Structure

The main local market structure of vegetable *distribution* is enlightened farmers direct to consumer, farmer to processor, farmer to retailer (retailer to large retailer), and retailer to consumer.

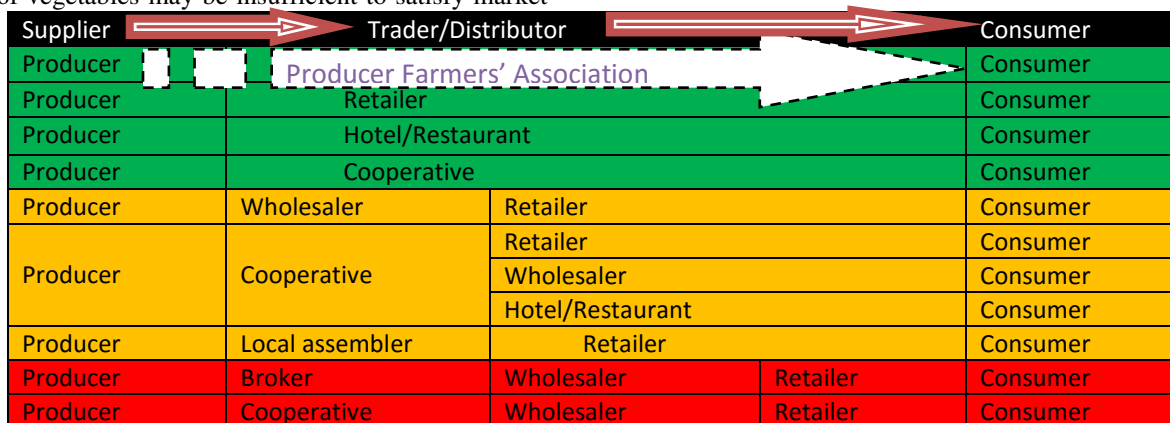
- Farmer direct to consumer – intermittent subsistence farmers selling their products directly to consumers at farm or in village market.
- Farmer to secondary processor – product has been supplied in an informal supply arrangement based on the needs of the processor.
- Farmer to local assemblers (broker) – local assemblers collect vegetable from farm; then bring it to town and sale for retailers or hotels or unions.
- Farmer to retailer – this is an informal arrangement created by commercial efficiency of the farmer. Of the farmers interviewed some have relationship with retail outlets for the supply of vegetables based on demand of retailers. Retailers buy vegetable from farmers directly from farm or village market and bring it to town to sale for consumers.
- Retailer to consumer – at municipal markets retailers’ sale vegetables for different consumers (household, restaurant, and hotel) at high price relative to farmers’ pricing. The municipal market retailers’ get vegetables not only from local farmers but also from wholesalers’ those have brought from Ziway, Shashemene, Meki, and South Sudan.

Based on the initial review of the local vegetable market structure in Arba Minch or Sodo town, it was clear that there is a significant probability that the current local supply of vegetables may be insufficient to satisfy market

demand. There is not enough vegetable product and good market structure/linkage in two neighboring areas. This is the reason why wholesalers have brought vegetables from Oromia region which is 250km far from Arba Minch.

The general working market linkage is the path that interlinks producer, trader and consumer. Producer supply to Trader/Distributor and then Trader distribute to Consumer. The possible market linkage options of vegetable product are given as:

- The direct market linkage option- producer to consumer is excellent path for both producer and consumer. This market linkage may be created through establishing producer farmers’ association and the association directly supply for consumers.
- The market linkage option- producer to retailer/hotel/cooperative and then to consumer is very good path for all actors to maximize their revenue.
- All actors market linkage option- producer to wholesaler/cooperative/local assembler to retailer/wholesale/restaurant and then to consumer is good path for some actors.
- The last market linkage option- producer to broker/cooperative to retailer and then to consumer is not good for both producer and consumer. In this type of market linkage producer sale his/her product in least price but consumer purchases with highest price.



D. Market Capacity to Absorb Increased Production

The gap of local supply and local demand of vegetables in two municipal markets (Arba Minch and Sodo) is high. Tables (Table 1, Table 2, Table 3) show estimated weekly sale of a wholesaler in Sodo municipal market, estimated

weekly sales of a retailer in Arba Minch municipal market, and estimated semi-annual supply of a farmer for both home consumption and commercial purpose respectively.

Table 1. Estimated average weekly sale of a wholesaler in Sodo municipal market

Vegetable	Weekly sale(kg)	Unit price (Birr/kg)	Revenue (Birr)
Irish potato	30000	5	150000
Cabbage	20000	6	120000
Green Pepper	1200	16	19200
Hot pepper	25000	40	1000000
Garlic	1000	55	55000
Onion	30000	13	39000
Tomato	17000	14	238000
Beat root	10000	5	50000
Carrot	5000	6	30000
Total			1,701,200

Table 2. *Estimated average weekly sale of a retailer in Arba Minch municipal market*

Vegetable	Weekly sale(kg)	Unit price (Birr/kg)	Revenue (Birr)
Irish potato	100	5	500
Cabbage	100	6	600
Green Pepper	50	20	1000
Hot pepper	100	45	4500
Garlic	50	55	2750
Onion	100	12	1200
Tomato	50	13	650
Beat root	50	5	250
Carrot	50	8	400
Spinach	60	3	180
Ginger	30	12	360
Lettuce	15	10	150
Posolia	100	20	2000
Total			14,540

Table 3. *Estimated average semi-annual supply (both for home and commercial) of a farmer*

Vegetable	Average farm area (m ²)	Semi-annual average supply(kg)	Unit price (Birr/kg)	Revenue (Birr)
Irish potato	96	400	3	1200
Cabbage	500	1250	7	8750
Green Pepper	700	480	12	5760
Garlic	28	8	50	400
Onion	63	50	10	500
Beat root	55	300	3	900
Carrot	6	300	3	900
Spinach	60	960	2	1920
Total				20,330

Assume that the weekly sale of retailers and semi-annual supply of farmers will be constant through a year as survey result above; now we have on average 30 retailers in municipal market and 300 farmers who supported by community development for smallholder farmers' project in Zigity site. Expected total revenue generated in a year by 30 retailers was estimated 22,682,400 birr. This expense, 22,682,400 birr, is larger than expected revenue generated by 300 farmers in a year, 12,198,000 birr. Estimated total supply revenue of 300

farmers does not exceed 2 months demand of a single wholesaler. This analysis clearly indicates that the local vegetable market gap has filled by external source. Another a good example of market capability to absorb increased vegetable production in Arba Minch area is determined by vegetable demand of Paradise Lodge. Table 4 shows the Lodge expense in October 2014 which is almost closer to estimated semi-annual revenue generated by a farmer who has supported by a project to produce vegetables in Zigity, 20 km far from Arba Minch.

Table 4. *Vegetable expense of Paradise Lodge in October 2014*

Vegetable	Unit	Quantity	Unit Price(Birr/kg)	Expense (Birr)
Adengware	Kg	5	15	75
Cabbage	Kg	70	6	420
Local cabbage	Pc	4	20	80
Carrot	Kg	95	10	950
Garlic	Kg	40	35	1400
Ginger	Kg	13	11	143
Green Pepper	Kg	27	25	675
Onion	Kg	249	15	3735
Potato	Kg	354	7	2478
Sweet Potato	Kg	67	10	670
Tomato	Kg	338	14	4732
Total				15358

The market data also collected from different hotels, restaurants and cafes. The weekly demand and purchasing

price of vegetables are depicted in the Table 5. The spinach and lettuce demand of some hotels were zero. The

reason of this was absence of products of these vegetables in Arba Minch municipal market, no production. Currently farmers at Zigity who supported by the project have been supplying spinach product to the market in 2014. Still

hotels included in survey responded that they have not process and sale spinach products except Hore hotel. The lettuce production has been limited in a few farmers near Arba Minch Airport.

Table 5. Weekly demand and purchasing price of vegetables at different hotels(kg)

Vegetable	Hotel/Cafe								Weekly Total Demand
	Tourist		Hore		Lemilem		Shemach (AMU)		
	Demand	Price	Demand	Price	Demand	Price	Demand	Price	
Irish potato	180	7	6	5	100	5	100	3.5	386
Cabbage	90	7	6	7	100	5	100	4	296
Kale	35	6	70	5	30	4			135
Spinach			10	5					10
Pepper	15	20	35	20	10	12			60
Garlic	30	53	100	50	20	55	35	40	185
Onion	200	12	100	10	350	11	3000	11	3650
Tomato	60	13	10	15	50	15	20	13	140
Beat root	12	5	7	6	6	8	20	4	45
Carrot	50	10	7	10	15	10	40	6	112
Ginger	5	12							5
Lettuce	30	10							30

E. Potential of Vegetable Production

Table 6 shows that the survey data of vegetables from two sites (Zigity and DaraMallo). The semi-annual average revenue of a farmer from vegetable at Zigity site

has estimated 20,030 birr using current market price. If one farmer produces these vegetables in 1810 square meter of farm on average, the estimated annual revenue of a farmer has 40, 060 birr.

Table 6. Estimated average semi-annual supply of vegetables in Zigity and DaraMallo

Vegetable	Average farm area (m2)	Semi-annual average supply(kg)	Unit price (Birr/ kg)	Revenue (Birr)
Irish potato	96	400	3	1200
Cabbage	500	1250	7	8750
Papper	700	480	12	5760
Garlic	28	8	50	400
Onion	63	50	10	500
Beat root	360	300	3	900
Carrot	3	200	3	600
Spinach	60	960	2	1920
Total	Zigity site			20,030
Irish potato	96	200	3	600
Cabbage	36	150	3	450
Onion	63	30	10	300
Beat root	55	165	2	330
Carrot	3	140	3	420
Spinach	50	180	1	180
Casaba (boye)		480	10	4800
Total	DaraMallo site			7080

At Zigity project site, there are 300 farmers who have supported by community development for smallholder farmers' project. If these 300 farmers can produce equal volume and kind of vegetables with the average farmer, the total revenue of project beneficiaries is 1,218,000 birr per year from 0.543 square kilometer. This indicates that

the area under study has huge potential to produce vegetables in limited farm.

From the survey result we observed that the average vegetable productivity in small farm plot and frequency of production per year is given in Table 7.

Table 7. Vegetable productivity in small plot of farm and production frequency

Vegetable	Plot area	Yield(kg)	number of plant	How long to give yield	Harvesting frequency	Giving yield
Spinach	1mx2m	3	18	3-4 months	Every week	2 year
Pepper	1mx2m	14	24	2-3 months	3times/ year	1year
Cabbage	2mx2m	22		3-4 months	3times/ year	1month
Kale	1mx2m	8	15	2-3 months	Every week	2 year
Carrot	0.5mx1m	5.5	20	3 months	3times/ year	1month
Beat root	1mx1m	3	9	3-4 months	3times/year	1month

F. Implication of Increased Production for Different Stockholders

Using the Arba Minch municipal market data, collected by Gamo Gofa Zone Marketing Department, it is clear that

increased production will mean a reduction in unit prices for vegetables at a certain point of time. For example 2005 and 2006 EC, vegetable pricing in 2006 shows an average decline compare to 2005 pricing of some products.

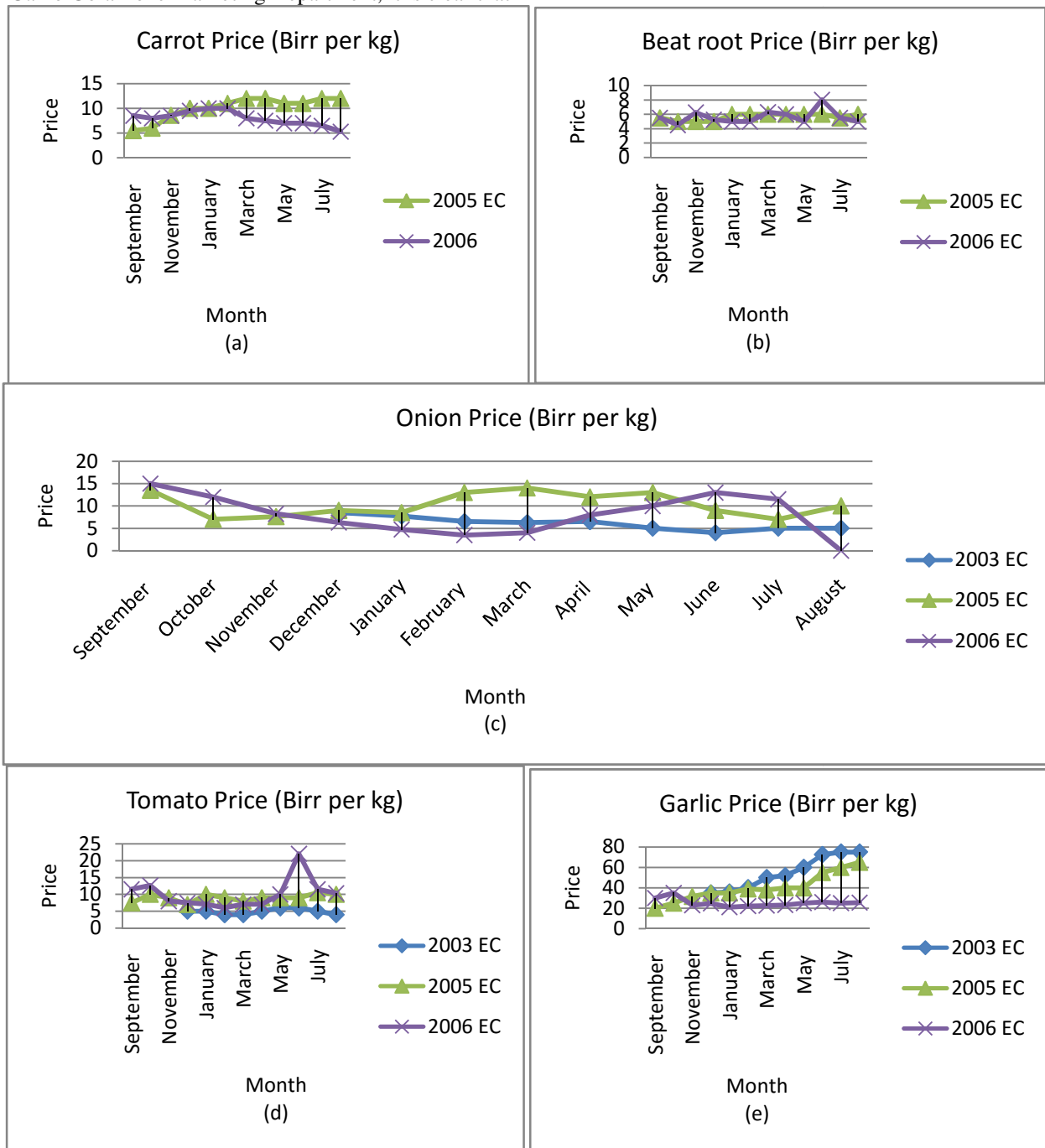


Fig. 1. Average monthly prices of different vegetables in different timings at Arba Minch municipal market.

In an attempt to better understand the results, interviews were also carried out with vendors at different outlets to clarify their pricing policies. Interviews with lettuce retailers who set volatile price determined that they increased their prices at a point that daily lettuce demand becomes less, to compensate shrinking lettuce at market place. They confirmed that one of lettuce buyer buy more and more volume she may get price discount.

There is a smattering of smaller farmers, who intermittently compete with them, but pricing is largely challenged by access of transportation to bring products to broader municipal markets and lack of refrigerator to keep fresh vegetables as it is. This may an indicator of why the pricing of garlic and hot pepper is relatively high motivating farmers to produce more. Overall implication for consumers with increased production will be positive. We have seen relatively price reductions within a short timeframe due to implementation of community development for smallholder farmers' project.

IV. CONCLUSION

On the basis of analysis of market data above, it is possible to draw some tentative conclusions as how any increases in production that may result implication of vegetable production strategy might affect producers, traders and consumers.

Farmers, with support of community development for smallholder farmers' project in Zigity and DaraMallo, manage to increase vegetable production; current indicators show that there is a requirement for improved logistic for distribution into the broader municipal market. Traders in the municipal market outlet share one complaint about shortage of local supply and consistency. They are unable to get a consistent supply of vegetables and they do not know how to store vegetables preserving its quality. Therefore, there are two aspects that must work synonymously – increased production coupled with good quality products and provision of market linkage with motivational pricing mechanisms.

The results used to map out; where we are currently locate, where we want to be, what needs to be done to get there? Taking a systematic approach to understanding our competitive position will enable us to base our marketing plans on fact. This research has been done suitably; the findings reflected the reality of what the market is thinking; local access of the vegetable market was limited with limited local supply. It could be helpful to upgrade consensus of key stakeholders (who will be responsible for acting on the results afterwards) from the start, to ensure that they are in a position to take ownership of the outcomes.

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