

PINEAPPLE MARKETING IN MWINILUNGA DISTRICT OF ZAMBIA

**A Research Report Presented to the Department of Agricultural Economics and
Extension Education of the University Of Zambia**

BY

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LIST OF ABBREVIATIONS

GDP	Gross Domestic Product
IOT	Industrial Organisation Theory
Kg	Kilograms
KM	Kilometer
PRSP	Poverty Reduction Strategy Paper
SCP	Structure, Conduct and Performance
SPSS	Statistical Package for Social Sciences
USA	United States of America
ZAMHORT	Zambia Horticultural Company

ABSTRACT

PINEAPPLE MARKETING IN MWINILUNGA DISTRICT OF ZAMBIA

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The overall objective of this research was to determine the efficiency of the pineapple market by using the Structure, Conduct and Performance model for analysing markets. This study was conducted in Ikelenge within Mwinilunga District of Zambia. The study area was selected as it is one of the main areas where pineapples produced. The respondents were 43 farmers and 29 traders. These were purposively sampled due to the absence of a sampling frame. The farmers were personally interviewed by employing a structured questionnaire, consisting of closed and open – ended questions, these types of questions were used in order to maximise the amount of data collected. The data collected was processed with a computer using the statistical package for social sciences (SPSS), this was due to the fact that the data collected was quantitative in nature.

With respect to the pineapple industry's structure, the study found that the industry has no formal registered firms. The industry is at its infancy stage and the barriers to entry were in the form of lack of capital, lack of appropriate transport facilities and lack of an established market. In terms of conduct, the study found that no single trader or farmer had influence on the industry as a whole. Most of the traders as well as farmers use negotiations as a means of coercing rivals. Due to the lack of standards, and lack of independent actions of the traders, the conduct was found to be inefficient. Market performance is a function of the outcome of the structure and conduct. The study findings also show that there was an indication of a deviation from the 'ideal model', as traders and farmers were not acting independently, the market was not organized, and products were not standardised.

Based on these findings the following recommendations were made; traders and farmers organise themselves into associations, rehabilitate the road network, there is need to provide infrastructural facilities, and need to establish credit facilities.

CHAPTER 1

INTRODUCTION

1.1 Background

By virtue of being an agricultural country, much of Zambia's income is obtained from the agricultural sector. Since Zambia is not developed industrially, it is imperative to harness agriculture as the engine for economic growth. Presently, the Zambian agricultural sector, which is essentially made up of both crop and livestock production, contributes between 18% and 20% to Gross Domestic Product, (GDP). It is therefore, possible to increase the contribution of this sector to the economy by increasing agricultural production.

But agricultural production without good marketing knowledge is almost meaningless, because marketing is a process that transforms the physical production into monetary value so as to be worth something to the economy. But the fact that the pineapple fruit can only do well in Mwinilunga, production of the crop has been hampered by the continuous marketing problems which have been worsened by the virtual collapse of the fruit cannery in 1992 which used to buy the pineapple fruit in bulk from the farmers. Northwestern province is Zambia's second largest province in area (120,000/km²) but the least populated about (15,500) people. The population is predominately rural and dependent on subsistence agriculture. The primary food crop is cassava although maize is still being increasingly grown both for domestic consumption and as a cash crop. Over the years an established production and trade in fresh pineapples has grown in the northern most part of the province (around Ikelenge) since the 1900s. Mwinilunga particularly is the only district in the country with the comparative advantage in terms of production of the fruit. Pineapple growing is confined to the sandy areas of Mwinilunga district, where about 10% of all households in the district grow pineapples.

A research carried out by the PRSP (2005), indicates that pineapples have been a major source of income for many farmers until 1991, when the fruit cannery was closed. The closure of the cannery has posed a lot of marketing hardships to pineapple growers. Since the closure of the fruit cannery production of pineapples has reduced. The bulkiness of the crop makes it difficult to transport especially when feeder roads are taken into consideration. Roads are generally in a bad state of repair during the peak pineapple

season. An increase in the production of pineapples in the late 1960's to early 1970's prompted government to initiate the construction of a cannery plant. The cannery factory at Mwinilunga started its operations in 1971. The location of the cannery near the Mwinilunga district was intended to minimize the transport constraint and to take advantage of the support of developing the infrastructure there. Further more, government shifted power from the National Agricultural marketing board to the Zambia horticultural company (Zamhort) as the sole marketing parastatal company for all fruits and vegetables. These institutions were responsible for the sell and distribution of inputs and purchase of agricultural produce from farmers. These institutions set the producer prices, which tended to be uniform regardless of location and season of the year. The presence of these institutions provided a peculiar market structure for the market system of pineapples. The structure of the market was literally composed of two marketing enterprises namely Mwinilunga cannery and Zamhort. Their number and the relative size were small. With respect to market conduct, that is, the market behaviour of the firms, it was dictated to them by the government, thus competition did not exist. The purpose of the institutions was mainly to reduce market imperfections, which would result if market forces were left to adjust the market structures. The institutions were also used to regulate prices, (Banda, 1983). After the closure of the Mwinilunga cannery which coincidentally occurred at the same time when the parastatal marketing collapsed, there is no empirical knowledge of the market structure, that is, the behaviour of the various actors in the marketing system.

1.2 Problem Statement

Despite the fact that the pineapple industry has been in existence for at least 35 years, there has been no research that has been carried out which focuses specifically on the pineapple marketing system, in terms of its structure, conduct and performance. This is due to the absence of any documentation. Most of the research that has been carried out was on that that involves vegetables and fruits in general, Ncube *et al* (1980), in their study of the structure, conduct and performance of the vegetable markets in Lusaka point out that the places from which the marketing firms purchase or procure their supply of vegetables significantly affect market structure, conduct and performance. Daka (1997),

in his research on vegetables conclude that with the abandonment of direct price control it is more than ever necessary to improve information on the working of the marketing system. Nyange *et al* (1993) indicated that fruit marketing in Tanzania was relatively underdeveloped as compared to other traditional cash and staple food crops. Therefore, this research will try to fill this gap in knowledge in the Zambian setting. To the best of our knowledge, there has been no empirical analysis of the pineapple marketing system on its structure, conduct and performance, as evidenced by the absence of documentation.

It is therefore cardinal that a study of the market in terms of structure, conduct and performance of the pineapple industry is carried out so as to determine its efficiency.

In order to achieve the desired role of the market structure in the economic development of the agricultural sector of Zambia, the knowledge of the existing market structure, conduct and performance assumes a critical importance.

1.3 Justification

The purpose of was study was to gain knowledge on the marketing system of pineapples in terms of its structure, conduct and performance. The findings are important, as they will inform policy makers and stakeholders in the agricultural sector in their efforts to improve the performance of the pineapple marketing system in Zambia as a whole and Mwinilunga in particular. An organized marketing system for pineapples would result in an improvement in the marketing of pineapples; this would therefore help stimulate production, and contribute towards the enhancement of fair pricing, facilitate expansion of the market, and consequently improve earnings to make pineapple farming a viable sector to both the traders and growers.

1.4 General Objectives

The general objective of this research project was to examine the structure, conduct and performance of the marketing system of pineapples

1.5 Specific Objectives

The specific objectives of this research project were to:

1. To identify the number of traders in the marketing of pineapples.
2. To investigate the degree of competition.
3. To ascertain the tactics used in product pricing
4. To assess the efficiency of the marketing system
5. To identify the main constraints to pineapple marketing.

1.6 Organisation of the Research Report

The research report contains five (5) chapters. Chapter 1 puts forth the introduction to the study. It discusses the statement of the problem, the study objectives in terms of the general and specific objectives and the rationale- this explains the significant of the study. Chapter 2 discusses literature review; these are the past publications that are relevant to this study, due to the inadequacy of literature on pineapple marketing literature from relevant studies have been used, furthermore it presents literature on structure, conduct and performance. Chapter 3 brings out the methodology that was used in the study. This chapter proceeds with the introduction, then follows the description of the study area, data collection procedure then ends with analysis. Chapter 4 narrows down and deals with the research findings in depth, the characteristics of the traders in terms of Age, sex, level of education, number of years in the business, type of trading, reason for trading in pineapples, barriers to entry, product attributes and the major constraints faced. The second part of Chapter 4 looks at the characteristics of the farmers: these are in the following order, Age, sex, level of education, experience in farming, size of the field, trading area, and major buyers of pineapples, influence on price, sources of price information and the constraints faced by farmers. Chapter 5 discusses the conclusions and recommendations of the research project. Recommendations are discussed with considerations of their aims and suggest strategies to be undertaken by the relevant authorities in order to improve the marketing of pineapples.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Data on horticultural products as well as activities is very scanty because development of this sector has been left in the private hands, (Brag, 1991). This trend has not spared the pineapple industry. To this effect the literature to be used in this research will be mostly that on vegetables and fruits.

Any interpersonal or inter-organizational relationship involving an exchange (a transaction) is marketing. That is the essence of marketing is a transaction- an exchange- intended to satisfy human needs or wants. Consequently, marketing occurs any time one social unit strives to exchange something of value with another social unit. Marketing consists of all activities to facilitate that exchange (Stanton, 1984). Marketing has been defined and described by many authors. Kohl (1967) defines agriculture marketing as “performance of all business activities in the flow of goods and services from the point of initial agricultural production until they are in the hands of ultimate consumer”. Thus marketing involves a series of actions and events that take place in a sequence. In addition, some co-ordination of these series of events and activities are necessary if goods are to move in some orderly fashion. Marketing functions are categories of a complex network of marketing. These functions can be broadly classified as:-

Exchange functions: - The exchange functions are those activities involved in the transfer of title of goods; basically those are selling and buying.

Physical functions: - These are activities that involve handling, movement and physical change of the actual community itself. The produce has to be assembled from its scattered producers in one place and stored at the central place, because that is where buyers are.

Consumption takes place overtime and production takes place seasonal and therefore storage comes in, to store goods for overtime consumption. The transportation function is primarily concerned with making goods available at proper place or being brought for storage in time. **Facilitating functions:** - These are those functions which make possible the smooth performance of the exchange and physical functions. This includes

standardization, financing and marketing intelligence. Standardization is when a product is made into a certain form whose criterion is known. A standardized product is easier to buy because you can even buy without inspecting the product because you know what to expect. Standardization adds value to the product. Financing is the process by which a product or business is helped to expand through the use of money. You can use credit to expand or improve the operations of your business. Financing is really making available money to help in the marketing processes. Intelligence is where you gather information about the market. It is to with, what do consumers think and expect of your product, the other competitors in the market, the type of consumers and type of market etc. when you have information about the market, it becomes easy for the firm to plan and know what to expect (Kampamba, 1992 p.15).

The major components of structure are the market shares controlled by various firms, the tactics employed in the industry wide, technological advancement and product differentiation, amount of money spent on promotional campaigns, market research and product development (Kohls and Downey, 1972)

Manda *et al* (2006), indicate that there appears to be some demand for the fruit (pineapple) on the local market, either as a fresh fruit or in terms of other products of the fruit, such as canned pineapple fruit. They further pointed out that production and marketing of pineapples is, however hampered by various constraints, key amongst which are lack of producer organization, markets and statistical data.

Araka (1989), in his study found that most farmers throughout Africa have long recognized the importance of good transport routes between rural areas and city markets. Without these routes, farmers are unable to get their crops to market. He further elaborated that for farmers to successfully get produce to market involves more than passable roads, farmers need affordable and available means of transport on these roads, as well as storage facilities to preserve their produce - out of the rain and fluctuating temperatures - until such transport can be found.

Attwood and Takavarasha, (1993), in their report on Efficiency in Marketing Farm Products, point out that the transport position in many communal areas is a major handicap to improved marketing of smallholder products. The main problems are the quality of the road network in communal areas, the availability of suitable vehicles and the costs charged for transportation of produce. Poor roads result in, both damage to products and high lorry operating costs. According to this study it concluded that smallholders face transport problems in delivering their produce to market due to poor road infrastructure, with some roads impassable during the rainy season and many roads rough and sandy with some patches of good gravel in places. Inadequate road networks, resulting in farmers having to transport produce over long distances to the nearest road, and poor timing and unreliability of the limited passengers and transports services that are available.

Manda *et al* (2006), in their study on the Pineapple sub - sector and value chain analysis reported that at the moment insignificant volume of fresh fruits are exported from Zambia to the outer world including the European union, Japan and USA. Most of Zambia fresh fruits are consumed locally and quite a big proportion is wasted due to limited processing facilities. Furthermore, substantial amount of fruits in Zambia perish before leaving the farm, there is no fresh fruit juice factory, which is geared for export in Zambia.

Pady (1981) carried out a survey on constraints encountered in the production and marketing of groundnuts in Petauke District. He reported that scale of production, low prices, and lack of specialized equipment for groundnuts production contributed to low levels of marketed output. In a nutshell, he concluded that socio-economic and technological forces seem to have played significant role in reduced groundnut production and marketing.

Improvements in the efficiency of small – scale farm marketing arrangements require adjustments to the basic thrust of government marketing policies. The expansion of local infrastructure, the expansion of agricultural services and specific actions in relation to individual categories of crops and livestock are important. Small - scale farmers require action that would enable them to take advantage of new opportunities, as they are

generally not in a position to initiate new developments. Given these opportunities, it is expected that small - scale farmers will respond fully in terms of more efficient marketing of their farm products (Attwood and Takavarasha, 1993).

Manda et al (2006) in there research on the pineapple sub sector and value chain analysis observed that many of the largest producers are not influential traders due to a combination of domestic demand and geographical and logistical factors. They cited an example on China and India, where growing income and large and growing urban population fuels strong domestic demand.

Kohls and Uhl (1985), in there book “Marketing of Agricultural products “suggest that there are some economic conflicts that are involved in the food marketing system. This is because consumers are interested in securing the highest food value at the lowest possible price while producers want the highest possible returns from the sale of their products and middlemen seek to earn the greatest profit from their services, their further pointed out that one of the primary tasks of the food marketing system is to reconcile these sometimes conflicting demands.

A 1983, study on the factors influencing the dramatic reduction in officially marketed groundnuts that was carried out by the Planning Division of Ministry of Agriculture and co-operatives identified producer price and informal markets as major factors that contributed to the reduction in officially marketed groundnuts (Zulu, 1994).

According to Manda et al, most of the pineapples produced in Solwezi and Mwinilunga District are sold to traders who may either be retailers and/ or wholesalers. These traders visit the farmers, examine the crop and negotiate the price. Once purchased the trader then pays for the transportation costs to the final destination.

Minot (1999), in his research on effect of transaction costs on supply response and marketed surplus, reports that transportation costs are simply the most concrete form of transaction costs, defined as the monetary and /or opportunity costs associated with

carrying out a sale or a purchase. Other transaction costs include those associated with finding a buyer (or seller).

According to Aulakh and Ncube, an examination of existing literature on the Structure, Conduct and Performance in Zambia, will show that the area has remained generally under-developed. In cases where market studies have been conducted, the models used were borrowed from the west and sometimes the relevance of which left much to be desired. Ncube *et al* (1983), indicates that a study of market structure, conduct and performance is essential to know the broad characteristics of the firms engaged in distribution of vegetables at retail level. Further more, the growth structure of the marketing firm is closely linked up with the nature of business organization of the firm. The organizational aspects of marketing firms are an important part of market structure affecting the conduct of market and its performance. With respect to concentration of business, it implies what particular proportion of total market business is shared by specified proportion of marketing firms.

Under the PRSP (2005) report on the agriculture section, the report indicates that most of the farmer co-operatives that used to buy farm produce on credit from the farmers have collapsed and the few remaining do not have the capacity to buy farm produce. Further more it points out that the closure of the pineapple factory that provided farmers in the district with a ready market for their pineapples, thereby empowering them economically, has also reduced the production of pineapples because farmers have no market and hence the poverty levels of people in Mwinilunga has greatly increased.

According to Kapunda (1995), the environments under which different marketers operate are different and as such their performance and problems tend to differ markedly. From his study he observed that marketers in less urbanized areas seek to make high profits by means of raising prices, while urban marketers make profits through handling larger volumes of business. The difference is due to the fact that urbanized areas are characterized by competitive market structure in which the trader is a price taker. The converse holds for less urbanized areas.

Duma *et al* (1993), recognizes the importance of fruit marketing and is also aware of the existence of constraints like disorganized marketing systems, aggravated by lack of or poor transport and storage facilities, thus leading to great losses. Nyange *et al* (1993), in their study indicates that very little marketing research, on fruits has been done in the past to warrant an understanding of the industry by planners and potential investors for future development. New entrants, policy makers and other interest groups lack the information required to facilitate the decision making process. Marketing is the biggest setback in the development of the fruit industry.

Chanda (1993) carried out a research on the seasonal price variations, which is a case of vegetables, where he indicated that good marketing programs could only be designed if sound and researched information is made available. Further he pointed out the market system plays a critical role in stimulating increased output, the role of an efficient market system is to achieve optimal allocation of scarce productive resources as well as provide market information to guide all participants in the wage trade during their planning process. While carrying out a research on vegetables and development in Zambia, Daka observed that marketing was the most critical problem faced by vegetable growers in Northwestern province. He observed that vegetable producers could have the crops ready for harvest but had problems to access buyers. He further noted that in critical times, farmers resorted to barter system of exchange. Sometimes produce was left to rot, vegetable marketing was further constrained by lack of reliable transport and fluctuations in market prices.

2.2 Theoretical Framework

2.2.1 Market Structure

Market structure consists of those characteristics of the organisation of a market that influence strategically the nature of competition and pricing within the market. From economic theory the characteristics of the organisation of the market are: the degree of sellers and buyer's concentration, the size of the distributing firms, the degree of product differentiation, and condition of entry in the market and the extent of Government

intervention. The combinations of these parameters define the degree of competition in the industry.

According to Bain (1956), the elements of market structure consist of those characteristics of the organization of a market, which influence strategically the nature of competition and pricing within the market.

2.2.2 Degree of Seller and Buyer Concentrations

The relative degree of seller and buyer concentration is a criterion that covers both number and sizes of firms serving the producer-farmers with marketing of their produce. This criterion is necessary in order to fulfil the condition that for a perfectly competitive market structure, the number of these firms must be large and their sizes small enough for each firm not to possess dominant market power. However, it may be noted that though the number is important, yet it is not just the number, which makes market structure competitive. Equally is the attitude of the firms towards each other. Wharton (1962) studied the situation in case of rubber in Malaya. It was reported that monopsonistic market structure would arise when the dealer, who operated in the rural areas, combined the triple functions of a marketeer, merchandiser and money lender. Further more, if one is to study the concentration amongst the marketing firms in a region, data pertaining to the volume of say, food-or grains purchased or handled by a firm in monetary or physical terms could be collected. Data can then be organized to show what particular proportion of the total market business is shared by specified proportions of marketing firms.

2.2.3 Condition of Entry into a Market or Industry

This condition is also known as barriers to entry or the relative ease or difficulty with which the new firms may enter the market. Other things being equal, the easier the entry to a business, the lesser would be concentration and the greater the competition in the market. To a very large extent, this is determined by the advantages, which the established firms have over the potential entrants. Bain (1959), considers entry as the establishment of a new firm which builds or introduces new productive capacity and he explicitly excludes from his entry concept (a) the take – over of an existing firm by some other firm, which constitutes changes in ownership; (b) the expansion of capacity by an

established firm; (c) cross entry, that is, entry by a firm already established in another industry. He further introduced the concept of 'the condition of entry', which he defined as the margin by which established firms can raise their price above the competitive price level persistently without attracting entry. This was later explained symbolically by Koutsoyiannis (1977):

$$E = \frac{P_L - P_C}{P_C}$$

Where: E = condition of entry

P_L = Limit price

P_C = Competitive price ($P_C = LAC$)

Solving it for P_L we get $P_L = P_C (1 + E)$

Thus the condition of entry, E, is in fact the premium accruing to the established firms from charging a price, P_L , higher than the pure competitive price, P_C .

2.2.4 Product Differentiation Barrier

Product differentiation gives to the firm a degree of control on the price of its product. The firm is able to decide on the price on the basis of the costs of production and marketing. The emphasis on product differentiation for entry is of latest origin. Potential firms known as an entrant are at a disadvantage because they have to make their products known and get some of the customers of the established firms.

Therefore, the effect of product differentiation on barriers of entry for firms could be examined by analyzing data of various types of services provided by the firms to the producer-farmers. It is therefore advisable that such data are obtained from the farmers/traders rather than from the firms.

2.3 Market Conduct

Market conduct will be viewed as the pattern of behaviour that the marketing firms follow in adapting or adjusting in the markets in which they operate. In a nutshell, it refers to the actions, dealings, tactics and business strategies of the firms in their own markets or towards rival firms. Market conduct is usually studied through the

examination of: (a) policies towards market sharing and selling prices, (b) policies aimed at coercing the rival firms, and (c) policies towards selling the quality of the product.

According to Aulakh and Ncube, the useful area for investigation in the Zambian context is whether the sale of produce is taking place according to the law of the land; and if not what are the deviations. Then what exactly is the nature of the tactics which the different sized firms follow whether the market share of various competitor firms is proportional to their effort shares, which in this context in market may be credit granted to the farmers by the marketing firms. Such an analysis would suggest by how much of total credit should be granted by a given firm to increase its market share by a given magnitude.

According to the fundamental theorem of market share determinant,

$$S_i = m_i = \frac{M_i}{M} \quad (S_i \text{ is proportional to } m_i)$$

Where: S_i = firm's market share;

m_i = firm's effort share, that is, the share of total credit advanced to the farmers by all the selected marketing firms;

M_i = i^{th} firm's marketing effort, that is, credit granted by the i^{th} firm in kwacha to farmers;

M = marketing effort of all the selected firms, that is, credit granted by all the firms in kwacha

2.4 Market Performance

Market performance refers to the economic results that flow from the market as each firm pursued its particular line of conduct. The term performance stands for an outcome of an action and is reflected in the quantity a buyer would buy from seller, market prices, and interfirm variations and quantity stored. Metcalf (1969) says that market performance enables to know (a) how well the market performs. Here one can make a distinction between positive and normative elements of performance. Each commentator being able to choose his own norms and make his own assessment, (b) what explains the good and bad features of their performance, (c) how performance can be improved, through public policy manipulation.

Aulakh and Ncube (1983), conclude that there is no specific criterion for measuring performance of agricultural markets. It can, however, be assessed by collecting field data pertaining to the performance variables. According to Abbot (1958), in an efficient market system, *ceteris paribus*, the difference between the farm gate price and the retail price should reflect the costs involved in the activities performed between the point of production and consumption plus a small profit margin which is enough to cover the risks and uncertainties.

2.5 Assessment of Marketing Efficiency

In order to assess the efficiency of the marketing system, the concept of the market margin was used. Market margin by definition is the difference between the retail price and the farm gate price. It is the portion of the consumer's income that goes to pay for the services that are involved in the marketing of a particular commodity a consumer wants to buy. It is the difference between what the consumer pays for commodity and what the producer receives. In a sense the market margin is the price of all the utility-adding activities and functions performed by the seller. This therefore includes the expenses of performing the marketing functions and a profit margin. As a rule of thumb, the wider the market margin the less efficient the marketing system, conversely the narrower the market margin the more efficient the marketing system. However, it should be noted that wider margins do not necessarily mean an inefficient marketing system; they might be due to excessive costs of the marketing functions (Tchale, 1993).

Mangisoni (1985) propounded that using this approach; factors such as seasonal variation, storage costs, transport costs, handling costs as well as market fee may be discovered.

The market margin is given by:

$$MM = RP - FGP$$

And the profit margin is given by:

$$PM = MM - (LC + MF + HC + TC)$$

Where: MM is the market margin (t/kg)

RP is the retail or market price (t/Kg)

FGP is the farmgate price (t/Kg)

PM is the profit margin (t/Kg)

LC is the labour cost (t/Kg)

MF is the market fees (t/Kg)

HC is the handling charges (t/Kg), and

TC is the transport cost (t/Kg).

2.6 Market Concentration

Market concentration refers to the degree for which production or selling of a product in a particular market or industry is concentrated in the hands of a few firms or individuals. In measuring market concentration we are concerned with individual markets such as the vegetable market, and with the number and relative sizes of sellers in each market. Other things being equal, the vegetable market will be concentrated, the fewer the number of individuals selling or the more unequal the distribution of market shares. Market concentration is measured using a concentration index. To develop a more general criterion for a concentration index it is useful to proceed with the concentration curve. This plots the cumulative percentage of the product being sold (which can be taken as a measure of marketer size) against the cumulative number of marketers ranked from the largest to the smallest. Concentration curve for a hypothetical market is plotted in Figure 1.

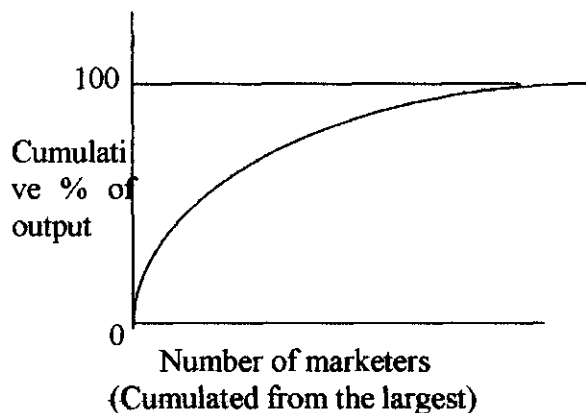


Figure 1: Concentration Curve for an Hypothetical Market

Since marketer's outputs are cumulated from the largest, the curve is concave from below, being in the limit a straight line when all sellers within a market are of equal size. Thus, marketers' output size inequality is reflected in concavity of the curve, while marketers

number is indicated by the intersection of the curve with the 100 percent output level. A concentration index is a summary representation of a concentration curve. Assuming a market with n firms with outputs x_i ($i=1, \dots, n$) ranked from largest to smallest, we define market's output $X = \sum_{i=1}^n X_i$ and hence the market share of the i^{th} firm is $S_i = X_i/X$.

The most widely used concentration index is the concentration ratio, which is defined as the proportion of market's output accounted for by the r largest firms, where r is an arbitrary number. Thus,

$$C_r = \sum_{i=1}^r S_i$$

The measure is particularly favoured in descriptive empirical work because it is both easy to calculate and easy to understand intuitively. Criticisms lie on the arbitrary selection of r and on the fact that only a single point on the concentration curve is taken. The value of 1 means monopolistic market while 0 means a competitive market.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the study area, target population, type of data collected, and how the data were processed

3.2 Study Area

This study was carried out in Mwinilunga district as it is one of the two main pineapple production areas, the other being Solwezi. Mwinilunga was selected because it has a large number of pineapple growing areas. Within Mwinilunga District, Ikelenge was chosen on the premise that it was the nearest and most recommended area that can be used as a study site. This recommendation was made by a group of researchers who had at the time of my study had just completed a study on the value chain analysis of the pineapple market.

3.3 Sample Size

The sample was composed of pineapple farmers, and traders. The number of respondents interviewed was 72; this was broken down into 43 farmers and 29 traders. The sample size of the farmers could have been larger but was made impossible due to high operational expenses. The respondents were supposed to be selected purposively after initial contact and gaining familiarity of the area but this was not the case because it was not easy to locate both the traders and farmers. To this effect those found were interviewed. The rationale for interviewing both farmers and traders was to gain insight of the marketing characteristics of the pineapple farmers and traders in terms of structure, conduct and performance, as well as to investigate on the constraints experienced by both the farmers and traders during marketing of their produce.

3.4 Data Collection

The research procedure included data collection from primary sources. The primary data were collected from farmers (producers), and traders. The data required were obtained

through personal interviews by the use of a questionnaire with open and closed-ended questions.

3.5 Data Analysis

The Structure, Conduct and Performance (SCP) paradigm was used during data analysis. The SCP paradigm is based on the industrial Organisation theory (IOT) that was developed in the mid fifties amidst efforts to link market structure and its outcome. The theory is concerned with how variations and imperfections in the Organisation of markets affect the degree of success of markets in meeting societal needs (Scherer, 1989). Early application of the theory was in the investigation of collusive behaviour in highly concentrated markets. Interest in IOT grew in the sixties as economists realised that linkages between market structure and conduct, and performance provided powerful tool for economic analysis of markets (Caves, 1992).

CHAPTER 4

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter looks at the findings of the study. It describes the characteristics of the farmers and traders in terms of such attributes as sex, reason for trading in pineapples, the barriers of entry faced by traders, and constraints experienced by both farmers and traders in the marketing of pineapples.

4.2 Socio-Economic Characteristics of Respondents

Table 1 shows that all the farmers interviewed were male (i.e. 100 %). This can be attributed to the land tenure system combined with culture in Zambia, where most or all of the land is owned or allocated to males than to females. On the other hand, Table 1 also shows that 24.1 % of the traders interviewed were female while the male represented 75.9 %, this can be attributed to the fact that there is no discrimination in trading as, both women and men have equal opportunity to be traders. This could also be attributed to the distance that is covered from the place of purchase of pineapples to the market place. It was noted that the male traders cycle long distances to the market while women do not, this could be attributed to the fact that it takes the traders who cycle to the market place in Mwinilunga a day to reach the market place.

4.2.1 Sex Profile of Respondents

Table 1: Distribution of Respondents by Sex.

Sex	Farmers	Traders
	Number	Number
Male	43 (100 %)	22 (75.9 %)
Female	0 (0 %)	7 (24.1 %)
Total	43 (100 %)	29 (100 %)

Source: Own Survey Data

4.2.2 Age of the Respondents

Table 2, below shows that the majority of the farmer respondents' were within the age range 29 – 39 years, represented by 41.9 %. 23.3 % was the second largest group of respondents; this was with respect to the age ranges 40 – 50 years and that above 50 years. The smallest group was in the range of 18 – 28 years of age. The table also reveals that, most of the traders interviewed were similarly in the age range 29 – 39 years, (41.4 %) of the respondents. The second largest group was in the age range of 40 – 50 years (34.5 %), while 20.7 % represented the age range 18 – 28 years and 3.4 % represented the age above 50 years, unlike that of the farmers where the smallest group was from the age range 18 – 28 years. This can be attributed to the fact that most of the farms are owned by the most senior members of the family.

Table 2: Distribution of Respondents by Age Group.

Age	Farmers Number	Traders Number
18 – 28 years	5 (11.6 %)	6 (20.7 %)
29 – 39 years	18 (41.9 %)	12 (41.4 %)
40 – 50 years	10 (23.3 %)	10 (34.56 %)
Above 50 years	10(23.3 %)	1 (3.46 %)
Total	43 (100 %)	29 (100 %)

Source: Own Survey Data

4.2.3 Education Level of Farmers and Traders

Table 3(a) shows the distribution of respondents (farmers) by level of education. The percentage that had no formal education was 11.6 %, while those who had attended primary school were 39.5 %; secondary school 46.5 % who were the majority of the respondent. This figure includes farmers who attended junior secondary school.

The distribution of traders by level of education is also shown in Table 3 it reveals that the majority of the traders 48.3% had reached secondary school (junior secondary school inclusive). 37.9% had reached primary school while 6.9 % been to college, those who had no formal education were 6.9 % as well. The high percentage of uneducated farmers can

be ascribed to the high number of farmers in the age range 40 – 50 years and those above 50 years making up to 46.6 % of the respondents who have not had any formal education.

Table 3: Distribution of Respondents by Level of Education.

Educational level	Farmers	Traders
	Number	Number
None	5 (11.6 %)	2 (6.9 %)
Primary school	17 (39.5 %)	11 (37.96 %)
Secondary school	20 (46.5 %)	14 (48.36 %)
University/ College	1 (2.3 %)	2 (6.9 %)
Total	43	29 (100 %)

Source: Own Survey Data

4.2.4 Experience in Farming and Trading

From Table 4, it can be seen that 80 % of the farmers had 10 years and above experience in farming and had a field size that was between 4 – 8 hectares, while 58.3 % of the farmers had between 4 – 8 hectares of field size with an experience of between 0 – 4 years. From this cross tabulation it shows that there is on relationship between the number of years in pineapple farming and the size of the field of pineapple. If they was a relationship between these two variables it was expected that the longer the period the farmer has been in the farming of pineapples the large the size of the field.

Table 4: Percentage Distribution of Farmers by Experience and Size of Farm.

Experience	Size of farmers field			Total
	0 - 4 Ha	4 – 8 Ha	Above 8 Ha	
0 - 4 years	41.7%	58.3%	0	100.0%
5 - 9 years	37.5%	31.3%	31.3%	100.0%
Above 10years	6.7%	80.0%	3.3%	100.0%

Source: Own Survey Data

Table 5 shows that 48.3 % of the traders had been in the business of pineapple trading for less than 4 years. 34.5 % represented those traders who had been in the business for a period of 5 to 9 years, while the smallest proportion had existed in the business for more than 10 years. This is illustrated in the Table 5 below.

Table 5: Distribution of Traders by Number of Trading Years.

Experience	Number	Percent
0 - 4 years	14	8.3
5 - 9 years	10	34.5
Above 10 years	5	17.2
Total	29	100.0

Source: Own Survey Data

4.2.5 Point of Sell

Results from the study show that farmers sell their produce at different places, 58.1 % of the farmers sold their pineapples at the farm as well as the market. 25.6 % of the farmers investigated sold their produce at the farm; while 16.3 % sold their pineapples at the market. This can be attributed to a number of factors, but the farmers attributed this to the lack of personal transporting facilities that would not attract high transportation costs.

(Table 6)

Table 6: Distribution of Farmers by Point of Sell.

Market outlet	Number	Percent
At the farm	11	25.6
At the market	7	16.3
At the farm and market	25	58.1
Total	43	100.0

Source: Own Survey Data

4.2.6 Market Outlet

From Table 7 below it can be seen that from the respondent farmers 24 (55.8 %) sold their produce to both the consumers and traders. While 18 (41.9 %) of the farmers sold to traders alone, and the remainder 2.3 % of the farmers interviewed sold their produce to consumers.

Table 7: Distribution of Traders by Market Outlets.

Market outlet	Number	Percent
Consumers	1	2.3
Traders	18	41.9
Both Consumers and Traders	24	55.8
Total	43	100.0

Source: Own Survey Data

4.2.7 Mode of Transport

The most popular mode of transport used by the farmers during the transportation of their produce was own transport, that is, they would rather use their own form of transport, which in this case were bicycles (46.5 %). The second most popular mode of transportation that was used was public transport (25.6 %) these were mini buses and trucks. While 27.9 % did not use any form transport, that is, they neither used bicycles, mini buses or trucks. This was due to the fact that they did not transport their produce to the market instead sold their produce at the farm, (see table below).

Table 8: Distribution of Farmers by Mode of Transport Used.

Mode of transport	Number	Percent
Not applicable	12	27.9
Private transport	20	46.5
Public transport	11	25.6
Total	43	100.0

Source: Own Survey Data

Table 9 below shows the distribution of traders according to the mode of transport used by traders, 12 (41.4%) of the traders use private transportation – which is in the form of bicycles. While 17(58.6 %) of the traders said they use public transport. Public transportation was in the form of trucks, mini buses, vans and big buses.

Table 9: Distribution of Traders by Mode of Transport Used.

Mode of transport	Number	Percent
Private transport	12	41.4
Public transport	17	58.6
Total	29	100.0

Source: Own Survey Data

4.2.8 Influence on Pricing and Source of Price Information

Table 10 below shows that 7(16.3 %) of the farmers interviewed were able to influence the pricing of pineapples in comparison to the traders where 14(48.3 %) said they were able to influence pricing. Results from the study further shows that the majority of the farmers as well as traders said they had no influence in pricing of pineapples, 36(83.7 %)

and 15 (51.7%) respectively. Therefore it can be said that no single player in the market had influence on the pricing of the pineapples.

Table 10: Distribution of Respondents by Influence on Pricing.

	Farmers	Traders
	Number	Number
Yes	7 (16.3 %)	14 (48.3 %)
No	36 (83.7%)	15 (51.7%)
Total	43 (100%)	29 (100 %)

Source: Own Survey Data

Sources of price information as shown in Table 11 below are own investigations (30.2 %), and other farmers (69.8 %). Thus it shows that farmers are in a habit of coercing during the setting of selling prices, further showing that no single farmer has power to set the selling price. The majority (82.3 %) of the traders indicated that they obtained information on pineapple price from other traders. While 17.2 % of the traders indicated that they obtained information on prices by carrying out their own investigations.

Table 11: Distribution of Respondents by Source of Information on Prices.

	Farmers	Traders
	Number	Number
Own investigations	13(30.2%)	5(17.2 %)
Other traders	30(69.8%)	24(82.3%)
Total	43(100.0%)	29(100.0%)

Source: Own Survey Data.

The farm gate prices for the pineapples are shown in Table 12 below. The distribution shows the lowest selling prices for pineapple was K 2000 with a frequency distribution of 24 (55.8%), which had the highest frequency and the highest being K2500 with a frequency distribution of 19(44.2%). This difference in prices strengthen competition in that the lowest price will attract a large number of consumers as compared to a high price , this may force the other players in the market to either reduce or increase their pineapple prices.

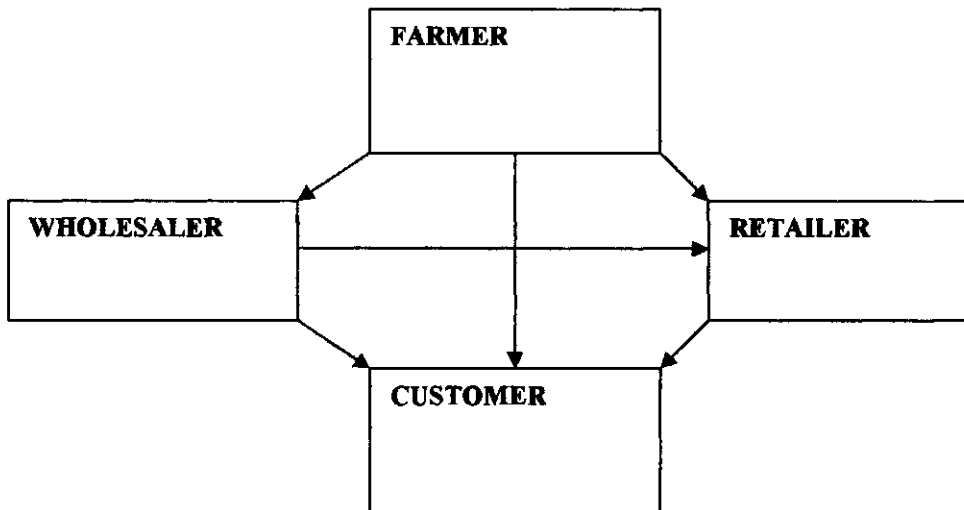
Table 12: Distribution of Farmers by Level of Price Charged

	Number	Percent
K2000	24	55.8
K2500	19	44.2
Total	43	100.0

Source: Own survey Data

4.2.9 Marketing Channel for Pineapples in Mwinilunga

Figure 3: The Marketing Channel for Pineapples in Mwinilunga



The pineapples reached the consumer via different marketing channels. Some products were channelled directly to the retail outlets (by small traders). Others were channelled to wholesalers who in turn sold them to retailers (large traders). A third channel was the selling directly to the consumer, that is, by both the wholesaler, and farm

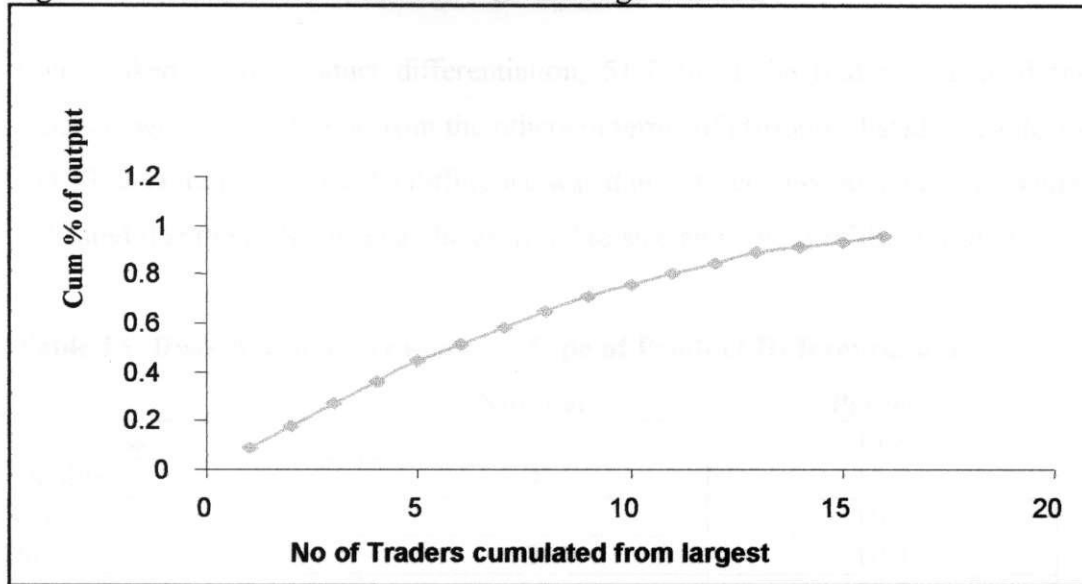
4.3 Market Structure

This section will concentrate on the Socio-economic Characteristics of Traders.

4.3.1 Market Concentration

Using the four trader concentration ratio (CR4), they show that competition in the market is very weak and there is some strong indication of oligopolistic market structures for the two pineapple markets considered.

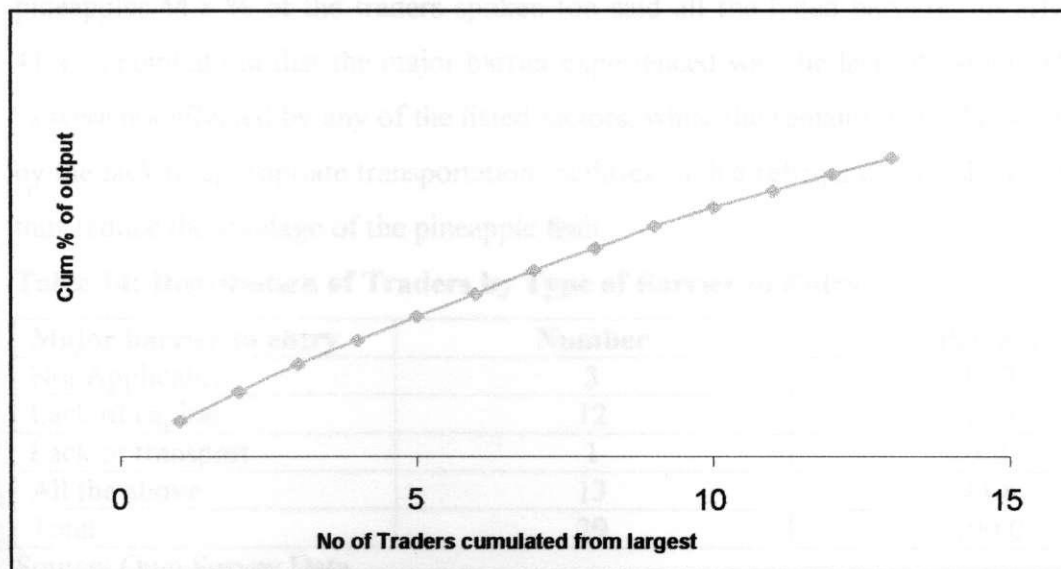
Figure 1: Concentration curve for Mwinilunga Market



Using the four – trader concentration ratio it indicates a percentage of 35.6%, which is between 33% and 50 %. This may indicate a weak oligopolistic market structure, for the Mwinilunga market. (See figure 1 above)

Four-trader market concentration ratios for in the market in Ikelenge were (below 50%) but above 33 %(38.9%) suggesting the non-existence of a competitive market environment – which was a weak oligopolistic market structure. (See figure 2 below).

Figure: 2 Concentration Curve for Ikelenge Market



4.3.2 Product Differentiation among Traders

When asked about product differentiation, 51.7 % of the traders indicated that their products were not different from the others in terms of attributes listed in Table 13 below and 13.8 % indicated that the difference was due to sweetness, and quality. While 10.3% indicated that the difference can be ascribed to size and colour of the pineapples.

Table 13: Distribution of Traders by Type of Product Differentiation

	Number	Percent
Sweetness	4	13.8
Quality	4	13.8
Colour	3	10.3
Size	3	10.3
Not different	15	51.7
Total	29	100.0

Source: Own Survey Data

4.3.3 Barriers to Entry

The barriers to entry that were identified by the traders interviewed consisted of the following; lack of an established and reliable market, lack of capital, on further enquire of the reason fore the lack of capital the traders augmented that it was ascribed to the absence of any sort of lending institution in the areas, that is, both Mwinilunga and Ikelenge, and lack of appropriate transport facilities suitable for transporting pineapples.44.8 % of the traders spoken too said all the listed barriers did affect them, 41.4 % pointed out that the major barrier experienced was the lack of capital while 10.3 % were not affected by any of the listed factors, while the remaining 3.4 % were affected by the lack of appropriate transportation facilities such a refrigerated trucks which would thus reduce the spoilage of the pineapple fruit.

Table 14: Distribution of Traders by Type of Barrier to Entry

Major barrier to entry	Number	Percent
Not Applicable	3	10.3
Lack of capital	12	41.4
Lack of transport	1	3.4
All the above	13	44.8
Total	29	100.0

Source: Own Survey Data

4.3.4 Reason for Trading

The majority of the traders (44.8 %) indicated that they got involved in pineapple trading because of high profits being made. Other reasons that were put forth include poverty and out of interest, represented by 41.4 % and 13.8 % respectively. By engaging in pineapple trading the traders pointed out that they are able to reduce the poverty that they encounter through the use of the profits gained from trading in pineapples. . This is shown in the table below (Table 15).

Table 15: Distribution of Traders by Reason for Trading in Pineapples

Reason	Number	Percent
Interest	4	13.8
Profitability	13	44.8
Because	12	41.4
Total	29	100.0

Source: Own Survey Data

4.3.5 Conduct in the Pineapple Market

This section will describe the pricing behavior of the traders;

Most of the traders (68.4%) stated that they determine the selling price of their pineapples after consultations from other traders while (31.0 %) said they determined the price of their pineapples by looking at the selling prices which other traders fixed, and further by looking at the costs that are incurred during marketing.

Table 16: Distribution of Traders by Determination of Selling Price

Source of prices	Number	Percent
Own investigations	10	34.4
Other traders	19	65.5
Total	29	100.0

Source: Own survey Data

Table 17 shows that 18(62.1%) of the traders the major costs incurred where, storage costs, transport costs, and packaging costs – that is the materials that are used during transportation of pineapples. While 6 (20.7%) stated transportation, added to the selling price. Packaging costs, where identified as costs that affected 1 (3.4%) of the traders.

Table 17: Factors taken into Account when Pricing Pineapples

Costs	Number	Percent
Transport Costs	6	20.7
Storage Costs	4	13.8
Packaging Costs	1	3.4
All The Above	18	62.1
Total	29	100.0

Source: Own survey Data

Table 18 below shows the distribution of the buying price of pineapples per group, this is the common measure that is used when pineapples are been purchased from the farmer, this was discovered after both the farmers and traders where asked if their sell or purchase the pineapples in kilograms. The lowest price for a group of 3 pineapples was K2500 representing 48.3 % and the highest buying price was K3000 which also had the highest frequency distribution of (51.7%). The prices for the medium and small sized pineapples are attached to the appendix.

Table 18: Distribution of Traders According to Buying Price of Large Pineapples

Price	Number	Percent
K 2500	14	48.3
K 3000	15	51.7
Total	29	100.0

Source: Own survey Data

The table below(19) shows the distribution of traders according to selling prices of large sized pineapples, the lowest selling price being K 3000 with a frequency distribution of 1(3.4%) and the highest being K 5000 with a frequency distribution of 6(20.7%). The majority of the traders sold their pineapples at K4000 – (51.7 %). Similarly the Tables showing the selling prices of the medium and small sized pineapples are attached at the appendix.

Table 19: Distribution of Traders According to Selling Price

Price	Number	Percent
K3000	1	3.4
K3500	4	13.8
K4000	15	51.7
K4500	3	10.3
K5000	6	20.7
Total	29	100.0

Source: Own survey Data

4.4 Performance of the Pineapple market

4.4.1 Market Margins

The pineapple traders in the two markets, that is Mwinilunga market (Kanyihmpa) and Iklenge received high proportions of marketing margins from the pineapples. The traders received marketing margins ranging from 31.59 % to 35.8 %, (Table 20). This is in line with the assumption that high market concentration in the leads to high prices and profits received by traders (marketers) .This indicates the operation of market power to the detriment of social welfare on the parts of producers (farmers) and consumers. This could be attributed to the marketing of pineapples by a large number of small traders.

Table 20: Pineapple Marketing Margins

	Buying price	Selling price	Market margins	MM as % selling price
Average price for Mwinilunga market	K2687.50	K4187.50	K1500	35.8 %
Average price for Iklenge market	K2815.39	K4115.39	K1300	31.59%

Source: Own survey Data

4.4.2. Types of Traders

The traders were in three categories: Retailers constituted the largest proportion with 51.7 %. 17.2 % were wholesalers, and 31.0 %, were a combination of retailers and wholesalers, refer to below Table 21.

Table 21: Distribution of Traders by Type of Trading.

Type of Trading	Number	Percent
Wholesaler	5	17.2
Retailer	15	51.7
Both wholesaler and retailer	9	31.0
Total	29	100.0

Source: Own Survey Data

4.5 Constraints/Problems Experienced by Pineapple Farmers and Traders

The farmers and traders were faced with a number of constraints. Though the farmers and traders were interviewed separately they identified a number of constraints that were similar. Table 22 below lists the constraints pointed out as been the most pressing during the marketing of pineapples. The Table shows the numerical summary of the constraints in the pineapple market in terms of their frequencies and priority ratings in percentages. These are further discussed individually just after the Table 22.

Table 22: Distribution of Farmers by Type of Constraints Experienced by Farmers.

Constraints	Number	Priority rating (%)
Transport problem	41	95.3
High transport costs	40	93.0
Lack of an established market	38	88.4
Lack of storage facilities	36	83.7
Perishability of produce	36	83.7
Lack of extension services	34	79.1
Lack of capital	32	74.4
Lack of tables	14	32.6

Source: Own Survey Data.

4.5.1 Transport Problem

Table 22 shows that a total of 95.3 % respondents(farmers) experienced transport problems during the process of marketing pineapples combined with existing poor feeder roads, especially during the rainy season, work to the disadvantage of farmers. This is experienced during the transporting of the pineapple fruit to the market.100 % of the respondents experienced this problem, that is, problem of transporting the pineapple to the market place. The traders pointed out that one of the many problems engulfed in the transporting of pineapples was the use of bicycles which thus limited the amount of produce that they could carried to he market place(the Table listing the constraints experienced by the traders is attached at the appendix).

4.5.2 High Transport Costs

93.0 % respondents indicated incurring high transport costs; these costs are made excessive as the farmer channels the produce to the market place. With the recent instability of the prices of fuel, have lead to astronomical rise in transportation costs. 82.8 % of the traders pointed out that they experienced this problem as well; they attributed this high cost in transporting the pineapples due to their bulkiness.

4.5.3 Lack of an Established Market

Lack of an established market was identified as one of the constraints experienced by farmers (88.4 %). This can be attributed to the fact that most of the markets that were established were for maize, thus outlets for pineapples are almost non-existence. This is aggravated by the existence of poor transport networks, which makes selling uncertain so that some fruits remain unsold. On the other hand, 100 % of the traders indicated that they were faced with the problem of the absence of an established market. They augmented this to the closer of the pineapple cannery which according to the pineapple traders was the major buyer of their produce.

4.5.4 Lack of Storage Facilities

Storage facilities are an important factor in the marketing of perishables this includes facilities such as refrigerated store rooms or cold rooms, which are used to store the produce when not sold, refrigerated transporting trucks etc. In response to inquiring on the availability of storage facilities, 83.7 % of the interviewed farmers indicated that they had experienced the problem of the lack of storage facilities during the marketing of the pineapples. Of the traders interviewed 100% indicated to be facing problems in the storing of the produce (pineapples). This was evidenced by the absence of appropriate storage facilities such as cold rooms in the trading areas which resulted in the traders been forced to sell their produce faster for fear of losing their merchandise through spoilage, if they stayed without being sold for a long period of time.

4.5.5 Perishability of Produce

Perishability of produce is accentuated by the biological nature of most horticultural products. This property therefore limits the period that pineapples can be kept without been sold, thus increasing the chances of spoilage of the fruits. 83.7 % of the farmers indicated that their products got spoiled as they stayed without being sold for certain a period of time.

4.5.6 Lack of Extension Services

More than 75 % of the respondents admitted to experiencing inadequate extension services from the camp officers in their area. Upon investigation it was discovered that there was only one extension officer to cover all the villages with on transport facility to enable him to travel the long distances between the villages. This thus deprived the farmers from knowledge of the how best to take care of the pineapples so as to reach the market in good condition.

4.5.7 Lack of Capital

About 74.4 % of the farmers interviewed agreed that they had been hard hit by the lack of capital in hindering them from increasing the amount of produce that they can transport to the marketing place. The lack of credit facilities also added to the problem of inadequate finances that can be used to increase the area under cultivation so as to increase the amount that can be marketed. This constraint had a priority rating of 93.1 % among the traders. They explained that they could not expand their businesses to meet the increasing demand of pineapples due to limited capital. There further complained of the lack of credit/financial provision agencies in the area.

The following constraints were exceptionally indicated by traders in addition to those experienced and explained above, these are;

4.5.8 Lack of Shelter

96.6 % traders interviewed pointed out that they lacked permanent structures from where they could sell their pineapples. The traders did not use any thing to protect their produce from the scorching sun thus affecting the quality of the produce. There was an appeal by the traders that the councils who are in charge of the markets should consider constructing these facilities from the levies that they are paid for the use of the market place.

4.5.9 Lack of Processing Facilities

89.7 % of the traders registered consent to this problem. This was escalated by the closer of the cannery, as it was the only industry in Zambia that was the processor of pineapples. The processing industry is needed in that the amount of the produce from this area including other pineapple growing areas is enough to provide the industry with constant supply of the required amount of pineapples.

4.5.10 Poor Accessibility to up-to-date Market Information

72.4 % of the traders interviewed expressed concern for the lack of reliable source of official market information with regard to supply, demand and other economic aspects of pineapple marketing. According to the traders interviewed, the lack of a formal market communication system makes it difficult for them to maximize returns and minimize costs. Market information is important in that it will for instance provide the traders with such information as the market price of pineapples on the market; this information can be provided by such institutions as the Zambia National Informational Services. Further to improve the fairness of market price formation, a deliberate policy to ensure that timely and accurate market information about market conditions is available to all market participants.

4.5.11 High Levies

Despite the lack of the provision of appropriate marketing facilities by the relevant authorities the traders are still charged high market fees relative to their daily profits. This

was pointed out as a constraint by 55.2 % of the traders interviewed. The traders are charged K3000 per day, which they said was too much due to the fact that the produce does not get sold in a day or two. This therefore makes it expensive for them as they usually spend more than five to completely sell their produce. The constraints identified will affect the market in the sense that there is a potential danger of increasing the inventory (e.g. due to lack of transport) thus leading to spoilage of pineapples as they are highly perishable.

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The study revealed the characteristics of the framers and traders, and also gave a general overview of what categories of traders and customers are present in the industry.

5.2 Structure of the pineapple industry

The pineapple industry can be said to be in its infancy stage, it is mainly informal, with no registered firms in the industry. Traders carry out their businesses as individuals not as firms. Thus it was impossible to estimate the number of firms. As a result of the informal nature of the industry, there is no system of recording how many traders enter or exit the industry. Though from the observations, it can be said that, the number of traders was less as compared to the buyers. Product differentiation was not pronounced in the industry – the difference was seen in terms of size, sweetness and colour, neither was there standardisation of products. They were only two major areas of concentration namely: Mwinilunga market and Ikelenge market. Further more there were barriers to entry in the form of lack of an established market – this factor was a barrier in that, most would be traders prefer not to venture into pineapple trading simply because they do not have a recognised legal market place - , lack of capital, and the lack of transport.

5.3 Conduct of the Pineapple Industry

The conduct of the industry was deemed not to be satisfactory; because all or most all the players were not carrying out product and market research, for instance there was no product promotion. No single trader or farmer had significant influence on the industry as a whole; pricing was done after considering the happenings at the market and farm. In terms of pricing, the findings suggest that there was a strong element of collusive price setting in this industry. This is because the traders usually are close in terms of relationship were most of them travel together from the place of ordering their produce to the point sale. With respect to the farmers, the prices were based on the prices at which the pineapples were offered. Further more the prices were set in response to the supplies

from the different farms as well as those at the market. If supplies were high the traders had no choice but to reduce prices in order to sell, or risk their produce to be spoiled.

There was no form of standardisation of the products. This could be attributed to the lack of organisation within the industry. This resulted in assessing quality on the basis of observing and inspection as the customer was buying.

5.4 Performance of the Pineapple Industry

Performance of a market is the outcome of market's structure and conduct. From the actions of the traders and farmers it was seen that both acted on the basis of the actions of fellow traders and farmers. In a perfectly competitive market it is expected that the players in the market should act independently and offer their merchandise in a highly organised market. This was not the case in the pineapple market as it was seen to be highly unorganised. One of the attributes of a perfectly competitive market is that it should have standardised products. From this research project it was discovered that, the products were not standardised. The setting of prices was done without regarding any standards, thus not assuring the consumers of that they were getting their money's worth.

As the farmer and trader sold their produce, it was discovered that they both negotiated with the customers so as not to price their merchandise very high so as not to lose any customers. As is the case in a perfectly competitive market where no single individual can influence the setting of prices, this was in agreement.

Barriers to entry in the market were identified as: Lack of capital, lack of appropriate transport facilities, and lack of an established market. Though these barriers to entry were identified, there was freedom of entry and exit for the individuals into and out of the industry. From the findings of this research project it shows deviations from the "ideal model", which is that of a perfectly competition. For instance, the pineapple industry was characterised by traders not acting independently, a disorganised market, presence of barriers to entry, lack of efficient price setting mechanism, and the occurrence of some barriers to entry.

5.5 Recommendations

Considering the above facts, it has been noted that the marketing system of pineapples in Mwinilunga is inefficient and therefore was found imperative that necessary measures be suggested from the survey results taken so as to promote the marketing of pineapples.

5.5.1 Infrastructural Facilities

There is need to provide facilities for easy marketing of pineapples in terms of infrastructure, such as cold rooms for storage purposes. The government should also create more selling points across the country.

5.5.2 Provision of Credit Facilities

Farmers complained of the lack of a source of credit, this was the same complaint that was received from the traders. Thus they should be the formation of credit provision institutions that would look at the plight of small entrepreneurs.

5.5.3 Provision of Market and Investment Information

The Government should set up a department to assist individuals wanting to venture onto the industry with information and opportunities in this sector, both domestically and externally. Information of market such as prices offered, costs to be incurred can help likely investors to prepare entering the industry.

5.5.4 Rehabilitation of the Road Network

The feeder roads should be worked no so as to improve the accessibility of the villages where the pineapples are grown. Traders should consider organising themselves into associations, the formation of associations will result in the sharing of ideas, combination of expertise, possibility of securing loans as a group and increase possibility of supplying large buyers domestically.

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APPENDICES

APPENDIX 1: Distribution of Traders by Type of Constraints

Constraints	Number	Priority rating (%)
Lack of transport	29	100
Lack of storage facilities	29	100
Lack of tables	29	100
Lack of shelter	28	96.6
Capital Constraint	27	93.1
Lack of processing facilities	26	89.7
High transport costs	24	82.8
Poor accessibility to market information	21	74.4
High levies	16	55.2

Source: Own Survey Data

APPENDIX 2: Prices for Various Sizes of Pineapples

Distribution of Farmers According to Selling Price of Medium pineapples per Group

Price	Number	Percent
K2000	43	100

Distribution of Farmers According to Selling Price of Small Sized pineapples per Group

Price	Number	Percent
K2000	43	100

Distribution of Traders by Selling Price of Medium Sized Pineapples per Group

Price	Number	Percent
2500	2	6.9
3000	5	17.2
3500	16	55.2
4000	6	20.7
Total	29	100.0

Distribution of Traders by Selling Price of Small Sized Pineapples per Group

Price	Number	Percent
2000	1	3.4
2500	6	20.7
3000	17	58.6
3500	5	17.2
Total	29	100.0

Distribution of Traders by Purchasing Price of Medium Sized Pineapples per Group

Price	Number	Percent
2000	14	48.3
2500	15	51.7
Total	29	100.0

Distribution of Traders by Purchasing Price of Small Sized Pineapples per Group

Price	Number	Percent
1500	14	48.3
2000	8	27.6
2500	7	24.1
Total	29	100.0

APPENDIX 3: Questionnaire

THE UNIVERSITY OF ZAMBIA

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL ECONOMICS

PINEAPPLE MARKETING IN MWINILUNGA DISTRICT OF ZAMBIA (A CASE STUDY OF IKELANGE)

The purpose of this questionnaire is to describe the structure, conduct and performance of pineapple marketing in Zambia. The questionnaire will be administered to traders and farmers of pineapples. All information provided will be kept in the strictest of confidence. This questionnaire will be administered by Mr Henry C. Chipasha a fifth year student in Agricultural economics at the University of Zambia as part of his research project.

INSTRUCTIONS

Tick in the space provided against the correct answer where optimal responses have been offered, e.g., [] Yes [] No

**For open-ended questions insert in the blank spaces provided.
If question is not applicable, indicate N/A**

AGE 500 'QUESTIONNAIRE' FOR PINEAPPLE TRADERS

SECTION A: BACKGROUND INFORMATION

1. Date of interview.....
2. Age.....
3. Gender: Male Female
4. Level of education
 University

 College

 Secondary school

 Primary school

 none
5. Number of years in business.....
6. How do you classify your trading in pineapples?

 Formal Informal
7. Why did you decide to trade in pineapples?

 Interest Profitability

Others (specify).....

SECTION B: BARRIERS TO ENTRY AND EXIT

8. Did you experience any problems when starting your business?

 Yes No
9. If yes to question No 8, what was the major barrier?
.....
.....

SECTION C: CONDUCT OF PINEAPPLE TRADERS

10. Generally how do you classify your trading in pineapples?

 Farmer Wholesaler Retailer

11. How much of your produce do you sell per month?

12. Do you have adequate supplies?
 Yes No
13. If answer to question No 12 is yes, what do you think should be done?

14. How different are your products from those of your competitors?

15. Is it possible for you to increase your market share?
 Yes No
16. If yes to question No 15, how can it be achieved?

17. What is the selling price for your pineapples?

18. Do you sell in kilograms?
 Yes No
19. If yes to question No 18, what is your selling price per kilogram?

20. At what price do you purchase your pineapples?

21. Do you have any influence on the pricing of the pineapples?
 Yes No
22. If yes to question No 21, in which way do you influence the price?

23. If your answer is no to question No 21, where do you access information concerning prices?
 Own investigation
 Media
 Other traders
 Others.....

SECTION D: PERFORMANCE OF PINEAPPLE TRADERS

24. Do you own any means of transport?

Yes No

25. What costs do you incur by the time that your produce reaches its destination?

- 1. Transport
- 2. Storage
- 3. Packaging
- 4. Others.....

26. Do you have the relevant facilities to support the marketing of your produce?

Yes No

27. If answer is no to question No 26, what do you think is lacking?

.....

28. Is the profit margin you are making sufficient to cover costs and leave you with some profit?

Yes No

29. If not, what do you think should be done to improve them?

SECTION D: CONSTRAINTS EXPERIENCED BY PINEAPPLE TRADERS

30. Below is a list of possible constraints that you might be facing during the marketing of your produce, indicate which ones apply to you.

Lack of transport

High levies

lack storage facilities

Lack of shelter

High fluctuating prices

High transport costs

Poor accessibility to market information

Others (specify)

AGE 500 'QUESTIONNAIRE' FOR FARMERS

SECTION A: BACKGROUND INFORMATION

1. Date of interview
2. Age
3. Sex:
 - a. Male Female
4. Educational level none
 Primary
 Secondary
 University/ College

SECTION B: CONDUCT OF FARMERS

5. How long have you been producing pineapples?
6. What is the size of your field?
7. Where do you sell your pineapples?
 At the farm Market
8. To whom do you sell your produce?
 Consumers Traders
9. If at all you sell your produce at the market what mode of do you use?
 Private transport Public transport
10. Do you use any measure during the sell of your produce?
 Yes No
11. If yes to question No 10, what measure is used?
.....
12. How much of your produce do you sell?
13. What is the selling price of your produce?
14. Do you have any influence on the pricing of pineapples?
 Yes No

15. If yes to question No 14, in which way do you influence pricing?

16. Where do you access information concerning prices?

Own investigation

Media

Other farmers

Others specify

17. SECTION C: CONSTRAINS EXPERIENCED BY FARMERS

18. What major problems do you encounter in marketing activities?

Perishability of produce

Lack of transport

High transport

Lack of storage facilities

Others specify

19. *Do you have the relevant facilities to support the marketing of your produce?*

Yes No

20. If answer is NO to question 19, what do you think is lacking?

.....

21. Does the profit margin from the sell of your produce cover your costs?

Yes No

22. If not what do you think should be done?

END OF INTERVIEW: THANK YOU