

**ECONOMIC EVALUATION OF EXISTING AND POTENTIAL MARKET  
OPPORTUNITIES FOR QUALITY BEEF IN TANZANIA:  
A CASE OF DAR ES SALAAM AND ARUSHA CITIES**

**BY**

**FAUSTA MAPUNDA MARCELLUS**

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## **ABSTRACT**

Despite potential contribution livestock marketing has in Tanzania to national economy, quality beef marketing has received less priority in national investments, research and export development. This study attempts to bridge the gap by assessing beef marketing efficiency focusing on Dar es Salaam and Arusha. The general objective of the study was to evaluate the relative efficiency of existing beef marketing system and explore potential market opportunities for quality beef in Tanzania. Specifically the study aimed to identify existing and potential market opportunities for quality beef, to describe quality beef attributes desired by consumers, to examine efficiency of beef marketing system operating in the two cities and to propose strategic marketing decision for the firms to improve their competitive position in the market. The study involved cross section data collected using structured questionnaires and a checklist through which a total of 198 respondents including consumers, hoteliers, butcheries and super marketers were administered. Descriptive as well as multiple response analysis techniques were used to handle the data. Marketing costs and gross margins were calculated. Results show that butchers were the main source of beef purchase by consumers. Beef marketing was generally profitable, the level of profits varied across types of beef marketed. Highest marketing margin were found in supermarkets. The study also found that, there is great potential market for quality beef in supermarket and hotels particularly tourist hotels and this potential is spreading to butchers and households as the income increases. As assessed by percentage of respondents, attributes desired by consumers in Dar es Salaam were freshness (31.4 %), tenderness (27.5 %) and carcass composition as reflected in amount of fat (27.5 %) while in Arusha customers were attracted by tenderness (61.5 %), freshness (28.1 %) and safety of the product (4.2 %). The average marketing efficiency ratios were 0.81 and 0.84 for butchers in Arusha and Dar es Salaam respectively and 0.63 at Shoprite supermarket level.

Based on the study results it is recommended that measures should be taken to improve the quality of cattle and thereby the quality of beef sold.

DECLARATION

I, Mapunda Fausta Marcellus, hereby declare to the senate of Sokoine University of Agriculture that the work presented here is my own and has not been submitted for a higher degree award in any other University.

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Mapunda Fausta Marcellus  
(MSc. Candidate)

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Date

The above declaration confirmed

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Dr. G. C Ashimogo  
(Supervisor)

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Date

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Above all, I thank God for all his blessing that made me archive my targets.

## DEDICATION

This work is dedicated to my parents and brother late Father Deogratias Mapunda who laid the foundation of my education.

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## LIST OF ABBREVIATIONS

BQPS	-	Beef Quality Perception Survey
CBEF	-	Canada Beef Export Federation
DTIS	-	Diagnostic Trade Integration Study
GDP	-	Gross Domestic Product
GM	-	Gross Margin
IGMAFU	-	Income Generation through Market Access and Improved Feed Utilization: Production of Quality beef Meat Project
LIDA	-	Livestock Industry Development Authority
MFC	-	Marginal Factor Cost
NARCO	-	National Ranching Corporation
NICCO	-	National Cold Chains Operations
TDL	-	Tanzania Hides and Skin
TIC	-	Tanzania Investment Center
TP	-	Tanganyika Peckers Limited
TSH	-	Tanzania Shorthorn Zebu
URT	-	United Republic of Tanzania
WTO	-	World Trade Organization

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background information**

Beef is the most important output of cattle production in Tanzania. Most meat consumed in Tanzania comes from the traditional cattle, which is composed of the Tanzania Shorthorn Zebu (TSZ) cattle (URT, 2006). About 70 % of beef produced is consumed domestically with export market being difficult to penetrate due to the Tanzania's very high regulatory demands, particularly in the area of disease management. According to Economic survey (2005) the contribution of livestock sub sector to Tanzanian agricultural GDP was estimated at 5.9%. Out of these, about 40% is beef production, 30% milk production and 30 % from poultry and small stock production (Ashimogo and Greenhalgh, 2007). These statistics imply that, the sub sector plays an important role in the economic development of this country. According to the 2006/2007-budget speech, Tanzania is estimated to have 18.5 million cattle, accounting for about 75 % of total livestock production. Of the cattle breeds 98 % Zebu while 2 % are improved beef and dairy cattle found in ranches and dairy farms.

In recent years quality attributes to market agricultural and livestock products has been an important issue. The knowledge on quality beef is important in marketing the products, which have consistent and definable qualities. Meat quality refers to the proportion of muscle (lean), fat and bones in the carcass. Normally lean occupies a greater proportion of the total composition of carcass (Kim *et al.*, 1996). Quality of beef produced is affected by such factors as breed, age, slaughter weight, sex and nutritional status of an animal.

Marketing of livestock and their products is an essential pathway for income generation and livelihoods for the poor (FAO, 1993). Recent interest in quality beef stems from the growing tourist industry, expansion of human population in cities that has increased urban demand for quality beef (Kidula, 1996), increased demand for quality cuts and presence of beef processing plants. Other factors include new habits in food consumption and market liberalization. Kohls and Uhl (1990) explained that specialized cattle feeding, growth of supermarkets and chain stores, improved transportation, grading, marketing information and product quality have been important contributors to the growth of this industry.

Beef sector is the most complex sector of the food industry. Ranchers, feed manufacturers, meat packers, processors, wholesalers, and retailers are interrelated through a complex chain of markets involving a large number of marketing activities, functions and institutions (Kohls and Uhl, 1990). Increased market orientation requires a good understanding of the market from all participants in the agro- food chain. The actors on that chain, (livestock- keepers, processors, traders, retailers and wholesalers and scientists) need to build stronger links between themselves in order to realize more of the value – added potential in a viable, sustainable food and agribusiness industry (Martin *et al.*, 2000).

From 1960s to 1980s, livestock industry in Tanzania was regulated by various institutions; including the Tanganyika Packers Limited (TPL). The sub sector was later under Livestock Industry Development Authority (LIDA) that had several companies such as National Cold Chain Operations (NICCO), Tanzania Dairies Limited (TDL), Tanzania Hides and Skin (THS) and Tanzania Ranching Corporation (NARCO). Currently the sector contributes about 5.0 % to the countries Gross Domestic Product (GDP) (Jeffer, 2006).

Over the past two decades there has been a substantial growth in private sector participation in marketing various livestock products. This has resulted to an increase in

the number of marketing channels and expanded the opportunity for private company to venture into beef business. This is evidenced by the expansion of private investors in ranching, feedlot, and meat-processing plants. Small and medium scale meat processing plants that have been established in urban center like Dar es Salaam and Arusha (where there is demand for processed meat) produce meat products like sausages minced meat, bacons and hams for local consumption. Examples of new initiatives include Arusha Meat Company and Happy Sausage in Arusha, Pride Meat and Tanzania Meat Product (TAN Meat) in Dar es Salaam and many others that have emerged in order to meet demand for quality beef and beef products.

Most of beef processing plants sell products to hotels, restaurants and households. For example the former Sheraton (Movenpick Hotel) imported meat from South Africa while New Africa Hotel bought different cuts of Tanzanian beef. In both hotels demand for meat was as high as 300kg per week (Ashimogo *et al.*, 1998). As much as 85% of processing plant revenue could come from these customers, yet it has not attained its full potential to contribute to economic growth due to a number of constraints. There is inadequate infrastructure for processing and marketing of livestock and livestock products. (URT, 2006). According to Diagnostic Trade Integration Study (2005) lack of technical expertise and poor quality control are among major constraint to the sub-sector. Beef is of low quality because livestock keepers do not manage animals professionally and meat houses are not graded. Furthermore there is lack of standards on farm as well as storage standards for meat. Also there is poor monitoring of sources of meat in the supply chain.

While all meat is supposed to be inspected and cleared through slaughterhouses, some of it is sourced directly from farm to business (bypassing inspection). Other constraints involve lack of efficient processing capacity. Suppliers lack training and have no techniques for merchandising marketing and pricing of their products. Furthermore there is no proper packing of meat products (DTIS, 2005). Instead of cutting the cow into standard cuts, usually the carcass is chopped from different part to make a kilogram of a “mix” meat.



Trend in domestic beef production has increased. According to URT (2006), annual meat production during the last 10 years (1995 – 2005) has increased from 244 000 tones to 378 500 tones (55% increase), mostly from the traditional sector. During the same period per capita consumption of meat increased from 5 to 11 kg per year, which is very low, compared to FAO recommendation of 50 kg. DTIS (2005) reported that, Tanzania produce about 80% of beef consumed within the country while the remaining 20% are imported. According to URT (2006) beef production has increased from 181 000 to 218 750 tons between year 2000/01 and 2006/07 respectively. Regardless of the increase in production trends, the performance of livestock industry is still low attributed by low growth rates, high mortality rates, low reproductive rates and poor quality of the product. Despite increase in meat production, 105.8 tons were imported in year 2005/06 (Table 1). Improvement of production coefficients coupled with adding value through processing could significantly increase output and income from the livestock industry (URT, 2006).

**Table 1: Quantity of beef produced and imported in Tanzania 2000/01 to 2006/07**

Year	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Beef produced in 000 tons	181	182.5	182.5	184	204.5	210.4	218.8
Beef imported in 000 kg	-	-	374.0	150	109.6	105.75	-

Source: Ministry of Livestock Development, 2006; Budget speech 2006/07.

### **1.1 Existing marketing systems**

Currently animals from traditional herd are mainly sold alive on the basis of buyer-seller estimates of quality in designated livestock markets (Kohls and Uhl, 1990; Ashimogo *et al.*, 1998). A total of 364 453 cattle (valued 43.7 billion) and 312 388 goats (valued at 5.6 billion) were sold in auctions in 2005/2006. Also a total of 1706 cattle (valued at Tshs million 647. 9) and 800 goats (valued at Tshs 28 million) were exported to Comoro and Burundi in the same year. NARCO, producers of quality beef sold 11 000 beef cattle (valued at Tshs 2.4 billion) (budget speech, 2006/07). However Kohls and Uhl, (1990) emphasize that, livestock should be sold based on carcass weight and grade. According to Ashimogo *et al.* (1998) some consumers in Dar es Salaam were willing to pay for imported beef or beef derived from Tanzania special cattle grade cuts compared to meat from other grades.

Among problems facing beef industry in Tanzania, is marketing constraints (Ministry of Water and Livestock Development, 2001). Livestock keepers face difficulties in organizing themselves to evaluate market opportunities and meet market requirement of product quality, quantity and timelines in delivering products (URT, 2006). However, there is inadequate information on existing and potential market opportunities of quality beef in Tanzania.

### **1.2 Problem statement and justification of the study**

Beef marketing is an important sector as it contributes to household income, national income and employment. Despite number of ruminant livestock in Tanzania (18.5 million) aggregate production of quality beef has always lagged behind aggregate consumption (Rutashobya, 2003). To meet this demand, the deficit is often covered by commercial

imports because local supply cannot cater for the desired quality attributes. In 2005/06, a total of 105 750 tones of beef were imported (Table 1). The extent to which beef is imported gives an indication of the demand and potential opportunities for local livestock keepers to exploit. Hand in hand with this, there is growing interest in establishment of ranches and feedlot in order to produce quality beef. This would increase supply of quality cattle and income of livestock keepers as well as national income. Trade liberalization and increased commercialization have opened opportunities to raise livestock and sell products in competitive markets. Nevertheless, there is ample evidence that these changes have not led to higher livestock income and improved welfare in rural areas.

Quality beef marketing research has infact received low priority in the national investment, research and export development. Mbogoh and Tilahun (1992) reported that, most of previous marketing studies on livestock development in sub- Saharan Africa have focused on marketing systems. They have given little consideration to market opportunities and options in terms of production and marketing of alternative products. Marketing is of benefit to both producers and consumers. Kotler (1998) suggests that any measure to increase productivity and efficiency of production should be accompanied by the efficient product marketing. If the marketing systems function efficiently, operations will be undertaken at lower costs, which may lower marketing margin, resulting in both higher prices for producers and lower costs for consumers (Debrah and Anteneh, 1991). This entails enhancing access to markets and reducing wastage through improved preservation and processing (Kurwijila *et al.*, 2002). Increased productivity and efficiency of livestock production will be fruitless unless if it is accompanied by the efficient product marketing mechanisms.

In Tanzania, information on existing and potential markets for quality beef and its marketing efficiency is not well documented. This study intends to bridge this information

gap by examining the efficiency of quality beef markets operating in Dar es Salaam and Arusha. It is a contribution to an on going project 'Income Generation through Market Access and Improved Feed Utilization: production of quality beef (IGMAFU)' meat project. The project aims at improving income of the livestock keepers through market access.

## **1.4 Objectives of the study**

### **1.4.1 General objective**

The general objective of the study is to evaluate the relative efficiency of existing beef marketing system and explore potential market opportunities for quality beef in Tanzania.

### **1.4.2 Specific objectives**

- i. To identify and describe quality beef attributes desired by consumers.
- ii. To identify existing and potential market opportunities for quality beef.
- iii. To examine efficiency of beef marketing system operating in Dar es Salaam and Arusha.
- iv. To propose strategic marketing decision for the firms to improve their competitive position in the market.

## **1.5 Research questions**

What are the attributes of quality beef desired by different kinds of consumers?

What are the existing market opportunities for quality beef producers?

Is beef marketing system in Dar es Salaam and Arusha operating efficiently?

What are strategic marketing decisions to improve firms' competitive position in the market?

## **1.6 Conceptual framework of the study**

The study used the combination of marketing functions and market organization approaches (Kohls and Uhl, 1990) to investigate the market performance particularly margins of market participants. Market efficiency can be judged based on how efficiently services are provided and how well prices guide resources into production of goods and services. The conceptual framework for this study has been adopted and modified from the 'Income Generation through Market Access and Improved Feed Utilization: production of quality beef (IGMAFU)' meat project. It shows that livestock marketing system is made up of pastoralists, traders who buy and hope to sell at a profit, transporters, local butchers, meat wholesalers and ultimately consumers as reflected by Bailey *et al.* (1999). Due to increased interest on quality beef consumption, more emphasis is made on marketing chain that is from livestock keepers through feedlots and ranches for value adding, through the abattoir for quality improvement of beef and better prices and ultimately processors and consumers.

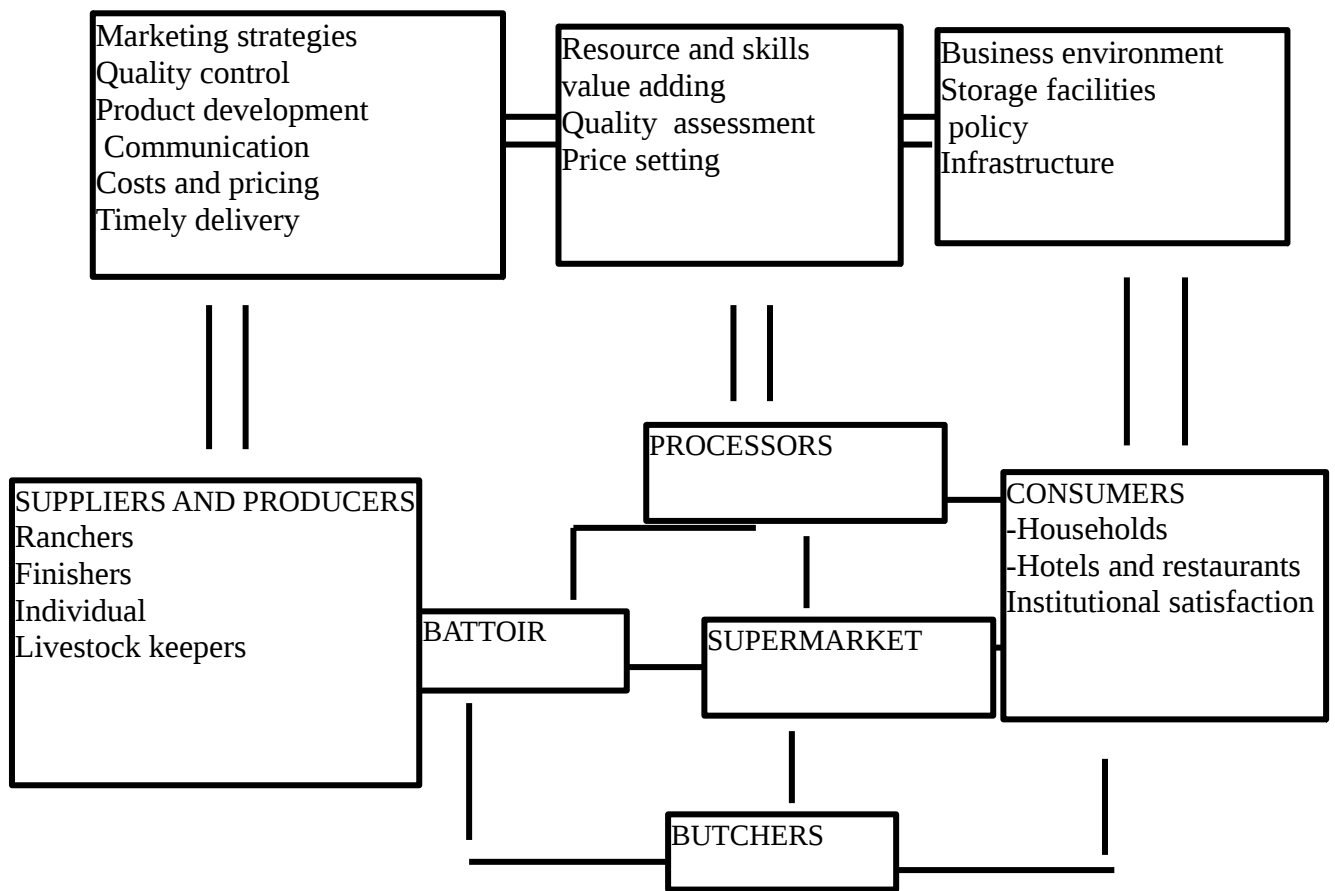
The movement of product from the abattoir to the consumers was examined by looking at various market functionaries and their role in providing the product with time form and place utilities (Figure 1). The Figure illustrates that access to resources, technical skill marketing strategies and business environment influences product access to the market. This imply that marketers with low resource endowment and inadequate technical skills normally lack the capacity to produce adequate product in terms of quality and quantity required on the markets and hence they can not access market such as supermarket (Chimilila, 2006).

Marketing strategies such as product development, quality control, pricing and promotions are essential in accessing market and hence opportunities. Good marketing strategies will

enable the producer and traders to focus on both customers and competitors and hence increases the chance to access market. Product development enables processed beef to have long shelf life, good appearance and easy to handle.

Meeting quality standards is important if the marketer has to supply to supermarket because supermarkets receive products from various sources. Business environment is also an important factor that influences access to markets. It includes physical infrastructure and policy. Physical infrastructure includes roads and other means of communication and policy environment includes standards, taxes and institutions.

When business environment is not conducive market access will not be guaranteed even if resources, skills and marketing strategies are met. Good policy environment such as institutional support on provision of training, credit and subsidies are important to enable participation of livestock keepers to the markets because they eliminate market access gaps. Institution support lowers transaction costs and empowers participants to access markets.



**Figure 1: A modified conceptual framework of the study**

Source : Income Generation Through Market Access and Feed Utilization: Production of Quality Beef Meat Project (IGMAFU) project document (2005).

### 1.7 Organization of the thesis

This study is organized into five chapters. Chapter one presents background information, problem statement and justification, objectives of the research question and conceptual framework. Chapter two covers literature review in terms of importance of beef industry, aspects of quality beef marketing and it also reviews the methodology used in assessing quality beef marketing efficiency. Methodology for this study is presented in chapter three where components of market structure, market conduct, and market performance are analyzed and methods of calculating gross and margins are explained. The chapter also

represents the main sources of data used and the method of data analysis. Results and discussion are presented in chapter four based on the specific objectives of the study and chapter (5) presents conclusion and recommendations emanating from the study.



## CHAPTER TWO

### LITERATURE REVIEW

#### **2.1 Importance of livestock sector**

Livestock sector play an important role as a source of food (meat, milk and eggs), income and employment. In addition livestock provides hides and skins, manure, drought animal power and save as relatively secure form of saving and investment. They also fulfill cultural roles which are valuable to many communities (URT, 2006). This chapter explains the importance of livestock sector to the economy, quality beef attributes desired by consumers and the view of different authors concerning quality beef. It also reviews the methodology of the study.

#### **2.2 Livestock markets**

Livestock production in the country has mainly been for the domestic market with minimal export of live animals, hides and skins within and to neighboring countries (URT, 2006). It is now known that livestock sector is developing particularly in meat processing to meet domestic demand and to create export opportunities. Agricultural Sector Development Program (2006) explain that, domestically, market opportunities for food are expanding especially for livestock products and crops with higher –income elasticity of demand. Marketing of meat particularly beef show that, red meat rather than processed (or canned) meat is the most marketed type of meat product (URT, 2006). Modern butchers, simple cutting and development of new products such as minced meat, hamburger and sausages could also expand beef market.



### 2.2.1 Market analysis

Rutashobya (2003) reported that, fillet steak is a major cash cow in quality beef business portfolio. Imported meat cuts forms 15% of the total meat sales and the major markets for imported meat cuts are expatriate and embassy staff. Supermarket buys special cuts from Kenya and South Africa at Tshs 8000 to 9000 per kilogram. Market demand for processed food has developed in all cultures and societies as division of labour progresses and people specializing in particular skills have increased levels of disposable income. However Martin *et al.* (2000) explained that, demand for processed food in Tanzania is very difficult to quantify, as reliable data do not exist. Today a wide spectrum of food processing enterprise are found in Africa ranging from very small entrepreneur to large-scale enterprises processing food for national and international markets. These markets are categorized into group of well-off urban population (plus a small number of wealthy rural people), people in cities and rural towns with average incomes, tourists and expatriates, restaurants and snack bars. These categories may be further subdivided into categories based on age, sex and food for office workers.

### 2.2.2 Market access for livestock keepers

Market access is defined as an opportunity for livestock keepers and other stakeholders to participate in a market to their advantage. This requires the operation of a market for which the marketers (including livestock keepers) to be able to obtain information regarding profitable opportunities if he/she chooses to. Market access is multidimensional and dynamic it is more than access to roads or towns. It depends on other factors e.g. availability of transport services, purchasing power of consumers and access to international Markets (Jabbar *et al.*, 2006).

Market participants may engage in moving, storing, processing, grading the commodity in expectations that will enhance its value to consumers. These marketing services incur costs but producers, consumers and the overall economy gain where the benefit of specialized

production and exchange exceeds the costs of marketing allowing greater volume and prices for process and lower prices for consumers (Ramatu, 2003). Market access is a powerful tool in transforming livestock to be more of business oriented.

Creightney (1993) indicated that market orientation is a key success factor to beef sector but the success is influenced by other factors like infrastructure. In order for any business to operate successfully good infrastructure must be available. Minten (1999) reported that in a liberalized environment, the presence of infrastructure such as roads and market sites is essential to increase efficiency of both marketing and production as they reduce transaction costs and ensure more competitive pricing condition in marketing than would occur in their absence.

### **2.2.3 Market information**

Participants in beef supply chain have, at best, imperfect information about some quality attributes of the product (e.g. live animals, carcasses, or cuts) they buy, handle, and/or process and sell to their downstream customers. In many cases, quality of the final product, the destination, and/or appropriate handling or processing of the input is contingent on these unobservable quality attributes (Miguel, 2004). Access to the market information reflects current situation on demand and supply, price trend, stock movements and any other information pertinent to trading. It aids producers in production planning and enhance equal bargaining power and enables exchange of information based upon business related issues with one voice.

Timely and accuracy information is particular important for the livestock keepers as farm profitability depends heavily upon the ability to get information (Bragg, 1998). The availability of market information permits producers; traders and consumers rationalize their buying and selling decisions. The market provides information to consumers and producers who in turn respond to price signals by producing products in quantities and qualities and forms commensurate with prices and cost. Availability and accessibility of

market information leads to the reduction of marketing costs (Basolet and Lutz, 1999).

### **2.3 Factors affecting demand for beef**

Based on consumer theory of demand, a wide variety of factors affect kind of beef consumed. Cotter (2002) explained among factors as level of income, price of beef and beef products, prices of related products (substitutes) health and safety and change in taste. When income is high or wages are good demand is for higher quality beef and better cuts.

Traditionally beef has been presented as luxury product and increased consumption has been linked to increased income (Ritson and Petrovici, 2000). However an improvement in Irish income during the 1990s, beef was commonly perceived as expensive or poor value for money compared to its near substitutes. This poor rating was compounded by the negative publicity surrounding the health debate red meat versus white meat. “A considerable drop in retail price of Irish beef improved its competitive position in respect to other meats. Becker *et al.* (2000) observed similar pattern in Germany where the price of beef increased, consumption decreased. However the conclusions drawn by Becker *et al.* (2000) indicated that, while price is important, it alone can not explain changes in meat consumption.

Mannion *et al.* (2000) indicated that, surveys have shown that health and price effects are the issues of most importance to consumers who reduced red meat consumption. Grunnert (1997) found that, taste through experience was still the most important attribute for European consumers when purchasing beef. Elsner (2002) indicated that individuals’ sense of taste changes as they get older. The European population is ageing and this has implication in relation to diet where beef consumption has decreased. Verbeke and Viane

(1999) highlighted that health and safety concerns were important motives in changing consumers' attitudes towards meat. According to MacBean (1996), the changing preference of countries towards convenience and food safety over taste were at the expense of meat more than any other product.

Wagner (2000) suggests that, emphasis should be put on consumers because future market opportunities for quality beef will depend upon the response to change consumer attitudes, lifestyle and preference. So consumers are a foundation of any food business (Lubowa, 2000). Other important aspects including pricing and promotion strategy can also increase the market share of the product (Erbaugh and Mbowe, 2003).

#### **2.4 Quality of beef and their attributes**

According to Stanton *et al.* (1994) quality is defined as a set of features and characteristics of a good or service that determine its ability to satisfy needs. The need to meet specific criteria in different markets has increased awareness of the concept of "quality" in beef industry. Quality particularly beef quality, is likely to be defined differently by exporters, retailers or purchasers and consumers. Processor perceive beef quality as reflecting carcass weight, fatness/conformation grade, lean meat yield and the timeliness of carcass supply in relation to market requirements. Cut size, meat colour, fat colour, marbling, texture appearance and the healthiness and/or safety aspects of the meat influence the retailer purchases.

The view from those exporting Irish beef is that much of beef lacks conformation, is over-fat, is from cattle that were too old to slaughter, has muscle that is too red, has fat that is too yellow and is too variable in the above characteristics and in pattern of supply (Hogan, 1999). In addition, for beef that is destined for the hotel, restaurant and institution trade,

the consumer may not be involved with the purchase and only experiences the cooked product, when tenderness, juiciness and aroma/flavour become the most important quality criteria. Maloney (1999) reported that, while consumers highly rated cooked, marbled steaks, they would not have chosen similar steaks in the supermarket because they were too fat.

#### **2.4.1 Quality beef attributes**

According to Schroeder (2002), beef quality partly refers to the proportion of muscle (lean), fat and bones in the carcass. Consumers want beef that is tender, flavorful and convenient to prepare. Others include healthiness, nutritiousness and assured safety from bacteria and other food-borne illnesses and competitively priced relative to substitute meats. Smith *et al.* (1995) reported that, the overall uniformity and consistency, tenderness, palatability and extent of external fat to be the major attributes of quality beef identified from surveys of beef packers, restaurants and retailers in the 1995 by the National Beef Quality Audit.

##### **2.4.1.1 Palatability**

Palatability or eating quality depends on the flavour, juiciness and tenderness of beef products Thompson (2000). Each of these three attributes can be enhanced through good production practices at the farm, as well as at the meat plant. Also breeds and genetics may enhance tenderness. Tenderness has commonly been identified as the most important contributor to palatability. However, a Danish survey of eating quality between breeds clearly showed that meat from Jersey is rated superior regarding tenderness compared with beef cattle breeds (Maloney 1999).

The same pattern was observed in an experiment with beef cattle crossed with Danish

Friesian compared with pure breed Friesian, as meat from the purebred Friesian was tenderer than that of the beef cattle crosses (Andersen *et al.*, 2005). Koohmaraie *et al.* (1996) suggest that beef can also be chemically tenderized using calcium chloride as applied in some retail fresh pork products. Selection of heifers for beef production enhances tenderness and careful handling of the animal to minimize stress during transport and before stunning is also important.

#### **2.4.1.2 Appearance and shelf life**

Freshness and quality of beef items may be judged by product appearance. According to Andersen (2005) appearance determines the consumer's purchase of meat in the modern society. Consumers look for colour, fluid and fat content. The ability to maintain quality attributes over a period of time is measured in terms of shelf life (Smith *et al.*, 1995).

#### **2.4.1.3 Nutritional composition**

Smith *et al.* (1995) explain that, nutritional value of meat products is determined by the content of nutrients (vitamins, minerals, protein, fat) and carbohydrates. Beef is naturally rich in protein and contain significant amount of minerals; Iron and Zinc; and Vitamins including Riboflavin, Thiamine, Niacin, vitamin B<sub>6</sub> and B<sub>12</sub>.

Markets are now demanding and paying premiums for carcasses that meet accurate specifications because nutrition, management (growth pathways) as well as genetic traits can change meat quality attributes. Producers must be able to manipulate these parameters to produce a product that will allow them to consistently meet market specifications, and gain a premium for their product. Improvement in genetic selection techniques allows producers to select cattle with traits that are more appropriate for meeting market requirements. Differences in carcass traits such as retail beef yield, and marbling (Intramuscular fat) that exist within and across breeds means that a producer can influence eating quality through genetic selection.



#### **2.4.2 International beef quality perception**

Ogundele and Okoruwa (2003) reported a study on economic analysis of beef marketing to examine economic efficiency of beef marketing in Nigeria. Different marketing functions performed by the beef sellers were identified and evaluated. The size and different components of beef marketing costs and margins were determined. The evaluation of beef sellers marketing efficiency showed that they are highly efficient with an average efficiency ratio of 0.85. Analysis of the size and different component of marketing costs and margins revealed that purchase cost and transportation cost constituted the highest share of the total marketing cost.

In 2006 Beef Quality Perceptions Survey (BQPS) was conducted by independent market research firms to determine the importance of individual beef quality attributes to senior level personnel in the retail, restaurant and hotel industries. Over 900 individuals in Japan, Korea, Taiwan and Hong Kong and Mexico were interviewed in the research commissioned by the Canada Beef Export Federation (CBEF). A summary of key results in relation to meat colour, fat colour, texture, and marbling was provided. More than 95% of individuals interviewed agreed that “grading standards designed to consistently deliver beef with white or light amber coloured fat, bright red meat colour and firm muscle texture” would provide their company with a quality advantage.

The overall results of the survey indicate that, Canadian beef grading standards consider the requirements of the international market place (Canada Beef Export Federation, 2006). A consensus opinion among interviewees in U.S.A. beef industry was that cattle prices need to be more closely tied to meat yield and eating quality of the meat. The first thing to improve meat pricing is to find ways to more accurately predict these attributes. Thus a number of technological developments need to be explored to improve the accuracy of quality prediction.

A number of models have been developed to describe how consumers develop their perception of quality for food such as beef. These models are based on consumer behaviour theory which postulates that a consumer's perception of quality is based on three types of characteristics: search characteristics (observable before consumption, such as leanness and colour of the meat), experience characteristics (determined at point of consumption, such as tenderness and flavour) and credence characteristics (not readily verifiable by a consumer, such as long term health hazards) (Becker, 2000; Hoffman, 2000).

Furthermore, consumers, in attempting to evaluate the quality of a food item such as beef, look for cues to attributes they value as contributing towards the overall eating quality, nutritional value and safety of the meat. These cues may be intrinsic i.e. part of the product itself (such as smell and leanness) or extrinsic cues such as packaging, the information/labels or place of purchase. Most models divide the process of developing perceptions of the quality of beef into two stages, 'before purchase' and 'after purchase', identified by Glitsch (2000) as quality in the shop and quality in the home respectively (Grunert *et al.*, 2004; Glitsch, 2000; Hoffmann, 2000).

However, Mannion *et al.* (2000) identify three stages: 'prior to purchase' (perceptions formed prior to entering the shop), 'point of purchase' (perceptions formed within the shop) and 'point of consumption' (perceptions formed while consuming beef). At the point of purchase, the purchaser is generally able to view the meat/beef and assess quality in the shop on the basis of intrinsic cues (colour, leanness, presence of fat/marbling) and extrinsic cues (quality assurance labels, place of purchase, price and country of origin) (Glitsch, 2000).

Consumers may then form expectations of eating quality (tenderness, flavour, juiciness) and of health, convenience and the appropriateness of the production process (Glitsch,

2000; Grunert *et al.*, 2004). This leads to expectations of the degree to which their purchase motive will be fulfilled (Grunert *et al.*, 2004) and ultimately to a purchase or no purchase decision. The ultimate level of consumer satisfaction - influencing future purchases - is a function of both the degree to which perceived quality expectations formed in the shop matched with eating experience at home and the degree to which the purchase motive is fulfilled (Grunert *et al.*, 2004).

However the level of satisfaction met by eating experience depends on the accuracy of the initial prediction of eating quality as well as the actual physical (sensoric) characteristics of the beef. Consumers do not always correctly interpret the physical/intrinsic cues to eating quality (West *et al.*, 2001; Grunert *et al.*, 2004; Verbeke, 2000; Issanchou, 1996; Peterson *et al.*, 2001). For example, consumers perceiving fat in beef as detrimental to health may lower their assessment of eating quality, when, in fact, some degree of marbling contributes positively by enhancing flavour, tenderness and juiciness (Grunert *et al.*, 2004). Hence it may be beneficial to the beef industry understand the cues consumers use. Australian consumers use at the point of purchase and the perceived helpfulness of these cues for predicting eating quality. Additionally it may be helpful to identify any associations between demographics and the perceived helpfulness of cues that might have implications for marketers.

## **2.5 Classification of beef produced in Tanzania**

According to Miguel (2004), beef produced in Tanzania is classified in four main groups; standard beef, fair average quality beef, prime beef, and choice beef. Quality attributes are determined by breed, age, and feeds.

### **2.5.1 Standard beef**

Standard beef is produced from mature Tanzania Shorthorn Zebu (TSZ) steers and cows

with an average age of 3 to 4 years, produced under natural pastures at a live weight of 250 to 350 kg. They produce beef carcasses ranging from 130 to 182 kg and carcass composition of 68.01% Lean, 25% Bone and 6.99 % Fat. This beef is the most preferred type in the country for stew.

### **2.5.2 Fair average quality beef**

Fair Average Quality (FAQ) beef is preferred in tourist hotels and restaurants due to its tenderness, marbling and aroma. This beef is produced from TSZ steers aged between 2.5 to 3.5 years with a live weight of 220 to 280 kg under natural pastures and finished in feedlot for 45 to 65 days. The steers produce carcasses weighing 120 to 150 kg, with composition of 69.64 % Lean, 19.05 % Bone and 10.71% Fat.

### **2.5.3 Prime beef**

Prime beef is produced from Boran and their crosses maintained on natural pastures in NARCO ranches, private commercial farms and Livestock Multiplication Units (LMU). At three years of age the animals weigh between 300-350 kg yielding a carcass weight between 150-180 kg. Beef produced from the steers is tender with moderate back fat cover.

### **2.5.4 Choice beef**

Choice beef is produced from steers aged between 9-12 months weighing 220 - 250 kg, fed high-energy rations in feedlots for 120 - 150 days. The animals attain a live weight of 350-380 kg yielding high quality carcasses that are tender, juicy and marbled. The carcass composition is 61.38% Lean, 18.21% Bone and 20.41 % Fat. Choice beef is preferred for grilling and roasting. Currently 198 tones of choice beef are being produced.

## **2.6 Policy reforms in Tanzania**

Since mid 1980's the country has been undertaking gradual and fundamental macro and micro economic reforms aimed at transforming the economy from state monopoly and

central planning to market and private sector based economy. Some of policy reforms which have been implemented include trade liberalization to remove trade barriers, financial sector reform whereby the banking system has been liberalized to allow operation of private banks, privatization policy by transferring the public corporate to the private sector, enforcing accountability and decentralization aimed at improving participation of the stakeholders in decision making.

Between 1991 and 2002, fifteen major legislations have been enacted including the Tanzania Investment Act 1997 that enabled to establish Tanzania Investment Centre (TIC) as the primary government agency to coordinate, encourage, promote and facilitate investment in Tanzania. Trade and investment are keys to achieving higher contribution of the livestock sector to the GDP and the well-being of people in Tanzania.

Apart from the policy, Tanzania has already developed strategically trade facilitating infrastructure including livestock and livestock marketing infrastructures that support the supply chain from producer to the consumer. These include 300 primary markets, 10 secondary markets (located in Arusha, Dodoma, Singida, Tabora, Shinyanga, Kagera, Mwanza, Mbeya and Mara). Other facilities include holding grounds and veterinary checkpoints. In addition there is a well-structured Veterinary Services that facilitates compliance with WTO measures. Investments are amplified through opening up of ranches (a potential source of quality beef for export) and processing plants for animal products such as abattoirs and tanneries.

### **2.6.1 Technological quality**

Ashimogo and Greenhalgh (2007) reported that, modern cattle and small stock slaughter

facilities are lacking in Tanzania. Currently there are only two modern abattoirs; the Sakina abattoir in Arusha with capacity of slaughtering 200 cattle per day and Dodoma abattoir with capacity of slaughtering 214 cattle. The two abattoirs have been in operation for five years.

## **2.7 Existing opportunities**

Tanzania has huge opportunities for investment as it is endowed with a favorable climate, political stability, strategic geographical location which makes it accessible to potential export markets in the region and the Gulf States (URT, 2006). Miguel (2004) reported that investments are amplified through opening up of ranches, processing plants for animal products such as abattoirs and tanneries). Based on existing literature the following are the opportunities which exist now and in future for improvement of marketing practices and efficiencies for both domestic and international marketing of quality beef.

Existence of a large herd of indigenous livestock (Tanzania Shorthorn Zebu) of about 98 % of Tanzanian cattle population create opportunity which once exploited can significantly contribute to national GDP. The TSZ provide the bulk for meat consumed in the country. Its beef is preferred due to its aroma, juiciness, marbling and tenderness. When TSZ fattened, it is slaughtered at the age of 2.5 to 3.5 years URT, 2006.

Furthermore there are cross breed cattle that are offspring of dairy type (Ayrshire, Friesian) and beef types (Simmental) with TSZ or Boran. Cross breed cattle population is estimated 435 000. At the age of 9 to 12 month, the initial weights of 220 to 250 kg under feedlot conditions steer attain an average weight of 350 in 90 days producing excellent carcass. Boran, a relatively large size and fast growing breed reaches live weight of 300 kg in three years under natural pasture is also a good source of quality beef. Under feedlot

condition Boran steers at the age of 1.5 years weigh 250 kg and attain 350kg live weight within 90 days producing high quality carcass with good aroma, marbling and juiciness.

Land resource base estimated at 94 million hectares out of which 60 million hectares are rangeland suitable for livestock production-thus there exist an opportunity of establishing beef ranches, beef processing and packing products (UDEEC, 2005). Readily available domestic market due to demographic changes also creates an opportunity for marketing quality beef. Tanzania is estimated to have about 36.5 million people. According to Ashimogo *et al.* (1998) increased population especially in cities like Dar es Salaam generates the highest meat demand in the country. If every household consumes 0.25 kg per day *certeris peribus* then beef market opportunities would increase. (Andersen *et al.*, 2005) reported that urbanization is occurring quickly in Africa, and incomes are higher in the urban than the rural areas. Urbanization creates an opportunity for beef marketing. Urban dwellers consume more beef than rural people.

So urban food markets are more dynamic sources of demand and city dwellers seem to be more willing to pay for specific qualities compared with residents in the country. Ashimogo *et al.* (1998) reported that, cities have, and will continue to have higher potentials for specialized meat cuts for its residence. Since cities are growing very fast it becomes difficult for the employees to drive home for lunch hence they now depend on fast food restaurants that have become attractive as amusement and recreational places for families and couples (Kidula, 1996). As urbanization continues a pace, infrastructure improves, turn increasingly to urban markets to increase their sales and incomes (Andersen *et al.*, 2005)

The growing of tourism industry, tourist hotels and supermarkets create more opportunities for livestock keepers and marketers to expand beef business. As priority sector to Tanzanian economy, tourism has significant impact on stimulating and facilitating excellent investment opportunities in construction and management of hotels, lodges and restaurants that could expand demand for quality beef (Kidula, 1996). Semboja and Chami (2004) discuss the linkage that tourism has to the rest of the economy. Tourism backward linkages in Tanzania are spread out over many sectors. Among the key sectors are livestock (beef, Lamb and pork). About 80% of beef consumed is produced domestically while 20% is imported (Diagnostic Trade Integration Study, 2005).

## **2.8 Pricing strategy**

Price affects both amount to be offered for sale and amount purchased by the final consumers (Debra and Anteneh, 1991). Price is the single most important signal to encourage production of beef demanded by consumers. Andersen *et al.* (2005) reported that, price as a critical factor for the competitiveness of meat processing industry. At consumer level, price is an extremely visible attribute related to quality. When assessing a quality characteristic that is the degree to which his / her expectations have been met in relation to the price given. Further Andersen explained that, the willingness of consumer in industrialized countries to pay for specific food quality seems to depend on consumer segments for example city dwellers seems to be more willing to pay for specific qualities compared with resident in the country.

Willingness to pay for high price for food seems also to depend on whether it is going to be served during weekend and / or at social gathering or an everyday meal. Ashimogo *et al.* (1988) explain that, price may be cost based, competition based, demand based or some combination of these strategies. According to pricing strategy is based on perceived live



weight. Fausti *et al.* (1993) explain that, pricing accuracy increases as cattle pricing moves from live weight to dressed weight and grades. Schroeder *et al.* (2002) suggest that cattle prices need to be more closely tied to red meat yield and eating quality of the meat.

## **2.9 Strategic marketing decisions**

The four elements of marketing mix (4Ps) Product, Price, Personnel and Promotion are essential in ensuring beef markets because management of any business is a very challenging task of satisfying consumers. Schroeder *et al.* (2002) reported that, strategic market decisions were successful applied on assessing beef quality and pricing to value in the beef industry in United State. Erbough and Mbowa (2003) have proved that, seed firms in Uganda applied strategic marketing decisions successfully to analyze what firms could do to improve their competitive positions in the market to become market leaders in seed industry. In this study the same methodology will be adopted in order to study existing and other strategies that could potentially be applied by the firms in Tanzania to expand beef business.

## **2.10 Review of the methodology**

### **2.10.1 Method of quantifying opportunity**

The future expansion of the market for the quality beef will be explored using a simple demand projection model adopted by Mdoe and Wiggins (1996). The model is based on the growth of population and income; that may be achieved through the following formula;

$$D_n = D_o (1 + P_r)^n (1 + Y_r \cdot E_y)^n \text{----- (i)}$$

Where

$D_n$  = beef consumption in year  $n$ ;  $D_0$  =beef consumption in a base year;  $P_r$  = Population growth rate per annum;  $Y_r$  = rate of growth in per capita income per annum;  $E_y$  = Income elasticity of demand for beef; and  $n$  = number of years.

Using this model, it seems the market may be expected to expand quite rapidly presenting an opportunity to develop quality beef industry. Demand for the two cities Dar es Salaam and Arusha might be estimated based on the population data of 2000 population census, and growth rates for urban areas for that period has to hold for the period 2010 -2020. Income elasticity of the study area has to assume to hold for the ten years projection period. Income growth per person per year has also to be included. The demand projection was not performed since no information was collected concerning income of respondents.

### **2.10.2 Gross margin analysis**

Gross margin is used as a guideline to a selection of an enterprise. It is used as measure of enterprise profitability and as such a means of selecting business plan. Phiri (1991) concluded that, although gross margin is not an absolute measure of profitability it remain the most satisfactory measure of resources use efficiency available in small scale agriculture. Its main advantage is that, it doesn't involve tedious calculations. Gross margin analysis is also more flexible in accommodating personal expectations and limitation of a particular situation. This analysis has been used to compare gross margins for different product type in the same or different time and place to suggest relative efficiency of different markets.

The sizes of gross margin provide an insight into other important characteristics and the formation of hypothesis concerning farming or marketing efficiency. If gross margin decline with increasing raw materials supply, economies of scale may be a factor and if they rise with production in the provision of market services may be implied. It was useful to study

gross margin of beef marketers in order to establish their economic profitability. More returns would warrant future marketing of the product. This considers both the marketing costs and returns.

Principally,  $GM=TR-TVC$ ----- (ii)

Where

GM= gross margin per quantity of beef handled (TAS)

TR = total revenue per quantity of beef handled (TAS)

TVC = total variable cost incurred to market a particular quantity of beef (TAS)

### **2.10.3 Marketing margins**

A common means of measuring market efficiency is to examine marketing margin. Marketing margin is the difference between prices at two market levels. The term marketing margin is commonly used to refer to the difference between farm-gate price and consumer prices of an equivalent quantity and quality of product. This is an attempt to evaluate economic or pricing efficiency. However it may also describe price difference between other points on the marketing chain for example between wholesaler and retailer prices like the case of this study.

Marketing margin represent the price charged for one or a collection of marketing services. For example the difference between producer and consumer or retailers price is the amount charged for all the marketing services rendered between producer and consumer or retail place, including buying, transport, storage, processing marketing fees etc. Under competitive condition, the size of marketing margin would be the outcome of the supply and demand for marketing services and they would equal minimum cost of services plus normal profit (Mwenda, 1993). The quantity and quality of marketing services depend on the demand and supply of marketing services and or the degree of competition in the market place. For the purpose of this study the market margin analysis was presented by a

formula.

$$MM = BS_p - BB_p \text{----- (iii)}$$

Where

MM= marketing margin of beef (TAS) per kilogram

BS<sub>p</sub> = Beef selling price (TAS) per kilogram

BB<sub>p</sub> = Beef buying price (TAS) per kilogram

#### **2.10.4 Marketing efficiency models**

According to Kohl's and Uhl (1990), agricultural marketing refers to the performance of all business activities (marketing functions) involved in the flow of goods and services from the point of production until the same good is at the hands of the ultimate consumers. By this definition the performance of an economic system will depend much on the efficiency and effectiveness with which the marketing function are carried out. Given basic conditions the performance of particular industry depends on the conduct of its sellers and buyers, which in turn is strongly influenced by structure of relevant markets (Timmer *et al.*, 1983). The Structure –Conduct –Performance Model is widely used by economists to evaluate the performance of marketing system, as it will be applied in this study to analyze beef marketing efficiency.

#### **2.10.5 The structure- conduct- performance model (S-C-P)**

This model emphasizes the relationship between functionally similar firm and their market behaviour as a group. Timmer *et al.* (1983) explained that, the performance of particular industry depends on the conduct of its sellers and buyers which in turn is strongly influenced by structure of relevant market. The model has three components that structure, conduct and performance. In this study the S-C-P model will be used to assess marketing efficiency because it provides the only well developed framework for examining behavior of imperfectly competitive market.

### 2.10.5.1 Feature of the S-C-P model

#### **(i) Market structure**

According to Scarborough and Kydd (1992), market structure refers to the organizational characteristics of a market that influence the nature of competition and pricing mechanisms within the market. Structural characteristics may be used as a basis to classify markets. Structurally the market may be perfectly competitive (many sellers and buyers) monopolistic (one seller) monopsonic (single buyer) or oligopolistic (few sellers) Pomey and Trinidad, (1995). The common measures of efficiency of this component are the degree of concentration, market transparency (information), barriers to entry and product differentiation. According to this, performance is expected to be satisfactory under the following three conditions; if sufficient number of buyers and sellers exist to provide alternative outlets without one of them having the market power to dominate others; if market transparency with regard to product quality, varieties grades and price is given and if no serious bias to market entry and exit (Scarborough and kydd 1992).

#### **(ii) Market conduct**

Market conduct is one of the determinants of performance of a marketing system and refers to firm behaviour in adopting or adjusting to the market in which they sell or buy (Pomey and Trinidad 1995). This includes pricing and selling policies, product promotional strategies and research and development activities (kohl and Uhl, 1990).

#### **(iii) Market performance**

Market performance is defined as the way in which markets and marketing contribute to various aspects of economic performance. Pomey and Trinidad (1995) explained that market performance refers to the impact of structure and conduct as measured in terms of variables such as prices, costs and volume of output. By analyzing the level of marketing margins and their cost components it is possible to evaluate the impact of the structure and

conduct characteristics on market performance. The common indicators of performance include level of quality, and variety of product within the market, stability of output, price and profit, the rate of progressiveness of participants and industry in developing both products and technologies, relative to evident rates of the attainability and relative to the cost of progress.

#### **2.10.6 Measures of marketing efficiency**

Marketing efficiency is the ratio of output relative to inputs. The performance criteria may be divided into two categories; those related to economic efficiency and other performance objectives. The former includes technical, pricing and exchange efficiency and the later include innovation, inter-sectoral resource transfer, equity employment, and food security and coordination efficiency. However, in this study more focus will be on pricing efficiency.

##### **2.10.6.1 Pricing efficiency**

Pricing efficiency caters for engineering optima of output maximization regardless of magnitude of the incremental costs of production. Pricing efficiency however, maximization of output is only sufficient but not a necessary condition of optimality. Colman and Young (1989) stress that allocative efficiency presumes that entrepreneur's objectives function is one of profit maximization and will therefore provide goods and/or services at a level of output which ensures that the value of marginal product (VMP) equals the marginal factor costs (MFC). Pricing efficiency is evaluated in terms of (a) price trends, (b) market integration that evaluate the relative movement of prices in geographically separated markets and (c) marketing margins of prices at different nodes of the marketing chain. Potential sources of price inefficiency are lack of information and lack of standard, weights and measures. Efficiency in this case is taken to be a function of the accuracy, timeliness, and availability of price information (Ellis, 1992).

Market efficiency requires buyers and sellers to adjust to uncertainty about product quality. Uncertainty about product quality is an inverse function of the availability of information about the product. If one assumes that buyer and seller of cattle are on average risk averse, then it would be expected that the following type of market behavior will prevail; 1. As uncertainty about product quality increases, buyers will offer a lower average price for the product; 2. A reduction in the amount of information on product quality reduces buyer price discrimination or in other words, the variance in the price offered by buyers is reduced; 3. As information about product quality increases, price discrimination increases and sellers incur a greater price risk; 4. Sellers will accept a lower average price in exchange for a reduction in price variability. Sellers accepting lower average price implies lower average profit earned by sellers/producer. Profit variability should then increase as one moves from live weight to grade and yield marketing method. With the live weight marketing all of the carcass information is unknown. The price is based upon average estimates of the carcass traits (Fausti *et al.*, 1993).

## CHAPTER THREE

### METHODOLOGY

#### 3.1 The Study areas

This study was undertaken in Dar es Salaam and Arusha cities. The two cities were selected as major consumption areas since both are commercial cities with large demand for processed products resulting from higher population size and higher peoples' income. Both cities are tourist destinations where Dar es Salaam have attractive beaches while Arusha attracts many tourists due to number of recreational facilities such as Ngorongoro crater, National parks.

##### 3.1.1 Dar es Salaam region

###### 3.1.1.1 Location and size

Dar es Salaam region is situated at an attitude of about 10 meters above the sea level. The region is bordered by Indian Ocean on the eastern part of Tanzania mainland and surrounded by the coast region on the other sides. The City is located between latitudes  $6.36^{\circ}$  and  $7^{\circ}$  degrees to the south of Equator and longitudes  $39.0$  and  $33.33$  to the east of Greenwich. The city is estimated to cover about 1 350 square kilometers; Out of this, 20  $\text{km}^2$  is forest reserve and 900  $\text{km}^2$  is suitable for agriculture (URT, 2004).

###### 3.1.1.2 Population size and administrative unit

According to 2002 census data, Dar es Salaam has a population of 2.5 million inhabitants and annual average growth rate of 4.3 % (URT, 2002). Administratively, Dar es Salaam has three municipalities namely Ilala, Kinondoni and Temeke. The study was carried out in Kinondoni and Ilala because of its highest number of butchers, supermarkets and



hotels.

### **3.1.1.3 Climatic condition**

Dar es Salaam has coastal climate typical of equatorial region characterized as “hot and humid” with small seasonal and daily variation in temperature. The city is hot with average mean temperature of 35°C during January and March. This decreases to 25° during June to August. The rainfall regime is bimodal with two rainy seasons and two dry seasons. The “short rains” are in October to December with monthly average rainfall of about 567 mm and “Long rains” are between March and May with monthly mean of about 250 mm (URT, 2004).

### **3.1.1.4 Socio economic activities**

People with different ethnic backgrounds inhabit Dar es Salaam city. Major economic activities include internal trade, tourism, transport and communication, urban agriculture, fishing, mining and queries public administration, utility services and many others. Internal trade (Wholesale retail trade and hotel area) is the catalytic factor in the economic activities of the city. The sector grew by 6.5 % in 2003. The contribution of the sector to economy in the same year was 16. 8% (URT, 2004). Eighty percent of the residents depend on food from other regions because food produced within the region is inadequate to meet the demand. Dar es Salaam dwellers are employed workers, farmers and/or peasants and business persons who are permanently or temporally living in the city.

## **3.1.2 Arusha region**

### **3.1.2.1 Location and size**

Arusha region is located in the north-eastern corner of Tanzania. It lies below the equator between latitude 2° and 6°. Longitudinally the region is situated between 35° and 38° East

of Greenwich. The region has a common border with Kenya in the north, to the east it borders with Kilimanjaro and Tanga regions. To the south it shares a border with Manyara region and to the west with Singida, Shinyanga and Mara regions. Arusha region is divided into five administrative districts namely: Arumeru, Arusha, Karatu, Monduli and Ngorongoro.

### **3.1.2.2 Population size and administrative unit**

According to 2002 population census, Arusha region has a population of 1 288 088 people. Arusha the capital of the city is well established as tourist capital with an impressive array of facilities. These facilities include a fully equipped conference centre (AICC), hotel facilities (over 2000 beds) Kilimanjaro International Airport (KIA) which is only half an hour away by car. Arusha has more recreation areas and receive many tourists who visit Ngorongoro Crater, Serengeti National Park and many others.

### **3.1.2.3 Climatic condition**

Arusha Region has moderate temperatures. The average annual temperature is 21°C in the highlands and 24 °C in the lowlands. Arusha region has two types of rainfall patterns; unimodal and bimodal. Usually Arusha get both short and long rains. The short rains normally start in October and end up in December, while the long rains start in February and end up in June. These short rains usually contribute about 25% of total seasonal production. Long rains are the main season for cereal crops. However the areas with reliable rainfall (1000-1200 mm) which are in Arumeru and Arusha districts are highly populated (URT, 1998).

### **3.1.2.4 Socio economic activities**

The main economic activity of Arusha region is agriculture. Both commercial and peasantry farming are carried out in the region. Commercial farming is for seed beans, coffee growing and floriculture in Arumeru and Arusha districts. Tourism is important

economic activity contributing adequately to the region's economy. It is estimated that this sector contributes roughly 20 percent to the region's GDP. Similarly the large livestock population is an important contribution to the economy of the region. A large Indigenous cattle herd and a comparatively well developed dairy industry contribute further towards the generation of more incomes.

### **3.2 Methodology**

Because of time and resource constraints a case-study approach was adopted for this study. The case study examined the marketing system for quality beef in Arusha and Dar es Salaam to determine its relative efficiency and alternative marketing system. Aspects examined were consumer price level, the types, reliability and stability or flexibility of the service offered to consumers and product quality.

#### **3.2.1 Data collection**

Both primary and secondary data were used in this study. For primary data collection, questionnaires for each of the different market categories of respondents were designed, tested and adjusted. Most information was obtained through observation, interviews using structured questionnaires and use of checklist. Personal interview with the upper level management of selected tourist hotels, supermarkets, households and individual customers were done. Two types of questionnaires (appendix 1-4) were administered to consumers (individual customers, household and hoteliers) and marketers (butcheries, supermarket staff).

A checklist (Appendix 5) was administered to beef processing companies (Arusha Meat Company and Happy Sausage Company Limited). Information on major sources of quality beef, attributes used to determine quality beef, pricing strategies of quality beef and costs associated with marketing quality beef were explored. On consumers' side, information

was based on attributes of quality beef they desire. The sample size for the study was 198 respondents (Table 2) categorized into two groups of consumers and marketers. Individuals, household, hoteliers were regarded as consumers while marketers involved street butcheries and supermarkets butcheries.

**Table 2: Sample selection**

District	Household consumers	Hotels and restaurant	Butchers	Supermarket	Processors
Ilala	42	-	5	2	-
Kinondoni	60	7	12	2	-
Arusha	48	2	13	3	2
Total	150	9	30	7	2

Literature search was used to contrast information obtained in personal interviews. Secondary data on quality beef imports and export were collected. The source of the data was from the Tanzania National Bureau of Statistics, Ministry of Livestock Development and Tanzania Revenue Authority (TRA).

### 3.2.2 Sampling technique and size

The sampling frame consisted of tourist hotels, supermarkets, individual customers and households. Purposive sampling was the best technique used to obtain the desired sample (representative of a population). Places like Mikocheni, Oysterbay Upanga and Sinza were selected as high income class area while other respondent were selected from Kijitonyama, Kimara, Kariakoo and Ilala. Households, individual customers, Hoteliers, butcheries from meat shops supermarkets butcheries, processors were selected. Purposive sampling method was used since there were no records of beef marketers and consumers.

Firms interviewed included 150 household consumers (102 households in Dar es Salaam and 48 in Arusha), 30 butcheries (17 and 13 from Dar es Salaam and Arusha

respectively), 9 hotels, 7 supermarkets and 2 beef processors were selected based on the categories of products currently being sold. Out of 150 households, 30 respondents were interviewed in the supermarkets that were in the process of buying beef. This procedure was successful in Lima and Peru to interview people that were in the act of buying processed products (Scott, 1995). The sample was justifiable based on the Farm Level applied Research for Eastern and Southern Africa (FAMESA) experience (Matata *et al.*, 2001) that having 80 to 120 respondent are adequate for most socio-economic studies in sub-Saharan Africa.

### **3.3 Data Analysis**

Data were coded and analyzed using Statistical Package for Social Science (SPSS) program Version 11.5. This was employed for both descriptive and quantitative analysis of data based on the objectives and hypothesis to be tested. Descriptive employed mean, percentage and cross tabulation whereas marketing and gross margin were used as quantitative method. Multiple response analysis was employed to analyze questions with multiple answers (quality attributes desired by consumers).

Gross margin was employed in order to establish relative profitability of beef among stakeholder in beef marketing chain. This was done by evaluating costs and prices at different levels of the marketing chain (wholesalers and retailers). The analysis concentrates on the efficiency of quality beef marketing in Dar es Salaam and Arusha. The major hypothesis is that quality beef marketing in the study area is efficient. The efficiency is measured in terms of equality of prices among different categories of consumer and normal trade margins. Profit margin was used to determine the efficient measure and performance in marketing quality beef. Gross Margin was calculated by using the existing prices and costs.

$$GM=TR-TVC \text{ ----- (ii)}$$

Where;

GM =the gross margin, TR = total revenue and TVC = total variable cost

Marketing efficiency issue regarding the effect of product quality on buyer price discrimination as reflected in sellers profit variance was analyzed. Comparison in profit between sellers of quality and normal beef was made. Strategic intervention in improving firm's competitive position in the market were analyzed by describing elements of marketing mix particularly product, price, promotions and personnel and how useful they are in improving quality beef market opportunities.

### **3.4 Limitations of the study**

Some respondent were reluctant to give information and agents poorly kept the marketing records. Most hotels in Dar es Salaam city center (Movenpick, New Africa, and Kempinsky hotels) were not cooperative. Managers in those hotels said that, "hotel industry to them is a business so it's difficult to disclose information for the sake of their business". Thus hotels surveyed were those outside Dar es Salaam city center and most from Kinondoni municipality.

Secondly some households do not keep records especially those related to costs they incur. Costs associated with marketing of quality beef (electricity, rent, transport costs and advertisement costs) was difficult to get in most of areas visited (especially in Dar es Salaam) since the owner of the business (who were not around in their respective businesses) foots the bills.

In Arusha the survey was interrupted by the outbreak of Rift Valley Fever (RVF) in the country in December 2006 viral disease that attack cattle, goat and pigs and killed some people in Arusha, Dodoma and other regions. This resulted to limit the survey in Arusha to 48 consumers against the targeted 80 households, 13 butcheries, three supermarket and two processors to avoid distortion of information needed from various beef dealers/ stakeholders. The key players in beef marketing associated the survey with the disease and believed that certification was the only attribute of quality beef. Despite those limitations the results of the study are still valid with the defined limitations.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 Overview

This chapter presents the findings of the study based on specific objectives. It includes respondent characteristics, quality beef attributes desired by consumers, existing market opportunities in beef marketing system and examination of costs and returns for beef marketing has beef considered to determine marketing margin, gross margin and efficiency index. Strategic marketing decisions have been analyzed so as to propose strategies for improving market share for quality beef in the marketing system.

#### 4.2 Respondent's socio- economic characteristics in Dar es Salaam

The characteristics of a given households have important socio and economic implication to the accessibility and availability of food within households. The composition of a household usually influences the decision on consumption. This section describes the characteristics of sampled households based on marital status, education level of respondent and household size in relation to beef consumption within household, hotels and restaurant.

##### 4.2.1 Age of the respondent

Mean age of key actors in beef marketing chain ranged between 29 and 42 years. The study revealed that there was much involvement of young and middle age groups in the study area. For the case of consumers (Household and hotels) mean age were 38 and 42 respectively. Marketers particularly butcheries and supermarket mean age were 33.5 years



and 29.8 (Table 3). This implies that majority of respondents in the survey area were mature people within the active working age group and so can take responsibilities.

#### **4.2.2 Gender of respondent**

Gender of respondent has an economic implication in an economy. The distribution of respondents by gender is indicated in Table 3. Results show no significant difference in gender participation among household beef consumer. On marketers side particularly butchers male traders accounted for 100%. This may be due the fact that, beef trading involve manual cutting of bones by using axes hence males are capable especially in Conventional beef marketing while in shoprite, both male and female accounted for 50%.

#### **4.2.3 Marital status of respondent**

Marital status was categorized as married, single, divorced and widowed (Table 3). More than two third of the respondents were married. Married status may induce someone to work hard due to family responsibilities.

#### **4.2.5 Household size**

The household composition considered in the study area were the residential groups whose members live together in close contact by sharing resources held in common, such as accommodation and foodstuffs. Mean household size was six people among household consumers in Dar es Salaam (Table 3) while it was five individual in Arusha. This might be influence by the African culture that, most families are extended. Tanzanian household budget survey of 2000/01 indicated that average household size of Tanzania mainland is five people. It is revealed from the study that, surveyed area has relatively high household size. However, it is expected that average household size decreases with the level of development although slowly and in most cases better household (higher income earner) tend to be smaller (NBS, 2002).

**Table 3: Respondents' characteristics in Dar es Salaam**

Category	Household Consumers n=102	Butcheries n=17	Hotels n=7	Supermarket n=4
Age in years				
• Mean	38.00	33.5	42.0	29.8
• Minimum	17.00	25.0	28.0	25.0
• Maximum	61.00	40.0	60.0	33.0
Gender (%)				
• Male	46.1	100.0	100.0	50.0
• Female	53.9	-	-	50.0
Education (%)				
• Primary	4.9	64.7	14.3	-
• Secondary	54.9	35.3	57.1	75.0
• University	40.2	-	28.6	25.0
Marital status (%)				
• Single	28.4	11.8	57.1	25.0
• Married	66.7	88.2	42.9	75.0
• Divorced	2.0	-	-	-
• Widowed	2.9	-	-	-
Occupation (%)				
• Employed	54.9	47.1	100.0	100.0
• Business/ self employed	30.4	52.9	-	-
• Student	11.8	-	-	-
• Housewife	2.9	-	-	-
Household size				
• Mean	6.0	-	-	-
• Minimum	1.0	-	-	-
• Maximum	13.0	-	-	-

#### 4.2.3 Educational level of respondent

In both theoretical and practical situation, education level plays a big role in ensuring household access to basic needs such as food, shelter and clothing. Skills and education increases working efficiency resulting more into income and food security. Furthermore education is important to manage the business as well as in decision marking. Result (Table 3) indicates high level of literacy almost in all categories of respondents (beef marketers and consumers) in the study areas.

Majority of beef dealers (consumers and marketers) belonged into different education levels. The dominant level of education for household consumers was that of secondary category. An interesting observation was that, all supermarket respondents have attained secondary level of education and above. This is because operations in the supermarket require competence in business management as well as language especially English to serve different customers entering supermarket. This implies that education was perceived important by respondents in the study areas as suggested by the large proportion who at least have attained secondary education.

### **4.3 Respondent's socio- economic characteristics in Arusha**

#### **4.3.1 Age of the respondent**

A minimum age of respondent in Arusha was found to be 23 while maximum age was 65 years. Mean age ranged from 31 to 37 years for supermarket and household consumers respectively. Consumers (Household and hotels) mean age was 37 and 35.5 respectively (Table 4). This implies that majority of respondents in the survey area were mature people within the active working age group as observed in Dar es Salaam hence can make decisions and take responsibilities.

#### **4.3.2 Gender of respondent**

Gender of respondent has an economic implication in an economy. Table 4 indicates the distribution of respondents by gender. More than two third of marketers particularly butcher were male respondent this may be attribute by the nature of the work to be performed are difficult for females to engage in. The same observation was encountered in Dar es Salaam where no females were involved in butchery business.

### **4.3.3 Education level of respondents**

Education is one of the long term strategies that may be used to improve beef production and marketing. In this study, specifically in Arusha region majority have attained secondary level of education. No respondent with primary level of education in hotels and supermarket. This may be attributed by the fact that, Arusha is a tourist region so hotels and supermarket receive customers from different places and hence the need to get service from educated people. This implies that people are knowledgeable thus can adopt and implement new innovations easily.

### **4.3.4 Marital status**

Marital status comprised both formal and informal unions. It was categorized as married, single, divorced and widowed. Table 4 presents the distribution of respondents by marital status in Arusha region. More than two third of the respondents were married. This suggest that due to increased family size , married people venture into business to earn income for relieving financial problems facing their families.

Table 4: Characteristics of the respondent in Arusha

Category	Household Consumers; n=48	Butcheries N=13	Hotels n=2	Supermarket n=3	Processors n=2
Age ( years)					
• Mean	37.0	37.9	35.5	31.0	28.5
• Minimum	23.0	27.0	35.0	25.0	25.0
• Maximum	55.0	65.0	38.0	40.0	32.0
Gender					
• Male	23.0	100.0	100.0	33.3	100.0
• Female	25.0	-	-	66.7	-
Education (%)					
• Primary	29.2	61.5	-	-	-
• Secondary	60.4	38.5	50.0	100.0	100.0
• University	10.4		50.0	-	-
Marital status (%)					
• Single	22.9	15.4		33.3	-
• Married	72.9	84.6	100.0	66.7	100.0
• Divorced	2.1	-	-	-	-
• Widowed	2.1	-	-	-	-
Occupation (%)					
• Employed	66.7	53.8	100.0	66.7	100.0
• Business/ self employed	29.2	46.2	-	33.3	-
• Student	2.1	-	-	-	-
• Housewife	2.1	-	-	-	-
Household size					
• Mean	5.0	-	-	-	-
• Minimum	1.0	-	-	-	-
• Maximum	12.0	-	-	-	-

#### 4.3 Type of beef consumed in Dar es Salaam and Arusha

Table 5 summarizes the percentage of respondents consuming quality and conventional beef within the cities. Arusha has observed to have highest number of quality beef consumers as compared to Dar es Salaam. However the total percentage of quality beef consumers is low (21.3%) and majority consume both quality and conventional beef.



Table 5: Type of beef consumed by respondent

Type of beef consumed by respondent	Dar es Salaam %	Arusha %	Total %
Quality beef	15.7	33.4	21.3
Conventional	21.6	20.8	21.3
Both quality and conventional	62.7	45.8	57.4
Total	100.0	100.0	100.0

#### 4.4 Quality beef attributes desired by consumers

Respondents were interviewed on what was the most important quality attributes desired. Among attributes indicated were freshness, tenderness, safety and nutritional composition. Multiple responses analysis was used and results revealed that most household consumers in Dar es Salaam consider freshness of the product as the topmost quality attributes desired (31.4%). Next to freshness was tenderness and nutritional composition (27.5) of the product (Table 6). In Arusha, tenderness was highly considered. Freshness occupied the second position. This implies that people are aware of what is happening in beef industry (Table 6).

**Table 6: customer's preferences on beef quality attributes**

Category label	Dar es Salaam ( % of responses)	Arusha (% of responses)
Tenderness	27.5	61.5
Freshness	31.4	28.1
Nutritional composition	27.5	3.1
Safety	13.6	4.2
Tenderness and nutritional composition	-	3.1
Total responses	100.0	100.0

The results in Dar es Salaam (Table 6) are similar to a survey done in Australia for

assessment of fresh beef quality by Australian consumers at the point of purchase. The survey indicated that, freshness perceived as the most helpful indicator of quality in shops, followed by the remaining intrinsic cues (leanness, colour, fat/marbling) plus presentation (second rank); these, in turn, were seen as significantly more helpful than the extrinsic cues place of purchase, price, quality assurance labels, country of origin and packaging (third rank). Feed and brand were seen as least useful (fourth and fifth ranks). Perceived freshness was significantly more helpful than all other characteristics (ANZMAC, 2005).

The findings in Arusha (Table 6) are similar to that of Hoffman *et al.* (2000) and Miller *et al.* (2001). They reported that beef tenderness has been repeatedly reported as the most important quality attribute of meat. The CBEF (2006), called tenderness the one attribute that consumers most associate with eating quality. Tenderness of meat has been recognized to be the single most important factor in consumer acceptance (Collins, 1999), as this attribute is often the cause of consumer complaints.

Recent research has shown that consumers are able to distinguish differences in tenderness of beef loin steaks that have been classified based on Warner-Bratzler shear (WBS) force, a widely used device for measuring the tenderness of cooked meat (Miller *et al.*, 2001; Boleman *et al.*, 1997). These studies report that consumers are willing to pay premiums for these tender steaks. For fresh meats, however, flavor and tenderness are experience attributes, and consumers have to rely on other cues to make inferences about how the product will perform (Ace-brón and Dopico, 2000).

Studies differ on the assessment of the accuracy of those inferences. However, Collins (1999) reported that, safety was the most important attributes preferred by consumers. Consumer preferences and willingness to pay a premium for safe beef is evidenced by the



tendency for wealthy consumers in major cities to purchase beef from State stores and large supermarkets. Beef products sold in these retail outlets carry labels indicating that they have been processed under government supervision and inspected appropriately. The premiums paid for these products reflects the desire of these consumers for safe beef rather than a demand for any intrinsic identifiable physical or sensory attributes of the product such as tenderness or taste (Long worth *et al.*, 2003).

In Dar es Salaam and Arusha consumer willingness to pay for safer beef as an important attribute for quality beef were linked to those who purchase beef from Shoprite, Arusha Meat Company and shoppers Plaza. People in the two cities are high income earners and also are tourist centers thus high demand for safer products.

#### **4.4.1 Source from where beef was purchased in Dar es Salaam**

Consumers identified different sources of beef supply they consumed (Table 7). More than 50 % of household consumers purchase beef from butchers. Supermarket occupied second position accounting for 28.4 % of all household consumers. Other consumers indicated the potential of both sources since they combined for beef purchase (supermarket and butchers).

**Table 7: Source from where beef was purchased in Dare s salaam**

Source	Percent
Supermarket/Shoprite	28.4
Butchers	61.8
Supermarket and butcher	9.8
Total	100.0

As observed in Dar es Salaam that butchers were the main source of beef consumed, majority in Arusha do the same. This accounted for 60.4 % of the total responses. Others

purchase from more than one source (Table 8). An informal discussion made with respondents concerning the combination of sources as to where beef is purchased; the response was that butchers do not sell sausages it was necessary for them to look for the product in other source.

**Table 8: Arusha beef sources by consumers**

Category label	Count	% of responses
Supermarket/Shoprite	8	8.33
Arusha meat company	13	13.54
Butchers	58	60.42
Supermarket and butcher	15	15.63
Butcher and Arusha meat company	2	2.08
Total responses	96	100.00

#### 4.4.2 Reason for purchasing beef from a supermarket and Butcher

Sources of beef purchase were various. Household were influenced by different reasons upon their decision to purchase beef from a particular source specifically supermarket, butcher on any other source. Household consumers indicated that convenience, regularity of supply and hygiene and cleanliness were the topmost reason that influenced decision on where to purchase a product in Dar es Salaam (Table 9).

**Table 9: Reasons for purchasing beef in supermarket, butcher or both in Dar es Salaam and Arusha**

Category label	Dar es Salaam % of responses	Arusha % of responses
Convenience	31.4	10.4
Availability of beef when needed	13.7	8.3
Regularity of supply	29.4	6.3
Hygiene and cleanliness	21.1	47.9
Good price	4.4	27.1
Total responses	100.0	100.0

Arusha region have shown that, hygiene and cleanliness have significant influence on decision making as to why to purchase beef from a certain source. Also respondents were sensitive to price hence influences their purchasing pattern. Convenience occupied third position (Table 9) while in Dar es Salaam it was considered by majority in decision marking.

#### 4.4.3 Constraint to consume quality beef

It was observed that, the two cities (Dar es Salaam and Arusha) were constrained by various aspects as to why they didn't consume quality cuts. High price was found to be the main reason in both cities (Table 10). Unavailability was reported as second constraint in Dar es Salaam while in Arusha lack of awareness was also significance.

**Table 10: Constraints to consume quality beef in Dar es Salaam and Arusha**

constraints	Dar es Salaam (%)	Arusha (%)
High prices	51.5	69
Not available	35.8	6.3
not aware	12.3	16.7
No constraint	.5	8.3
Total	100.0	100.0

URT (2006) reported that processing, marketing and consumption of quality meat and meat products is limited by inconsistent supply of quality animals and inadequate market information, inadequate research and training in meat technology, low awareness of consumers on quality meat and lack of capital for investment in meat processing plants.

## 4.5 Existing and potential market opportunities for quality beef

### 4.5.1 Customers' preferred source of beef purchases

#### 4.5.1.1 Main customer in butchers

Butcherries reported that, their main customers were local customers (individuals and households) and hotels accounted for 58.8%. About 29.4 % of butchers' customers were mainly households. In Arusha household and individual customers were main customers in butchers accounted for 84.6 (Table 11). This reflects the existing opportunities for marketing quality beef since majority of customers were found to be households followed by tourist and hotels. This creates different marketing channels in beef marketing system.

- i. Beef marketing to consumer's through butchers
- ii. Beef marketing to consumers through Shoprite supermarkets

**Table 11: Main customer in butchers**

Main customers	Dar es Salaam % of responses	Arusha % of responses
Household	29.4	84.6
Household and hotels	58.8	7.7
Hotels	11.8	7.7
Total responses	100.0	100.0

#### 4.5.1.2 Main customers in supermarkets

Majority of customer (57.1 %) in shoprite supermarket were households (local customers). This indicates potential for marketing quality beef which may be improved through market information and product promotion.

Table 12: Main customers in supermarket

Category label	Pct of Responses
Tourist hotels	28.6
Households	57.1
Tourist, household and hotels	14.3
Total responses	100.0

#### 4.5.2 Hotels preference on beef cuts

Hotels purchasing managers and executive chefs are the primary decision maker for hotel beef purchases. Purchase manager are concerned with price and reliability of supply. Executive chefs are primarily concerned with product preparation, quality and customer satisfaction (Kim *et al.*, 1996). Most hotels sell quality beef and prefer fillet and quality cuts. The most important quality attribute preferred by hotels were tenderloin steak (85.7 %) and lean meat.

**Table 13: Hotels most important quality attribute considered to judge quality beef**

Attribute desired	Percentage
Lean meat	14.3
Tenderloin steak	85.7
Total	100.0

In hotels and restaurant main customer were both tourists and local customers (57.1%). Hotels that reported tourist only as their main customers were 28.6 %, hotels and restaurant who responded local customers only as their main customers were about 14.3 % (Table 14).

**Table 14: Main customers in hotels**

Category label	Pct of Responses
Tourist	28.6
Tanzanians/local customers	14.3

Tourist and local customers	57.1
Total responses	100.0

The size of prime cuts preferred was 250, 350 and 500 grams. Restaurant chefs reported that, preferred weight was due to customer's wish. Demand for beef in hotels varied with the type of customers. Tourists were reported to consume more beef while local customers preferred more chicken. Hotels faced technological challenges from supplier. Chefs reported that suppliers fail to observe the standard weight required. Instead of supplying desired weight they sometime supplied 270 and 325 instead of 250 and 350gram respectively leading to problem in pricing the product. For the case of sausages, happy sausage products were most preferred since the products were well packed. In hotels sausages were indirectly priced because it was accounted in bed and breakfast.

As observed in Arusha that, big hotels; Sopa and Impala in Arusha use imported beef product from farmers' choice and Alfa fine food Kenyan companies. This was evidenced by delivery cars branded farmers choice and Alfa fine foods unloading beef products in the respective hotels. It was difficult to say why they preferred those products because managers were reluctant to be interviewed. This was supported by Rutashobya (2003) who reported that competition come from imported meat- and mainly from Kenya "Farmer Choice" which has penetrated Tanzanian market with her processed food stuff including meat.

#### **4.5.3 Quality beef distribution channels**

The role of marketing agent is to facilitate market transaction of the product between supplier and consumers. Beef marketing channels were studied by interviewing some of intermediaries in the chain who link producers and consumers, these included processors and retailers (butcheries and supermarket). Consumers were also met to find out whether quality had any influence in purchasing the product (Figure 2).

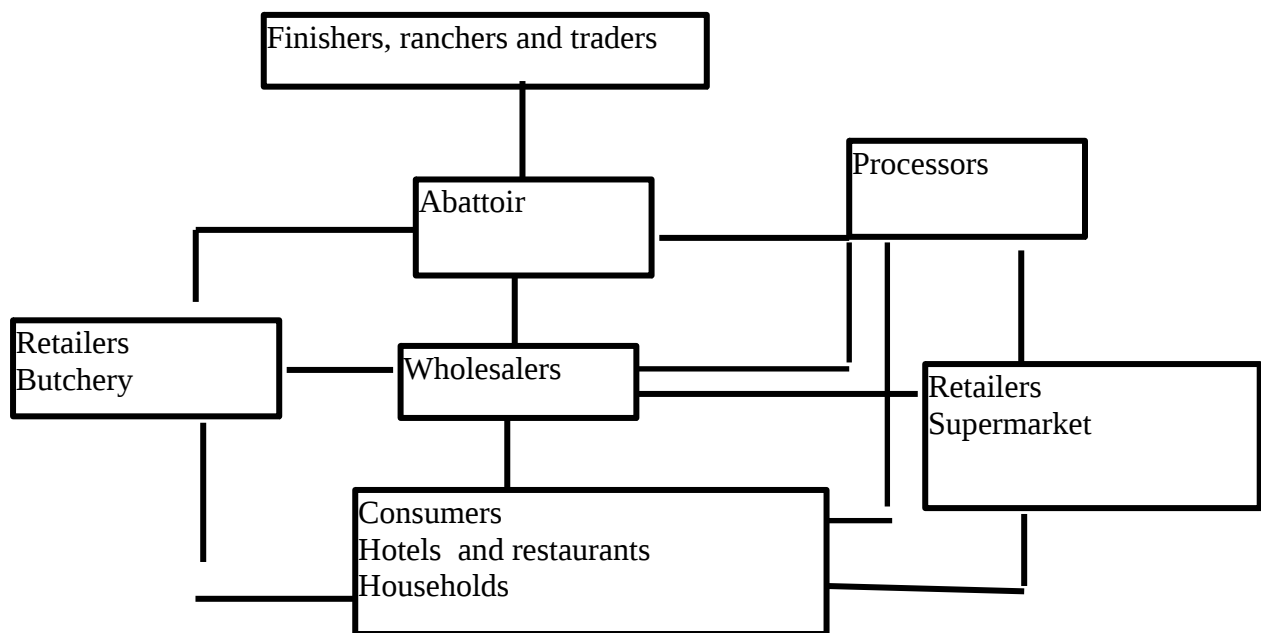
- i. Wholesalers: wholesalers are traders who buy cattle from different sources such as ranches, auctions and sell beef to retailers as supermarkets and butchers at whole sale price.
- ii. Retailers: The marketing system is characterized by large number of traders dealing with beef marketing to final consumers. This group involved supermarket and butchers. The dominant beef retailer in Tanzania are butchers where majority sell hanged beef that is chopped from different parts to make a proportion of what is require to be bought. Retailers purchase beef from wholesalers and/ or buy cattle from auction, slaughter and sell the product at retail price. Butchery owners control the meat market. In fact, they are the most powerful group in the livestock arketing chain followed by Middlemen, who act as the interface between livestock traders and butchery owners. The two groups control the price of livestock at major domestic markets and by extension the volume of the national red meat consumption.

According to Aklilu *et al.* (2002) butcheries in Nairobi are categorized into four major classes based on the income class of the clientele. High-class butcheries serve high-income estates. They are distinguishable from the other classes in that they sell meat in special cuts. These butcheries mainly obtain carcasses from slaughterhouses. High-class butcheries serve a small portion of the red meat market, mainly high-class hotels and restaurants in the city, and wealthy individuals. Middle class butcheries serve middle-income estates. A few of these butcheries sell meat in special cuts. The low class butcheries serve the lower income estate and the extra low class of butcheries specialized in offal and commercial grade of beef sell uninspected carcasses and most of butcheries are unlicensed.

The same situation though not clearly defined, is observed in Tanzania where very few high class butchers fall under this category for example Shoprite, Arusha meat

Company, Happy sausage and few private butchers. High-class butcheries obtain beef from the abattoir and cattle from ranches and serve a small portion of the red meat market, mainly high-class hotels and restaurants and wealthy individuals in the two cities. Majority of butchers in Tanzania fall under lower class category where beef is hanged and chopped to serve customers.

- iii. Processors: processors tend to buy beef at whole sale and or cattle from ranches slaughter and made into various products. This group improves or transforms the original form of a product by adding more value to the product. For example carcass transformed or processed into sausages.



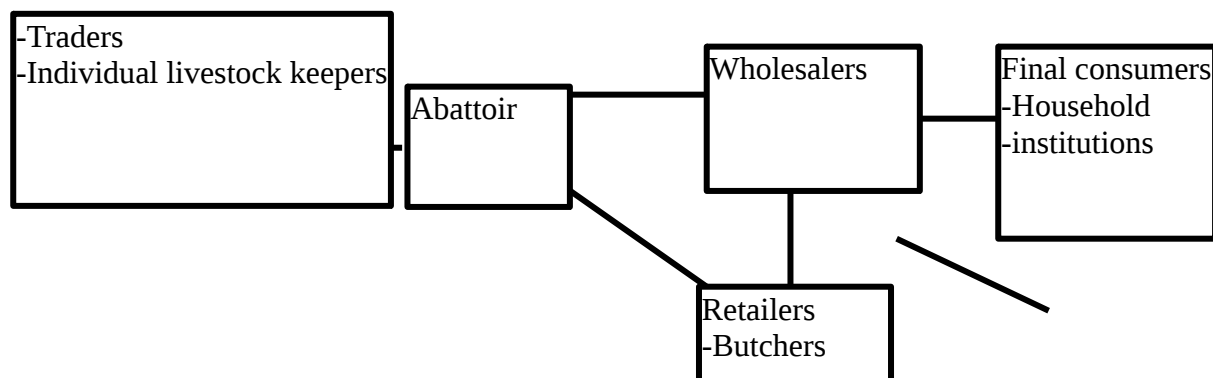
**Figure 2: Quality beef distribution channels**

#### 4.5.4 Conventional beef distribution channels

Butchery business dominated conventional beef business. Their main source of cattle slaughtered were auction in both cities Dar es Salaam and Arusha. In Arusha butchery traders depended mostly on Locky auction, Ngaramtoni while in Dar es Salaam Pugu



market were the main source of cattle supply. Cattle were slaughtered in abattoirs then sold warm in butchers. The marketing chain for conventional beef is shown in Fig. 3.



**Figure 3: Conventional beef marketing channels**

#### 4.5.5 Product prices

Different actors received different prices in a marketing chain. Quality cattle were sold at an average price of 1000 Tsh per kilogram in live weight (farm-gate price) in Arusha that is 2000 Tshs/ kg carcass weight. After slaughter the carcass was sold at whole sale price of 2600 to supermarket and butchers hence wholesaler marketing margin was 600 Tshs. Supermarket preferred hindquarters at 2600 Tshs per kilogram. Beef fillet was purchased at an average price of 5000 per kilogram and sold at 8500 making a gross margin of 3500. Prices of different local beef products averaged 6000 per kilogram leading to supermarket marketing margin of 3400 Tshs. Generally price shows increasing trend throughout. In 2003 local T-bone steak in supermarket was sold at 4200 while imported from Kenya and South Africa was sold 8500 and 12000 Tshs respectively (Rutashobya, 2003). Currently local T-bone is sold at 6500 while imported (Kenya) was sold at 17500 Tshs (Table 15).

Table 15: Price list for selected products in Shoprite, 2007

Hindquarter products	Local TShs/kg	Imported (Kenya) TShs/kg
Fillet steak	8500	18000
Rump steak	7200	-
Tenderized steak	6500	-
frying steak	6500	-
Goulash	6000	-
Minced beef	5500	-
Lean meat	5500	-
Standard minced	4600	-
High noon burger with spices	5000	-
stewing steak	6500	-
High noon burger with spices	5000	-
Porterhouse	7200.00	-
Achibone roast	6000.00	-
silver side roast	6000.00	-
Holland steak	6500.00	-
T-bone steak	6500.00	17500
Club steak	6000.00	-

In the study area, difference between quality beef marketing and conventional beef existed in various aspects. The difference are based on sources on beef supplied, capital cost to run the business and other handling practices (Table 16). Fafchamps and Madhin (2006) reported that, differences in varieties and quality are associated with price differences.

Table 16: Differences between quality beef and conventional

	<b>Quality beef</b>	<b>Conventional beef</b>
i.	Source of cattle is mainly from ranches, feedlots and finishers and few from auction brought from Shinyanga, Tabora and Manyara	Mostly cattle are sourced from local livestock keepers through auctions
ii.	Quality beef marketing is concentrated in urban center where processing, storage facilities, power (electricity) is available for preservation. It is mainly targeted to certain group ( high and middle income people) since it is sold at high price	It is spread throughout the country
iii.	It requires big capital to start and operate the business. Capital is required for facilities like cold rooms and or refrigerators for chilling process	It require less capital compared to high quality beef marketing
iv.	high skill in needed in marketing quality beef that is how to make cuts, setting prices, packaging , advertisement, and display in shelves and other strategies to convince customers to buy the product.	It require less skills to operate the business
v.	It is chilled for two to three days before marketed hence tender beef	It is sold warm hence not tender
vi.	Most preferred are beef fillet, T-bone steak, sirloin and rump steak and lamb loins.	Different parts are chopped to make a proportion for sale.

## 4.6 Efficiency of beef marketing systems

Marketing efficiency in general refers to the ratio of output relative to inputs. An efficient marketing system has a positive impact to an economic development of a country.

### 4.6.1 Marketing margin

Fafchamps and Madhin (2006) defined marketing margin as the difference between the value of sales and purchases. Marketing margins of prices at different nodes of marketing chain were calculated in both cities based on wholesale and retail market levels. The difference between the buying price and selling price was considered as cost of marketing (what is incurred in getting the product from the producer to the consumer in the desired form).

#### 4.6.1.1 Marketing margin for beef marketers in Arusha

Costs and returns for processors (including shoprite) were examined. Processors observed to earn more returns than those selling conventional beef since conventional beef was observed not to have long marketing chain as quality beef and average retail price for normal beef in butchers was 2600 Tshs per kilogram while average price for quality cuts averaged 4000 Tsh /kg in Arusha meat company and 6000 in shoprite supermarket (Table 17). This type of price discrimination and market segmentation noted during the survey revealed the presence of price premiums associated with quality, type of meat and or cut and market location.

**Table 17: Marketing margin for quality beef marketers in Arusha (Tshs/ kg)**

Marketing node	Average buying price Tshs/kg	Average selling price Tshs/ kg	Marketing margin
wholesale	2000	2600	600

Wholesale price to (Arusha Meat Company)	2000	4000	2000
Wholesale price to (Shoprite)	2600	6000	3400

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#### 4.6.1.2 Marketing margin for conventional beef marketers in Arusha

Conventional beef was mainly sold by traders at retail level. This group of traders depended on auctions to outsource cattle for slaughter and sell in their own butchers. The buying price per kg was estimated since no weighing bridges were used in auctions. The reason for not using weighing bridges was reported that cattle traders think that price per kg will be low if animals will be weighted. These traders judged quality of beef based on grade of cattle. They selected grade two cattle from auction and sell carcass to final consumers. Average live weight was 900-1000 Tshs/ kg reflecting carcass price of 1800 -2000 Tshs /kg.

**Table 18: Marketing margin for conventional beef marketers in Arusha**

Marketing node	Average buying price/kg	Average selling price/ kg	Marketing margin
Retail level (Butcheries)	1800-2000	2600	600-800

In Arusha, cattle averaged 280 kg was examined with 50 % dressed weight (140 kg carcass weight). Table 19 shows the costs incurred by a trade and gross margin was 63 350 Tshs, hence a profit of 452.50 Tshs /kg.

The result for both marketers of quality and conventional beef shows that, marketing margin was high at each stage of marketing chain. Riley and Weber (1983) reported that, a common perception among officials in developing countries is that marketing agents charge unjustifiably high prices and receive unduly high profits, to the detriment of consumers. Government officials rarely appreciate the functions that marketing agents perform, including assembly of geographically dispersed foodstuffs and livestock products,



transportation from production zones to centers of demand, storage, and product transformation.

**Table 19: Marketing costs and margins for normal beef by butcheries in Arusha**

Parameter	Parameter value (Tsh)
Average price of cattle to marketers in average live weight/ kg 280 kg	280,000
Average buying price / kg of live weight	1000
Transport cost of cattle to the abattoir /cattle	3000
Market dues at the auctions/ cattle	3000
Slaughter fee at the abattoir/cattle	5250
Convention factor	0.5
Quantity sold in kilogram	140
Transport cost of beef from the abattoir to the selling point	3000
Labor /day	3000
Packaging materials per unit 10 Tshs * 140 kilogram	1400
Rent per day	2000
Average retail price in kilogram	2600
<i>Total costs</i>	300650
Total revenue from sales of 140 kg of beef	364000
Gross revenue	63350
Gross margin per kilogram	452.50

The marketing margins, which are often high in developing countries, are perceived to reflect windfall profits rather than normal returns, high transactions costs, and real transport, handling, storage and interest costs. Empirical evidence of livestock marketing costs in West Africa (Holtzman *et al.*, 1980) and in East Africa (Reusse, 1982; Evangelou, 1984) generally demonstrate that butcheries and trader returns are not excessive, given high real marketing costs, significant risks, and the high opportunity cost of capital.

#### **4.6.1.3 Marketing margin for beef marketers in Dar es Salaam**

Shoprites were observed to charge the same price in both cities and suppliers were paid the same amount 2600 per kilogram. In Dar es Salaam most butcher shops surveyed were those around Msasani, Kariakoo and Kimara. Price of beef at Msasani was observed as high as

3000 Tsh per kilogram of mixed beef and 3500 for beef steak while in Kimara and Kariakoo the same product were sold at a price between 2600 and 3000 respectively for the same product.

**Table 20: Marketing margin for beef marketers Dar es Salaam**

Marketing node	Buying price/kg	Average selling price/ kg	Marketing margin
wholesale	2000-2200	2600-2800	600
Retail level (Butcher)	2200	2800-3300	600-1100
Retail level shoprite	2600	6000	3400

The result were similar to that of Ashimogo *et al.* (1998) who reported existence of price variations between different areas in the country and between different economic zones within the city of Dar es salaam. Prices were observed to be slightly higher in wealthy areas than in poor areas varying between Tsh 800 per kilogram for mixed meat in Vingunguti and Tshs 1200 per kilogram in other areas for the same type of meat.

#### **4.6.2 Gross margin**

The study attempted to ascertain the level of market efficiency by evaluating costs and prices at different levels of the market chain, including wholesale and retail level. At every stage there were costs incurred in beef marketing. Gross margin were calculated and used in assessing relative profitability of the product at the different levels of the market. This implies that, with cost based pricing method; prices are determined by the costs incurred in marketing resulting into variation in gross margin (Table 21). Price for live weight cattle in Dar es Salaam was between 1100 to 1200 Tshs/kg. Convention factor was 0.5 (that is one kg of live weight resulted into a half kilogram of carcass). As indicated in Table 21 carcass prices averaged 2200 Tsh/kg (buying price). Retail selling price ranged between 2800 and 3500 Tshs/kg (3300).

**Table 21: Marketing costs and margin for normal beef by butchereries in Dar es Salaam**

Parameter	Parameter value (Tsh)
Average price of cattle at Pugu auction in live weight/ 280 kg	308,000.00
Average buying price/ kg live weight	1100.00
Market dues at the auctions/ cattle (Tsh)	3000.00
Slaughter fee at the abattoir/cattle Tsh)	3,500.00
Transport cost of beef from the abattoir to selling point (Tsh)	3,000.00
Convention factor	0.50
Packaging materials per @ 10 Tshs *140	1500.00
Wage/day	4000.00
Retailers average selling price/ kg	3000.00
<i>Total costs</i>	<i>347000.00</i>
Retailers Gross revenue (140 *2800)	450000.00
Retailers gross profit	103000.00
Retailers gross profit/kg	735.70

Gross margin in Dar es Salaam at retail node particularly butchery was calculated by looking the difference between total revenue (27 435 843 Tshs) and total variable cost (22 924 868 Tshs). The costs included purchase cost, transport cost, wage, packaging material, rent and electricity. Other costs involved market dues and slaughter fee.

$$GM = TR - TVC \text{-----} (ii)$$

Where;

GR= Gross margin (Tshs), TR= Total revenue (Tshs), TVC= Total variable cost (Tshs)

$$GM = 27\,435\,843 - 22\,924\,868$$

$$GM = 4\,510\,975 \text{ (Tshs)}$$

Table 22 summarizes the average quantity handled by butchers per week with costs incurred to determine average profit for Dar es Salaam butcheries. Due to high transaction costs the average profit per kg sold was observed to be 515.32 Tshs.

**Table 22: Average costs and profit for normal beef by butcheries in Dar es Salaam**

Parameter	Parameter value (Tsh)
Average quantity handled per week	583 kg
Average wholesale purchase price	2600
Average total purchase costs (583* 2600)	1 515 800
Average packaging costs @ 10 Tshs (10* 583)	5830
Average transportation costs	30187
Wage / week	35000
Rent/ week	24652
Average electricity cost per week	12000
<i>Total costs</i>	<i>1 623 469</i>
Retailers average selling price per kg	3300
Retailers Gross revenue (583 *3300)	1 923 900
Retailers gross profit /week	300431
Retailers gross profit / kg sold	515.32

#### 4.6.3 The fifth quarter

The fifth quarter 30% of offal including head and hoof were sold separately constituting more income to retailers and wholesalers of both conventional and quality beef. Head was sold at a price between 10,000 and 14000 while hocks was sold at a price between 4500 and 6000 Tshs. Offals were sold to soup processors at a whole sale price ranging between 700 to 800 Tshs and at retail level it was sold at 1400 to 1500 Tshs/ kg in Dare s salaam.

#### 4.6.4 Profit margin analysis for quality beef marketers (Wholesalers) in Dar es Salaam

As observed different location had impact on prices of beef, conventional beef at Msasani were sold at high price compare to Kimara area. Although this group was seen not to sell

quality cuts but they emphasized that their carcass was of grade two cattle which attracted many consumers. In shoprites, the butcheries have been trained how to handle carcasses and produce various cuts. Gross margin for shoprite was calculated by considering the transaction costs incurred to market 150 (minimum quantity per week) kilogram of hindquarter supplied per consignment. The assumption was that, a total of 150 kg was made into various quality beef cut products and marketed at an average price of 6000 (Table 23). A big difference was observed between prices of local fillet steak 8500 Tshs/kg while imported one was sold at 18000 Tshs per kilogram.

**Table 23: Profit margin analysis for Shoprite**

Parameter	Price	Total value
1. Average quantity handled per consignment 150 kg		
2. Shoprite wholesale purchase price from supplies	2600	390 000
3. packaging materials price per unit	820	123000
4. Labels per unit	187	28050
5. Labour/week		30000
6. <i>Total identified cost</i>		<i>151050</i>
7. <i>Total costs per 150 kg</i>	3607	<i>571050</i>
8. Shoprite average selling price /kg	6000	
9. Shoprite total revenue		900000
10. Shoprite gross margin per 150 kilogram		328950
11. Gross margin per kilogram		2193

#### 4.6.5 Beef marketing efficiency in Dar es Salaam and Arusha

Operational efficiency for shoprite was also determined by looking at the total operational cost incurred by shoprite to total revenue obtained per consignment. Total cost (Table 23) was 571 050 Tshs while total revenue were 900 000 Tshs.

$$\text{Operational efficiency} = \frac{571050}{900000} = 0.63$$

Efficiency index of 0.63 indicates that shoprite operate in an efficient way because the total operating costs is less than the total revenue obtained. The index apply to both cities since all shoprites in the country pay the same price to suppliers and charge the same price from customers.

Table 22 indicates that, average cost (1 623 469 Tshs) incurred to market average quantity sold (583 kg/ week) and average revenue (1 923 900 Tshs) obtained per week by butcheries in the marketing process in Dar es Salaam. The ratio of the costs and revenue indicates that the system is operating efficiently with an index of 0.84. An index shows that the business is operating efficiently since the total operational cost is less than Total revenues.

In Arusha total amount of beef handled per week was 877 kg. The total operational costs were 2 011 052 Tshs while total revenue were 2 446 830 Tshs. The ratio of those costs and revenues resulted to efficiency index of 0.81. This indicated that beef business was profitable in Arusha because a unit index indicate the break even point where total cost equals total revenue. For this case butchery business was viable and profitable to operate. In general beef businesses in the two cities operate efficiently.

Various studies have been done to evaluate beef pricing efficiency in the marketing system. Fausti *et al.* (1993) analyzed and examined four marketing methods for slaughter cattle for pricing efficiency. Profits per head were found to be significantly different under the various marketing methods. Greater price discrimination occurred as carcass information increased. Increased price discrimination led to greater dispersion of profit from one marketing method to another. Different marketing methods appeared to send different production signals to producers.

#### **4.6.6 Profit margin analysis for processors in Arusha (Tshs)**

It was observed that, quality cuts were sold at a price ranging between 3000Tshs /kg for minced beef, 3500 for rump steak, prime meat, and 4000 for t-bone and sirloin and beef fillet at 4500. Therefore processors gross margin were between 2000 to 3500 Tshs.

#### **4.7 Strategic marketing decision to improve firms' competitive position**

Potential market opportunities in future will depend upon the strategic marketing decisions (marketing mix). Marketing mix are controllable variables including **Product, Price, Personnel and Promotion.**

##### **4.7.1 Product**

Beef as a product, aspects such as cut size, weight, packaging method and brand influences more sales. In other words beef industry should produce beef cattle products that meet specifications of a particular market. For example, steers need to meet the requirements of a feedlot. From Sea Cliff hotel, it was found that, standard beef cuts required were 250, 350, 500grams and 1000 grams but current suppliers fail to meet these standards. They happened to supply 270, 325 instead of 250 and 350 gram respectively leading to problems in pricing customers. The same hotel complained that demand for fillet steak is high as 60 kilogram per week but during dry season they do not meet their demand.

Shoprite targeted different customers with difference income levels hence beef cuts are packed starting with 200 grams up to a kilogram. This intended to win more customers and capture more share in the market. Product appearance also has significance influence on beef marketing. The way products have been packed attracts more consumers to buy.

In shoprite farmers choice beef sausages 200g was sold at a price of 3350 Tshs while that of Tan meat 250g were sold at 2100 Tshs but more customers were attracted to buy farmers choice sausages.

#### **4.7.2 Price**

Price of a product is how much the customer is prepared to pay and how much the producer is prepared to accept. Price has to be SMART (Specific, Measurable, Achievable, Realistic and Time bound). Among the constraints to consume quality beef, high price was the main reason accounted for 51.5 % in Dar es Salaam while it was 69 % in Arusha (Table 11).

#### **4.7.3 People**

People are probably the most important of all the 'Ps' after the product. People represent the glue that binds the market together and involves the customer and those with roles to play in satisfying customer's needs and wants. In supermarket and hotels, people as an element of marketing mix is highly observed since workers serve customers accordingly. This is attained through training provided to workers on how to serve customers.

#### **4.7.4 Promotion**

Promotion is how effectively the marketer lets the customer know that the product is right for them. Promotion includes advertising, personal contact, mail, field days and other forms of publicity to attract attention to your product. Past feedback from abattoirs and feedlots can be used to promote the quality cattle. Supermarket do promote beef product especially over the weekend when most customers go for shopping. Two kilogram of sausage are cooked and given to customers to taste for free and allows customers to give comments for improving the product.



Promotion aspect was less reflected in butchers as only 7.7 % were advertising their products while 92.3 % did not promote their product. Kim *et al.* (1996) mentioned that, participation in well coordinated promotions such as trade shows and seminars would facilitate beef positioning in the sector. Furthermore beef promotion in priority markets improve customers' product knowledge, improve industry awareness, and promote profile to consumers. Canada beef bring groups of key foreign buyers to Canada to promote understanding of the Canadian industry and export companies – their people and their products.

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Overview

The general objective of the study was to evaluate relative efficiency of existing beef marketing system and explore potential market opportunities for quality beef. Specifically the study objectives were (i) to identify and describe quality beef attributes desired by consumers, (ii) to identify existing and potential market opportunities of quality beef, (iii) to examine the efficiency of beef marketing system operating in Dar es Salaam and Arusha, and (iv) to propose strategic marketing decision for the firms to improve their competitive position in the market.

#### 5.2 Main conclusions

Movement of beef and its product from point of production to point of consumption involved the use of market functionaries like middlemen, retailers, processors, consumers. The study dealt with traders including wholesalers, retailers specifically supermarkets (processors and marketers), butcheries, and ultimate consumers. These market functionaries performed various functions to get the product to the ultimate consumers. Commercialization seems to offer opportunities for future increased meat, utilization.

##### 5.2.1 Attributes desired by consumers

More respondents in the two cities have indicated tenderness, freshness and safety of the product to be the most important attributes. Furthermore consumers in Dar es Salaam were influenced by convenience, regularity of supply and nutritional composition while in

Arusha customers were sensitive to hygiene and cleanliness, and good prices.

### **5.2.2 Existing and potential market opportunities**

Households and individual customers have reported to be the potential market for beef in Tanzania this has been made due to increased population in cities as well as increase in income. As it was observed from the survey that majority of butchers sell conventional, beef establishment of modern butchers selling quality cuts will mean new business (venture) opportunities that may enhance more sale of quality cuts. The growth of tourism industry and tourist hotels increases more chances of marketing quality cuts as more tourist hotels desire quality cuts. Increased urbanization and growth of supermarkets in Tanzania particularly in cities would mean more markets for quality beef.

### **5.2.3 Efficiency of beef marketing system**

Beef marketing system in the study areas (Dar as Salaam and Arusha) reported to operate efficiently regardless of the difference in index sizes. A number of private meat processing plants are emerging. This is creating a demand for quality livestock products, thus motivating livestock producers to increase off take rate and consequently increase efficiency in the production chain.

However the channels through which livestock products are marketed are relatively more diverse and complex than in the case of live animals. Butchers appear to compete heavily on the basis of product differentiation. Depending on the income classes that they wish to sell their meat to. The butcheries can come up with appropriately defined and priced meat cuts and each butcher may charge as much as his particular market can absorb. The structure of the market has indicated that the quality beef marketing system has indicated to be not efficient in terms of market transparency. This is attributed by lack of market information and lack of capital which affects the level of trading.

#### 5.2.3.1 Gross margin

Overall beef trading was found to be profitable however extent of profit varied within market levels and across different type of beef (conventional and quality). Traders of quality beef cuts observed to obtain high gross margin as compared to others.

### **5.3 Recommendations**

#### **5.3.1 Future initiatives of quality beef**

One of the great challenges within meat production in the near future is to be able to combine the different discipline that is relevance. The knowledge of, Animal scientists, veterinarians, food scientists and legislators can be utilized to improve performance, welfare of farm animals, meat quality, and animal health status and traceability systems. Also a better understanding of consumer expectations in relation to perceived meat quality and their relation to existing and new objectives and quality control are areas that deserve further attention if production of meat shall fulfill the demand for tomorrow. Being able to identify and overcome challenges facing Tanzania in beef industry will assist in utilizing the opportunities in future.

Fritz *et al.* (2001) reported that, electronic trade seems to be convenient element in the future and numerous virtual market paces and online shops connecting several chain levels already exist for meat products. For the case of Tanzania, dissemination market information in more transparent way may improve the existing situation. Policy issues such as government support have been identified in other areas as driving forces for conventional producers to slowly change towards organic production (McEachen and Willock, 2001). This also needs to be pursued in Tanzania.

#### **5.3.2 Strategies to improve marketing of quality beef**

Several incentives can be identified for forming or participating in explosive marketing agreements or alliances. Nearly all relate to function between stages in the vertical production, processing, distribution channel overcoming problems associated with and related to pricing on averages and reducing the relationship between producers and

marketers. Pricing cattle on carcass characteristics attempt to better link prices and quality by rewarding better cattle and penalizing poorer ones. Schroeder (2002) indicated the importance of market information and linkage between actors in USA. Packers return slaughter summaries (kill sheets) to feedlots so feeders learn how their cattle performed.

This may be applied to livestock keepers in Tanzania so that market information could stimulate livestock keepers to improve quality of their cattle. Marketing agreements and alliances are also important strategies that could be applied in Tanzania because market access would be guaranteed in advance. These specify that, quality cattle will be marketed to specific market.

#### **5.3.4 Recommendations**

Based on the findings of the study, the following recommendations geared towards improving quality beef marketing activities are made.

- ❖ Majority of traders are aware of the benefit of trading quality beef but they lack capital to buy quality cattle and sell at higher prices. Credit will enhance these traders to boost their capital and increase share in the market. Credit should also be directed to livestock keepers for them to improve their cattle by proper feeds and this will increase supply of quality cattle.
- ❖ Market segmentation (based on age and income) if taken into consideration would mean to establish new business ventures. For example bilton and other beef products may be introduced as bites to primary secondary schools and other levels so that more opportunities are being created.
- ❖ Establishment of quality beef market information and news services.

- ❖ Protect existing stock routes and develop new routes in recognition of their role as an efficient livestock transport network.
- ❖ Build modern abattoir in Dar es Salaam as well as a modern meat van to control hygiene and strictness on meat inspection.
- ❖ The results of this study suggest that marketers of beef should focus upon eliciting strong positive feelings about several important attributes which consumers use to assess beef quality. In this respect, educational promotions which better inform consumers about the determinants of quality are needed.
- ❖ Quality beef depend on number of factors as age, breed, feed resources and handling procedures during slaughtering. Strategies should be directed towards improvement of the whole sector of quality beef production and hence more supply of quality beef which will lower its price and for the consumption of majority in the country and increase more government revenue.

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## APPENDICES

### Appendix 1: A questionnaire for household beef consumers

Name of enumerator: -----Date of Interview: -----

#### 1.0 Household demographic and socio-economic characteristics

c001	District	1. Ilala, 2. Kinondoni
c002	Street name	To be filled up
c003	Household number	To be filled in the evening after survey
c004	Name of respondent	Record both first and last name
c005	Gender of respondent	1.male, 2.Female
c006	Age of respondent	Years
c007	Marital status	1. Single, 2. Married, 3.Divorced, 4.widowed
c008	Education Level of respondent	1. primary education, 2. Secondary, 3. University, 4. Other (specify)
c009	Occupation	1.employed, 2.Business, 3.other (specify)
c010	Beef consumed	1. Quality beef, 2. Normal (conventional) 3. Both quality and normal
c011	Nationality	1.Tanzanian, 2.other (specify)
c012	Ethnic group	To be filled up

#### 2.0 Labour resources

c013	Number of household members permanently living in the house by age	
c014	Number of household members up to 18 years old	
c015	Number of adults (19-60 yrs years old) =	
c016	Number of adults (above 60 yrs) =	
c017	Number of adults employed /self employment	

#### 3.0 Information on quality beef consumption

c018	Do you know the attributes of quality beef? -----	1. Yes, 2. No
c019	If yes (Qn c018) what are the desirable attributes of quality beef?-----	Give possible answer in space provided
c020	What is the single most important beef quality attributes do you prefer -----	1Tenderness (flavour, juiciness, palatability, texture,) 2. Appearance



		(freshness), 3. Nutritional composition, 4.Safety from bacteria, 5.other (specify)
c021	What constraint you to consume quality beef? -----	1.High prices, 2.not available, 3. Not aware 4. Other (specify)
c022	What do you prefer? -----	1. Packed, 2. Processed, 3. Other (specify)
c023	Where do you often buy quality beef? _____	1.supermarket, 2.Restaurant, 3. Butchers, 4.Other (specify)
c024	Why do you purchase beef regularly from this particular source? (Choose the most important reason)-----	1. convenience, 2.Availability of beef when needed, 3.Regularity of supply, 4. Hygiene and cleanliness, 5. Good price, 6.Home delivery service 7. Other (specify)
c026	What quantity of beef do you consume per week? -----	kg
c027	How much do you pay per kg-----	TShs/kg
c028	What is your opinion on price you pay per unit? -----	1. Price is to high, 2.Reasonable price 3. Lower than expected, 4.other (specify)
c029	12. What is the distance (to the supermarket or meat shop) where you purchase beef? -----	Km/ minutes

#### 4.0 Information on substitutes

In addition to beef what other single most important substitute meat do you consume?

Type of meat	Chicken c030-c031	Fish c032-c033	Mutton c034-c035	Pork c036-037	Other (specify) c038- c039
Tick the most important substitute					
Price / unit					

#### 5.0 Expenditure on beef and beef products

Item	Unit of measure c040-c043	Number c044-c047	Unit Price c048-c051	Total expenditure c052-c055
Beef cuts				
Sausage				
Other (specify)				
Total expenditure on beef per week				

#### 6.0 Expenditure on substitutes during last week

Expenditure per week	Unit of measure c056-c059	Quantity bought /unit c060-c064	Unit price c065-c069	Total expenditure / Week c070- c073
Chicken				

Fish				
Mutton				
Other (specify)				

7.0 General observation

C074	In your opinion has consumption for beef increased or decreased in past two years? -----	<i>1= increased, 2= decreased 3= remained the same</i>
C075	Give reason for your answer (Qn c074) ----- -----	<i>Give possible reason</i>
C076	24. Which changes has occurred in quality beef over the last two years?-----	<i>1= better packaging, 2= price changes, 3 =Better grading, 4=other (specify)</i>

**Thank you for your cooperation**

Appendix 2: A questionnaire for hotel respondents

Name of enumerator: -----Date of Interview:

-----

1.0 Household demographic and socio-economic characteristics

c001	District	1. Ilala, 2. Kinondoni
c002	Street name	To be filled up
c003	Questionnaire number	To be filled in the evening after survey
c004	Name of respondent	Record both first and last name
c005	Name of hotel/restaurant	To be filled up
c006	Gender of respondent	1.male, 2.Female
c007	Age of respondent	Years
c008	Marital status	1. Single, 2. Married, 3.Divorced, 4.widowed
c009	Education Level of respondent	1.primary education, 2. Secondary, 3. University 4. Other (specify)
c010	Occupation	1.employed, 2.Business, 3.other (specify)
c011	Beef sold	1.Quality beef, 2. Normal, 3. Both quality and normal beef
c012	Years in beef business	Years in number
c013	Nationality	1.Tanzanian, 2.other (specify)
c014	Ethnic group	To be filled up

2.0 In addition to beef what other most important type of meat do you sell?

Type of meat	Chicken c015	Fish c016	Mutton c017	Pork c018	Other (specify) c019
Tick where appropriate					

3.0 Beef marketing information

c020	What is the source of beef you sell? -----	1. Internal sources e.g. Ranches, 2. Imported 3.Both internal and external sources
c021	If imported (Qn c020) from where? -----	Mention the sources
c022	If imported (Qn c020) why?-----	Give the possible answer
c023	If from internal sources (Qn c020) what are they -----	Mention the sources
c024	What quantity of quality beef do you sell per week? -----	(kg)
c025	How much do you pay to suppliers for this lot? -----	Sh/kg
c026	What is the single most important quality attribute do you consider to judge quality beef?	Give the possible answer

	-----	
c027	Who are your main customers? -----	1.Tourist, 2. Households, 3..Other (specify)
028	What price do you charge per unit? -----	Sh/kg
029	How your customers react towards prices? -----	1. Price is high, 2.price is cheap, 3.Other (specify)
c030	What do customers say about your product?	Give possible opinion

#### 4.0 Income sources and expenditure

Beef and beef products sold during last week	Unit of measure c031-c039	Number sold c040-c048	Unit price c049-c057	Total revenue c058-c066
Beef cuts				
Roasted beef				
Dried beef				
Sausages				
Other (specify) .1.				
2.				
3.				
4.				

#### 5.0 Purchase of substitutes

Expenditure per week	Quantity bought /unit c067- c070	Unit price c071-c074	Total expenditure c075- c078
Chicken			
Fish			
Pork			
Other (specify)			

#### 6.0 price variability and market condition

c079	When do you sell more beef?	Give possible months
c080	Give reason (Qn c079)-----	Give possible reasons
c081	What was the price offered during these months (Qn c079)-----	Tsh/gm/ kg
082	In which period of the year do you sell less beef ----	Give possible months
c083	Give reason (Qn c082)-----	
c084	What is your main source of market information such as price and demand-----	
c085	In your opinion has demand for quality beef increased or decreased in past two years? -----	1= increased, 2=decreased, 3= remained the same
c086	Give reason for your answer (Qn c085)-----	
C087	What is price trend in last two years -----	
c088	What changes has occurred in quality beef over the last two years? -----	1= better packaging, 2= price changes, 3. =Better grading, 4.Other (specify)
c089	What pricing strategy do you use? -----	1.cost based, 2. Competition based, 3. Both 1&, 4. Other (specify)
C090	Is demand for beef higher that of substitute?-----	

C091	In your opinion what needs to be done to improve beef industry-----	
C092	Do you advertise your product?	1. Yes, 2. No
C093	What strategy do you use to increase beef sales---	Give the possible strategy

### 7.0 Costs in beef marketing

Item	Cost c074-c082
Transport	
Storage facilities	
Electricity	
Packaging materials	
Advertisement	
Labour costs	
Rent.	
Other costs 1. ----- 2. -----	

Given opportunity which most important aspect would you need intervention to enhance your quality beef marketing activities?

Aspect	Most important c083-c088	Important c089-094
Credit access facilitation		
Business management skills		
Market linkage and information		
Other (specify) 1.		
2.		
3.		

**Thank you for your cooperation**

Appendix 3: A questionnaire for quality beef marketers (supermarket).

Name of enumerator: -----Date of Interview:

-----

**1.0 Household demographic and socio-economic characteristics**

c001	District	<i>To be filled up</i>
c002	Street name	<i>To be filled up</i>
c003	Questionnaire number ----	<i>To be filled in the evening after survey</i>
c004	Name of respondent	<i>Record both first and last name</i>
c005	Name of supermarket/shoprite	<i>To be filled up</i>
c006	Gender of respondent	<i>1.male, 2.Female</i>
c007	Age of respondent	<i>Years</i>
c008	Marital status	<i>1. Single, 2. Married, 3.Divorced, 4.widowed</i>
c009	Education Level of respondent	<i>1.primary education, 2. Secondary, 3. University 4. Other (specify)</i>
c010	Occupation	<i>To be filled up</i>
c011	Beef sold	<i>1.Quality beef, 2. Normal, 3. Both quality and normal beef</i>
c012	Years in beef business	<i>Number</i>
c013	Nationality	<i>1.Tanzanian, 2.other (specify)</i>
c014	Ethnic group	<i>To be filled up</i>

**2.0 In addition to beef what other most important type of meat do you sell?**

Type of meat	Chicken c015	Fish c016	Mutton c017	Pork c018	Other (specify) c019
Tick where appropriate					

**3.0 Beef marketing information**

c020	What is the source of beef you sell? ----- ---	<i>1. Internal sources e.g. Ranches, 2. Imported 3.both 1&amp;2 sources</i>
c021	If imported (Qn c020) from where?-----	<i>Mention the sources</i>
C022	If imported (Qn c021) Why -----	<i>Give the possible answer</i>
c023	If internal sources (Qn c020) mention them	
c024	What quantity of beef do you sell per week?	<i>(kg)</i>
c025	How much do you pay to suppliers for this lot? -----	<i>Tshs/kg</i>

c026	What is single most important quality attribute do you consider to judge quality beef?	1. <i>platability (flavour, juiciness, tenderness, texture,)</i> 2. <i>Appearance (freshness),</i> 3. <i>Nutritional composition,</i> 4. <i>Safety from bacteria,</i> 5. <i>other (specify)</i>
c027	Who are your main customers? ----- -----	1. <i>tourist,</i> 2. <i>Households,</i> 3. <i>Hotels</i> 4. <i>Other (specify)</i>
	What potential market opportunities do you targeting in future -----	
c028	How your customers react towards prices?	1. <i>Price is high,</i> 2. <i>price is cheaper than expected,</i> 3. <i>Other (specify)</i>
c029	What do customers say about your product?	<i>Give possible opinion</i>

#### 4.0 Income sources and expenditure during last week

Beef and beef products sold during last week	Number (kg) bought /sold c034-c037	Purchase price c030-c033	Selling price c038-c041	Total revenue c042-c045
Beef cuts				
Sausages				
Fillet steak				
Other (specify)				

#### 5.0 Purchase on substitutes

Expenditure per week	Quantity bought /sold c046- c049	Purchase price/kg	Selling price c050-c053	Total expenditure c054- c058
Chicken				
Fish				
Mutton				
Other (specify)				

#### 6.0 Price variability and market condition

059	When do you sell more beef	<i>Give possible months</i>
060	Give reason for your answer in (Qn 059)-----	<i>Give possible reasons</i>
061	Price offered during these months (Qnc059)-----	<i>Tsh/gm/kg</i>
062	In which period of the year do you sell less beef -----	
063	Give reason for your answer (Qn c062) -----	
064	What is your main source of market information such as price and demand-----	
065	In your opinion is demand for quality beef increase or decreased in past two years? -----	1= <i>increased,</i> 2= <i>decreased,</i> 3= <i>remained the same</i>
066	Give reason for your answer (Qn c065) -----	
067	What is price trend in last two years	
068	What changes has occurred in quality beef over the last	1= <i>better packaging,</i>



	two years? -----	2= price changes, 3 = storage facilities , 4. =Better grading
069	What pricing strategy do you use -----	1. Cost based 2. Competition based 3. Both 1 & 2, 4. Other (Specify)
c070	In your opinion is demand for beef higher than that of substitute? -----	1.High, 2. Low, 3. Other (specify)
c071	In your opinion, what needs to be done to improve beef industry? -----	
c072	Do you advertise your product?-----	<b>1. Yes, 2. No</b>
c073	What strategy do you use to increase beef sales-----	List possible strategies

### 7.0 Costs in beef marketing

Item	Cost c074-c082
Transport	
Storage facilities	
Electricity	
Packaging materials	
Advertisement	
Labour costs	
Rent.	
Other costs 1. -----	
2. -----	

Given opportunity which most important aspect would you need intervention to enhance your quality beef marketing activities?

Aspect	Most important c083-c088	Important c089-094
Credit access facilitation		
Business management skills		
Market linkage and information		
Other (specify) 1.		
2.		
3.		

**Thank you for your cooperation**

Appendix 4: A questionnaire for beef marketers (butcher/ meat shop)

1.0 Household demographic and socio-economic characteristics

c001	District	To be filled up
c002	Street name	To be filled up
c003	Questionnaire number	To be filled in the evening after survey
c004	Name of respondent	Record both first and last name
c005	Name of butcher/meat shop	To be filled up
c006	Gender of respondent	1.male, 2.Female
c007	Age of respondent	Years
c008	Marital status	1. Single, 2. Married, 3.Divorced, 4.widowed
c009	Education Level of respondent	1.primary education, 2. Secondary, 3. University 4. Other (specify)
c010	Occupation	To be filled up
c011	Beef sold	1. Quality beef, 2. Normal, 3. Both quality and normal beef
c012	Years in beef business	Years in number
c013	Nationality	1.Tanzanian, 2.other (specify)
c014	Tribe	To be filled up

2.0 In addition to beef what other most important type of meat do you sell?

Type of meat	Chicken c015	Fish c016	Other (specify) c017
Tick where appropriate			

3.0 Beef marketing information

C018	If imported (Qn c018) from where	Mention sources
0c20	If imported (Qn c020) why?	Give reasons
C021	If internal source mention them	Mention sources
c022	What quantity of quality beef do you sell per week? ----- (kg)	
c023	How much do you pay to suppliers for this lot? --	Sh/kg
C024	What is single most important quality attribute do you consider to judge quality beef	
c025	Who are your main customers? -----	1.tourist, 2. Households, 3. Hotels 4.Other (specify)
026	What price do you charge per unit? a. Steak ----- b. Mixed----- c. Liver-----	Sh/kg

	d. Other (specify)-----	
027	How your customers react towards prices? -----	1. Price is high, 2.price is cheap, 3.Other (specify)
c028	What do customers say about you product	Give possible opinion

#### 4.0 Income sources and expenditure

Beef and beef products sold during last week	Unit of measure c029-c033	Number sold c034-c038	Unit price c039-c043	Total revenue c044-c048
Beef cuts				
Fillet steak				
Steak				
Mixed				
Other (specify)				

#### 5.0 price variability and market condition

c049	When do you sell more beef?	Give possible months
c050	Give reason (Qn c049)	Give possible reasons
c051	What was the price offered during these months (Qn c049)-----	Tsh/gm/ kg
c052	In which period of the year do you sell less beef	Give possible months
c053	Give reason (Qn c052) -----	
c045	What is your main source of market information such as price and demand-----	
c056	In your opinion has demand for quality beef increased or decreased in past two years? ---	1= increased, 2=decreased, 3= remained the same
c057	Give reason for your answer (Qn c056 )	
c058	What is price trend in last two years	
c059	What changes has occurred in beef industry over the last two years? ----- -----	1= modern meat shops, 2= price changes,3 = Better grading, 4. Improved meat van, 5.Other (specify)
c060	What pricing strategy do you use? -----	1.cost based, 2. Competition based, 3. Other (specify)
c061	In your opinion is demand for beef higher than that of substitute? -----	1.High, 2. Low, 3.the same, 4. Other (specify)
c062	Do you advertise your product?	1. Yes, 2. No
c063	What strategy do you use to increase beef sales -----	List possible strategies
c064	In your opinion, what needs to be done to improve beef industry? -----	

#### 6.0 Costs in beef marketing

Item	Cost c065-c076
Cost of purchasing cattle	
Cost of purchasing beef in kg	

Transport	
Storage facilities	
Electricity	
Packaging materials	
Advertisement	
Labour costs/salary	
Rent.	
Market dues	
Slaughter fee	
Other costs 1.	

**7.0 Given opportunity which most important aspect would you need intervention to enhance your quality beef marketing activities?**

Aspect	Most important c077-c080	Important c081-084
Credit access facilitation		
Business management skills		
Market linkage and information		
Other (specify) 1.		

**Thank you for your Cooperation**

Appendix 5: A checklist of the study

	Parameter	Parameter value
1	Source of cattle or beef marketed	
2	Price of cattle in live weight	
3	Quantity of carcass in kg	
4	Trans port cost of cattle to the abattoir /cattle	
5	Market dues at the auctions/ cattle	
6	Slaughter fee at the abattoir/cattle	
7	Transport cost of beef from the abattoir to selling point	
8	Convention factor	
9	Processing costs/kg	
10	Costs of packaging materials/ unit	
11	Transport cost of beef Arusha to Dar	
12	Storage costs per day/ cow	
13	Quantity of sirloin sold per week in ton	
14	Price of sirloin per kg	
15	Gross revenue from sales of sirloin in kg	
16	Quantity of sausage sold per weed	
17	Price of sausages in kg Arusha	
18	Gross revenue from sausage per week	
19	Average cost of producing one kg of sausage	
20	Beef fillet Selling price in kg	
21	Price of minced meat /kg	