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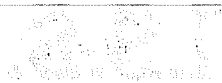
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**Internal Marketing Systems for Basic Foodstuffs and  
Government Involvement in the Central Region of Ghana  
(1970-1973)**

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## Introduction

In the past decade or so there has been emphasis on increase in agriculture production in Ghana while ignoring the fact that the extra production may not reach the consumer because of marketing and distribution problems - the alleged inefficient way in which intermediaries (private) tend to handle produce. To overcome this problem, corporations like the Ghana Food Distribution and the Grains Board were set up as corporations under the Ministry of Agriculture.

The principle objectives of the above-named corporations to keep down the prices of basic foodstuffs and ensuring their regular supply are far from realisation. <sup>1</sup> We cannot simply argue that even though agricultural output has increased the drastic cut in imports of agricultural produce and products from abroad causes prices of commodities to increase. We can only say that if total production of produce has in fact increased by 30% as is maintained in certain circles, this should offset the cut in imports since the relative increase in domestic production is higher than the relative decrease in imports. *Ceteris paribus* the relative prices of produce should be on the downward trend. The inefficient way in which the main government food distribution organisation goes about its marketing has much to do with this. For one thing, there has not been adequate preparation for marketing the relative increase in food production. Suggested improvements in the organisational set-up of the corporation have so far ended up in the lockers of some officials without any follow-up. This is partly due to over-centralisation at the national headquarters of the corporation and the constant counter-measures of the Ministry of Agriculture under which this corporation falls. A relative increase in produce which may not actually benefit agro-allied processing industries or final consumers clearly calls for a systematic study of human and non-human factors which influence the smooth flow of commodities. There is often total confusion (due to lack of basic marketing information) among government or non-government agencies as to what really constitutes the marketing problem. All the information which is systematically available on marketing are the wholesale and retail price information given by the Ministry of Agriculture's Economic and Marketing Divisions. Further, systematic information on the basic structure or types of intermediaries who operate within the market is not available. As has been recently pointed out - while some maintain that transportation is the main bottleneck, others believe that the main impediment is the system of private intermediaries. <sup>2</sup> This assertion lends support to our statement that marketing problems have not yet been identified, let alone studied.

## Chapter I - Aims of the Study

We are mainly interested in studying the flow of produce from the producer (farmer) to intermediary and final consumer as well as some of the factors which direct this flow. The length of the transfer is what is termed the marketing chain - which may involve number of transfers and this may have an effect on distribution. Our study is not only concerned with the main flows but also with the distinctive social interactions of traders or agents who are associated with the whole marketing system in Cape Coast, the capital of the Central Region. <sup>3</sup> Here and there, some distinctive important aspects of the marketing systems of other regions of Ghana will be mentioned.

1. To enable us to predict the flow of commodities to Cape Coast and the extent to which crucial variables influence the flow. This is based on flow-recordings during June 1970 - August 1971. The choice of the period is to enable us to take account of different marketing periods, that is, glut and lulls.
2. To analyse the role of the intermediaries and the problems facing them in the distribution process. The intermediaries could be individuals or groups or semi-government agencies.
3. To ascertain the extent to which Cape Coast (the capital of the Central Region) depends on its hinterlands for its consumption of general agricultural produce.
4. To study the difference between prices of various commodities at the producing and consuming ends and see whether such price differences are the result of deliberate policy of traders.

In addition, we hope to confirm or reject the following hypotheses:

- i) That the relative (compared with the national figures) high price of foodstuffs in Cape Coast is not due to a shortage of marketing outlets, but to deficient food production in the 20-mile radius of the town. It is generally assumed that the unreasonable increases in the retail prices of foodstuffs are due to inadequate marketing services at that level. The implicit assumption is that the relatively few wholesale sellers will come into collusion and become price leaders. Thus the setting-up of a semi-government agency for the marketing of basic foodstuffs would be a prerequisite of efficient marketing of foodstuffs.
- ii) That a greater percentage of food dealers bring their produce to Cape Coast from distances greater than 20 miles because of the low production of foodstuffs in the vicinity of the city. It can be argued that our delimitation is arbitrary, in view of the position and density of population of this town one would reasonably assume that most of its foodstuffs must have come from within the 20-mile radius. However, increasing the cultivation of cash-crops like lime and sugar cane, (high income proposition), may have tended to displace the production of food crops. <sup>4</sup>

iii) That the high prices of foodstuffs can be assumed to be a function of the length of the marketing chain, i.e. the longer the chain, the higher the prices of foodstuffs at the intermediate or final consumption level.

iv) That the absence of economies of scale in foodstuffs distribution and marketing is a result of the lack of means for preserving or processing large supplies of agricultural produce. Even in regions where such large-scale processing plants exist for certain crops food inputs are inadequate for their normal or full capacity utilisation.<sup>5</sup>

### Methodology of the Research

#### A. Study of non-institutional factors<sup>6</sup>

1. Measuring the flow: The main difficulties encountered in estimating the volume of the flow of produce or products are:

- a. Variation in type and size of containers.
- b. The specific weight of each commodity.

2. Time units: The choice of time elements to cover all week-days equally for the different days of the week. Likewise, the choice of weeks to represent equally the different weeks of the month. And the selection of years which might be termed representative.

3. Transit commodities: Such a study should differentiate as much as possible between transit and incoming flows if the main aim is predictive.

4. The choice of explanatory variables: The choice of such factors as market days, rates of flow, weather conditions and seasonal factors (peak and lulls). We may even add here that the identification of institutions dealing with the marketing of produce and their impact on flow presents many methodological problems.

#### B. Study of institutional factors

1. Identification of institutions, private and parastatal and how they fit into the marketing system.

2. Differentiating between well-established and not well-established trading institutions.

3. Identification of the queen pins<sup>7</sup> as a marketing catalyst and checking their role as such by interviewing sellers separately. The main problem here is that some of the queens are sellers of various produce at the same time.

4. The search for objective criteria to measure the effectiveness of the marketing system, and for identifying the levels at which government intervention will be meaningful.

C. Approaches to marketing systems as a continuum

Contrary to what appears in the literature on marketing, this paper adheres to no particular classical approach to marketing studies. From the evidence obtained from our various empirically-based studies, we came to the conclusion that the classical approaches overlap one another. There are three main approaches: product, institutional and functional. Some studies add a fourth approach which focuses upon decision-making.

The first approach essentially deals with the marketing of specific products and concomittant problems like organisation. The second approach relates the problems and operations of various institutions engaged in the marketing of commodities and the way in which institutions fit into the whole marketing system. The third or functional approach analyses various marketing functions such as buying and collection, standardising and grading, transporting, storage and selling. Thus, in terms of functions one wants to discover the preponderance of functions fulfilled by, say, producer wholesalers, intermediary wholesalers, and retailers as a whole. The decision-making approach is essentially a management approach, and synthesises all the various approaches.

For the purposes of this paper, we shall not go into the merits and demerits of each approach, but make use of each or any of them in the interest of meeting our principal objective. Our principal objective is to study the main problems associated with the marketing of general agricultural produce in the Central Region.

Chapter II

A. Analysis of Flow (non-institutional factors)

To obtain uniformity in the estimation of the flow of general agricultural produce, the various containers were reduced to pound weights. Thereafter, the estimated volume was related to time, distance and origin of commodities. This part of the analysis enabled us to construct a frequency distribution of the flow of produce and an equation system for flows.

The best predictions for the flows for the various products for the months is the mean of the flow values. However, this method does not give us an inkling of the relationship between the flows and the variables which influence the means. A simple multiple-regression analysis was used. Equations were involved, making use of dummy variables such as the day of the recording, the rate of flow, seasonal factors and harvesting period. Equations for each of the seven main crops consumed in Cape Coast were constructed. The relevant crops are plantain, cassava, palmfruits, eggplants, tomatoes, pepper and spinach. Lack of finance and time, and the probability that other crops would also correlate with the dummy variables anyway, caused other crops to be left out of consideration.

For each of the seven crops a fifteen by seven matrix of the explanatory variables was constructed. Further, to find out whether there is any relationship between the flow of produce and other variables, we tested the hypothesis that there is no correlation between the observed flow and each dummy variable, using 't' tests of significance.

$$t_{n-k}^* = \frac{\alpha_1 - 0}{\text{standard Deviation } (\alpha_1)}$$

that is, if  $t^* > t$  tables, we reject the hypothesis that the regression coefficient is zero.<sup>8</sup> For example, the following relationship at 0.05 level of signification was obtained for cassava

$$\text{Flow} = 31,022 - 10,182 \text{ wed} - 13,901 \text{ D sun} \\ - 3,023^* \text{ Drain} - 6,933 \text{ D dry.}^9$$

$$\text{The } R^2 = 0.806.$$

The flow of commodities to Cape Coast shows that factors such as rain, drought and harvest influence the mean. From the detailed analysis of the seven main crops, it appears that plantain has a peak flow in December; cassava in January, April, August, September, November and December; palm-fruits in January, February, March, August, September, November and December; eggplants in January, August, October and November and December; tomatoes in January, June, August, September and November; pepper in January, February, March, May, June and December. In the case of spinach, the variables used in the equation could not give us a positive relationship. Even in this case, the result of the first method indicates that June has one of the highest averages.

Matching the means of the main agricultural produce with the various months, the averages for August and September were the highest while the minor harvesting season, that is, December and January, came out with a relatively high average. On the other hand, the dry months, February and March, had a low score.

Using our first method, that is, relating the rate of flow to the mean monthly flows of all commodities which enter Cape Coast, the following conclusions can be drawn.

1. Predictions for June, October, February, March and May were below the average for the fifteen months.<sup>10</sup> Weather conditions such as rain influence the mean flow for June. One might have expected that July would also have a low figure because it falls in the main rain season. However, our mean estimate for July proved higher than we had expected. Given the limited information at our disposal, we are not in a position to explain exactly what might have contributed to the variation between 1970 and 1971 averages. Tentatively we would conclude that the level of agricultural production in 1971 was lower than in 1970 since the peak harvesting period around August in 1971 did not differ appreciably from the average flow in the lean period month of June, in contradistinction to the figure for 1970.

2. Using deviations from the means techniques, we concluded that in 1970 the monthly averages for July, August, September and November were higher than in 1971. In 1971 the averages for January and April came out high. One would have expected that August, the main harvest season, would have a high score. 'The factor which might have contributed to the unexpected result is the variation of time dimension with respect to agricultural products which do not necessarily follow the same harvesting period as raw agricultural produce'.<sup>11</sup>

Cape Coast, situated in an important foodstuffs producing area, gets most of its foodstuffs from local markets. It might be assumed that the flow of commodities from these markets (on special or important market days) would correlate with the rate of flow. The results of our study proved the contrary. Indeed, there was no positive association between the rate of flow and the important market days, i.e. Tuesdays and Fridays. It must be emphasised that this could be due to the fact that our analysis did not take into consideration the important market days of other regions where some of the commodities come from, although we would still doubt that this might have changed the results appreciably.

The idea that replenishing of stock would attain its peak on Mondays does not hold, since Monday's average did not differ much from those of non-important days, like Wednesday, Thursday and Saturday.<sup>12</sup>

However useful the above approach is, it does not enable us to understand the marketing process. To meet this deficiency we decided to tackle some of the distribution problems by studying the agents (intermediaries), who are involved in the marketing of commodities. For the sake of brevity, we want to highlight some of the essential characteristics of the present marketing system for basic staple foodstuffs in the Central Region of Ghana. This part of the analysis could confirm or reject some of our hypotheses. This would not be confined to any particular classical approach because of the reasons mentioned at the beginning of this paper.

## B. Analysis of institutional factors

### The fundamental characteristics of the marketing of basic foodstuffs by private or semi-government agencies

The study of the flows enabled us to relate to the type of intermediary in the foodstuff-marketing system. Here we have to take into account the institutional framework, not only in terms of totality but in terms of each of the various components which may help to explain among others why specific producers decide to sell their own commodities.

Anyone who is conversant with the complexities of identifying various groups involved in the marketing of commodities in Ghana, knows that the problem is complicated by the lack of specialisation among traders. Therefore it is not easy to assume that any particular group of traders is more important than another. If traders are differentiated according to volume of sales and their respective



functions, the results of such an approach are not very instructive either. Assuming also that most traders perform essentially the same type of function, we can still categorise them into various activities, such as: (1) Producers-wholesalers, (2) Produce-collecting wholesalers, (3) Buying and collecting wholesalers, (4) Non-producer and non-collecting wholesalers, (5) Wholesaler retailers, (6) Retailers.

The mode and extent of their operations differ according to volume rather than in terms of specialisation. In terms of efficiency, wholesalers are better organised than retailers, in the sense that they possess skills and are able to take great advantage of the poorly organised foodmarkets. Some of them possess means of transport and can easily move commodities from one place to another. They can easily acquire loans from individuals or banking institutions because they are able to use part of their assets as guarantee. Small dealers lack such advantages. To assess this, one should study the organisational set-ups of various traders, but this is outside the scope of this paper.<sup>13</sup> Similarly, when we discuss foodstuff dealers, we do not necessarily think in terms of the relative importance of functions related to types of traders, rather in terms of the problems connected with their functions.

It is our intention here to highlight some of the problems connected with buying and collecting, transport, storage, and buying and selling to wholesalers, retailers and consumers.

#### 1. Buying and collecting

About 33% of the dealers sampled in our study on the function of food contractors buy and collect produce from farmers. Collecting farm produce from farm gates involves much time and organisation; most dealers therefore employ agents to do the buying and collecting on their behalf. The advantage of such a scheme is that the buying and collecting wholesaler is able to keep low the buying prices of produce since no other intermediaries are involved. On the other hand, they save farmers the trouble of looking for buyers.

As we have mentioned, the analysis of our combined study of flow and marketing institutions in the Central Region of Ghana, brought us to the conclusion that most foodstuff sellers purchase their produce from intermediaries. In fact, 67 percent of food contractors purchase from intermediaries, 22 percent from producers, while the remainder are producer-sellers. This last category could be either producer-wholesalers or producer retailers.

The results of our detailed analyses of cassava, plantain, palm fruits, eggplants, tomatoes, pepper and spinach, show that within a 6-20 mile radius the ratio between producer-sellers and non-farmers is 1:1.45 approximately; beyond the 20 mile limit, the ratio is 1:10. Disregarding all distances a ratio of 1:3 obtains for intermediaries and producers.<sup>14</sup>

Why do some producers prefer to wholesale or retail their own goods? Most of them are aware of course, of the expense to themselves of the role of intermediaries, some of whom tend to make exorbitant profits. And so where distances between production and marketing (consuming) centres are not too prohibitive, they prefer to sell their own produce so as to gain maximum return on their labour.

Producer-wholesalers who prefer to sell their own produce are normally those who have other sources of income so that they can afford to delay the selling of their produce. In certain cases, they can even decide to sell now and wait for future payment. Contrariwise, there are producer-sellers who sell their produce immediately or before harvest because they need a certain amount of liquidity to carry on their daily household financial commitment. Those who pledge their produce before harvesting are normally at the mercy of price setters (buyers).

Most producers are indifferent to whom they sell their produce (private or government agencies). In our research on the production, distribution and marketing of rice in the Bolgatanga District of the Upper Region of Ghana, we came to the conclusion that about 65 percent of the producer-wholesalers sell their produce either to retailers or consumers. The remaining farmers have no choice but to sell their produce to the Government Rice Mill in Bolgatanga, because they had loans acquired from the Agricultural Development Bank and partly because this bank provides ready cash for their produce. <sup>15</sup> Under the maize scheme operated by the Ministry of Agricultural Development Bank in the Central Region the same type of arrangement exists as that in the Upper Region. Farmers sell their maize to the Ministry of Agriculture if they have been previously aided financially by the ADB.

## 2. Transport of Commodities

In many areas of Ghana, it is often thought that transport is a problem which prevents the smooth flow of commodities. The absence of good roads not only slows down the marketing of produce but also reduces the readiness of farmers to step-up production. As a result foodstuffs prices tend to rise beyond the means of the average wage earner. We have therefore studied the crucial factors which influence transport charges. <sup>16</sup>

Our analysis of the factors which determine transport charges in the Central Region shows that physical factors such as the space occupied by the produce and the weight, the state of the road used, period and the capacity utilisation that is, full load or less than full load, had a percentage score of 55. The next group of factors in terms of relative importance which affect the actual transport charges relate to such questions as whether the owner of the goods did or did not contribute his labour power during the transportation, while in addition the value of the produce transported influences the charges.

Our main conclusion is that transport charges as such are not prohibitive within easily accessible areas of production, i.e. areas which have good roads. Where this is not the case, transport charges are not only high but people often have to wait for hours or days before securing services. It is hoped that the new feeder-road construction policy of the present government will go far towards meeting these problems.

## 3. Storage of Commodities

The time lag between the arrival of some of the produce and its distribution makes it necessary to store such foodstuffs. However,

existing storage facilities are inadequate. Indeed, about 5 percent of all produce gets spoiled each year because of poor storage means. 17 In some cases one might think of modern refrigerators for storing food or even of the canning of perishable foods, but before embarking upon such venture, the economics of it would have to be studied thoroughly. We are not in a position to recommend suitable types of storage since that falls beyond our subject area. What could presumably help would be to teach housewives simple methods for preserving food which would presuppose the availability of simple means of preservation like bottles and vinegar. At this point, we wish merely to mention the fact that if food canneries were to operate at their maximum ability, part of the storage problem would be solved. However, it seems that the canning industry is not willing to buy from producers or intermediaries at competitive prices. The main argument of the canneries is that if they were to buy inputs (produce) at the prevailing market rates, they would not be able to justify this on cost grounds. In such a situation where agro-allied industry have a tenuous economic survival, direct subsidy should be given to industries, instead of depressing the price of produce to farmers.

Another consideration to be taken into account before such a subsidy is given to such an agro-allied industry is the ability of such a firm to have another main source of regular supply of produce. This can be done by contracting the growing of such produce to farmers on a yearly basis. It presupposes that such farmers will be obliged under the terms of a contract to deliver specific quantities of produce at stipulated prices at prefixed periods to such a cannery. Price fixation should not only be based on cost consideration of the processing firm, but also on those of farmers. Our suggestion here holds for crops which are used for daily consumption and thus already have an existing marketing outlet. For crops which can be used only as inputs of canneries, for example sugar cane, such competition does not exist, thus there is the need to speed up the production of such crops if the existing production of these is on the low side.

#### Private and Public Food Contractors (Formal Arrangement)

This is a special group of dealers in commodities who are somewhat more advanced than the ordinary intermediary in the sense that they possess more advanced managerial ability, that is, they are able to plan and control their business. Their main objective of course is profit maximisation and otherwise to get a sizeable share of the market. Primarily, they enter into food contracting with boarding schools, hospitals and prisons. This group includes such modern private or public corporations as The Ghana Industrial Holding Corporation (Meat and Vegetables Products Division) and the Ghana Fishing Corporation, both of them government corporations. Among the private firms, we would also count Kingsway Stores and the United Trading Company, but these firms are excluded here since they sell mainly processed agricultural produce while we concentrate on raw agricultural produce.

Contractors who supply basic food items to institutions normally enter into formal arrangements to supply certain quantities at

certain prices. Contracts are awarded on the basis of tenders. The main criteria used seem to be regularity of supply rather than level of price quotation. In all such dealings personal contact plays a considerable role. Contracts are drawn up on a yearly basis. Traders who fail to live up to the terms of the agreement might not have their contracts renewed. Revisions of price quotations are allowed if the contractor proves that these are in tune with general price changes. In contradistinction to this, the GFDC, on the other hand, dictates its own price to the buyers, whether individuals or schools.

#### Private and Public Food Contractors (Informal Arrangement)

Arrangements between intermediaries and final consumers can include the gentlemen's agreement under which dealers do not go through the food tender system, but supply food items on call. Such traders are not bound by price limits. In fact, their goods are priced at the time of delivery, where spot payment is made. It seems that institutions mainly make use of such agents when formal arrangements break down.

#### Forward Selling

Among the various forms of sales arrangement in the Central Region, the forward selling arrangement seems to be the most popular. This arrangement implies that the producer-wholesaler or the pure wholesaler must sell produce to an agent or intermediary because of a previous financial arrangement. Part of the marketing problem may be said to have its source in the type of financial arrangement between producers and intermediaries or among intermediaries.

In the Central Region, as in most other parts of Ghana, there is often a shortage of financial capital. Therefore, a trader often enters into some sort of financial arrangement to overcome this problem. If he is a producer-wholesaler who has obtained a loan from someone, he can be obliged to sell his produce to his creditor during harvest. In such a case, the original lender of the money may make enormous profits on the sale of produce. This might be to the disadvantage of the producers.

Farmers who are wholesalers or retailers may also be bound to sell their produce to a government agency, when they have previously obtained credit from the Agricultural Development Bank. <sup>18</sup> Under the Maize Loan Scheme to Smallholders, the financial arrangement is such that farmers are obliged to sell their produce through a pre-arranged government buying agency.

#### Commodity Queen System

In the marketing of basic foodstuffs there is the widespread assumption that the so-called queens prevent the smooth distribution of produce in their interest of controlling the volume and price of the commodities in a particular market. We were not sure of the validity of this assumption and have therefore interviewed both

queens and some sellers of various products: plantain, cassava, yam, cooking oils and vegetables such as tomatoes, eggplants and pepper in order to obtain the relevant information.

### Definition

We have not found an alternative definition that describes the concept of queens better than that used in our study on the institution of Commodity Queens in Cape Coast. 'The queen of a commodity is the head of the sellers of that commodity in a particular market. She acts not only as a ceremonial head, but is actually expected to take active part in the pricing of commodities at different periods of time'.<sup>19</sup> Her control over prices is fully effective only when she is able to control the minimum price of a particular commodity on each market day. Further, she should not only be capable of controlling the flow to a market area, but also affecting maximum control outside the market place. Once she is able to become a price setter she need not simultaneously control volume. Inability to control either price or quantity makes her function a merely ceremonial one.

Five queens who operate in the main Cape Coast market were interviewed. In addition, our marketing studies in the Somanya Agricultural District of the Eastern Region enabled us to study the role of queens.<sup>20</sup>

### The Functions of the Commodity Queen

1. To settle disputes and promote harmony between sellers.
2. To act as delegates or representatives on a committee dealing with issues of mutual interest to sellers of various goods. In this respect, the queen acts as an information channel.
3. Her role as a prefect can be seen during meetings or social gatherings over issues such as funeral contributions and contributions towards the general welfare of the community.

### Control of Flow and Price

On the basis of the information obtained from the queens and the sellers of various products, we concluded that the assumption that the queens act as monopolist agents is far from the truth. All the interviewees affirmed that they were not in any way influenced by the price policy of any queen. The main factor influencing the pricing of their goods is profit maximisation. With respect to the control of volume, four of the sellers interviewed in Cape Coast claimed that they could buy any quantity they like from either farmers or intermediaries. The same applied to nine others who reported that they bought from intermediaries and the remaining one bought direct from farmers. Similar information was obtained from a greater number of sellers in the Somanya District. In the course of our research, we

managed to unearth one case only in which a queen of a produce seemed able to control prices. This was mentioned by one seller who alleged that her queen was able to dictate to the oil sellers the lowest ceiling price of oil. Those sellers of oil who do not adhere to the dictates of the queen can have their wares confiscated by her until such time as they agree to her price policy. We were not able to substantiate this because the very sensitive nature of the question made for a lack of cooperation on the part of the sellers.

In discharging their duty as catalysts for the peaceful co-existence of traders, two queens asserted that would-be dealers in a particular commodity of which they are queens sought their prior verbal permission. But even this of course does not imply that the queens are able to dictate prices. The supervision of the sellers as claimed by some queens is very limited and does not involve price or volume control.

Most of the retailing of foodstuffs by the GFDC is done outside the market place. In 1973, GFDC's Regional branch decided to retail commodities at the main Cape Coast market. Before the corporation decided to operate within one of the markets, it did not seek the prior approval of any queen. In a way, this action by the Corporation shows that the queens do not really control where particular produce should be sold and who by. The queens themselves also asserted firmly that anyone can sell produce outside the market place without their permission. Obviously, if the queens are unable to control prices in the market, they are certainly incapable of regulating them outside the market. It may be added that there is no evidence of commission payment made to queens.

#### Prices of commodities

The fourth objective of this study is to look into the differences between prices of various commodities at the producing and consuming ends. In this connection, it may be noted first that retail prices on the Cape Coast Market are higher than the national average. Even though production of foodstuffs within the 20-mile radius of Cape Coast has increased slightly, this increase has not been sufficient to decrease prices on the Cape Coast market. One naturally assumes that the price of foodstuffs on the Cape Coast market will be higher than at the source area since traders normally add transport cost and profit margins to the cost of their produce. However, we found that at the level of retail prices there is no appreciable difference between rural and urban areas. This is because the bulk of production is sold to wholesalers from the main cities; the residue is so small that rural buyers have to pay high prices, compared to the rural wholesale prices. Even though an increasing supply by wholesalers for the urban market could be expected to depress prices, this is in fact offset by an increasing number of retailers competing for the supply of the wholesalers. Thus, increasing supplies do not necessarily make for low retail prices, and for reasons indicated before, there is also a retail price equalisation between urban and rural markets. In wholesaling price, variations in the Central Region are still found. 21

The situation in other parts of the country need not be the same. For example, in the Somanya Agricultural District, we discovered that the level of rural prices (wholesale and retail) is much lower than at the main consuming ends. <sup>22</sup> A possible explanation for this is that the level of production is such that after the wholesalers have got their share, the residue for the rural market is still considerable.

In contradistinction to this, there is a difference between wholesale and retail prices in the main consuming centres of the Somanya District which can be explained in this way:- The wholesalers who buy the bulk of foodstuffs normally come from the main city of Ghana, that is Accra. They normally arrive at the buying centres in the early hours of each market day. Upon their arrival, they are briefed by their agents about the previous market day's prices. The agents go to the market, survey it and exercise patience until about mid-day before bargaining about prices. They are then in a position to dictate prices to the producer-sellers who do not have any alternative but to accept the dealers' price. This is because they are not organised, but above all because their lack of transport and storage facilities obliges them to sell at the prices offered. Also, most of them do not have sufficient financial reserves to postpone the selling of their produce. What remains after the wholesalers have had their share of the market is not much. Since the quantity for retailing is diminished, the equilibrium price is bound to be high.

### Chapter III - The Role of the Government in the distribution and marketing of basic foodstuffs

The upward price trend of basic foodstuffs in the Central Region for the past decade, makes policy makers feel that government intervention in both the production and distribution of foodstuffs would be desirable, not only to increase production but also to improve the efficiency of the marketing system. The presupposition here is the inefficiency or ineffectiveness of private intermediaries in the marketing of foodstuffs. An essential prerequisite to any government involvement is a thorough analysis.

We present a brief elaboration of the motives underlying state involvement.

- (a) To promote an efficient marketing system by stabilising buying prices, thus stabilising farmers income. An added advantage will be the reduction of foodstuff prices to consumers.
- (b) To diminish the number of intermediaries so as to reduce the cost to consumers.
- (c) To secure the regular supply of commodities and if possible create a buffer stock to counteract seasonal lulls.
- (d) To redesign taxation policies in the form of progressive taxation on the profits of intermediaries. It is also argued that the state itself should take a part of the profits by setting up a parastatal buying agency. It is not easy to levy tax on profits

of private individuals. Protagonists of state involvement assume that such involvement will reduce the number of private intermediaries, thus facilitating the collection of profit tax.

(e) To acquire produce not only from the easily accessible areas as the private dealers tend to do, but also from the less easily accessible areas where produce now tends to remain unsold.

(f) To provide such marketing services as storage and transport for which private traders do not have adequate finance.

However, one should not forget that a parastatal buying agency would also face several of the problems which now haunt private dealers. One may also wonder whether the long term business experience of private dealers can easily be substituted for a parastatal buying agency.

In the following, we shall examine the present level of government involvement in the marketing of basic foodstuffs in the Central Region. There are three main areas where the government is involved.

1. The Central Regional Food Distribution Corporation:

An instrument of Government involvement.

The Ghana Food Distribution Corporation (GFDC) was set up essentially to buy surplus foodstuffs which farmers were unable to dispose of, in the belief that if surplus could reach the main consuming centres, this might reduce prices. Another consideration was the alleged inefficiency of private intermediaries. The GFDC was created by merging the erstwhile 'Task Force' and the Ghana Food Marketing Corporation. Funds are supplied by the Exchequer.

One task that the present Government of Ghana charged the regional branches of the GFDC with was the supply of foodstuffs to educational institutions. This was done without finding out whether these institutions were really having problems with the supply of foodstuffs. The corporation also decided to embark upon nation-wide retailing of foodstuffs to the general public, this in consonance with the general assumption that food prices would be considerably lower, for the benefit especially of the low income group whose consumption pattern is mainly geared towards locally produced foodstuffs.

There is a general impression in the Central Region, however, that GFDC operation leaves much to be desired since it is not able, for example, to deliver regularly the quantities of produce required by some of the schools. The main reason here is the absence of an efficient organisation. The retailing agents of the corporation were also not satisfied with the organisation of the FDC, because it could not meet the supply requirements of the kiosks agents. The main problem facing the GFDC is that its objectives seem to be contradictory. On the one hand, it is expected to sell at prices lower than those quoted by private sellers; on the other hand, it is expected to break even. This confusion makes an ex-post evaluation very difficult. One is not sure which criteria to use as a basis for assessment. Without going too much into detail, we can say that the GFDC has not been able to achieve its principal objective, that is,



to beat down prices of basic foodstuffs. It is true that for certain food items its prices are relatively cheaper; however, the GFDC is not able to ensure regular or smooth supply of commodities even during the peak season, although the private sector is able to do so. Coupled with this, the corporation is not able to sell a variety of commodities to the public at the same time. The result is that would-be buyers refuse to waste their time going to the GFDC kiosks to buy only one or two food items even if prices are competitive.

It would appear that some of the GFDC managers have not really studied what marketing bottlenecks there are and derive lessons from that. Also some of them do not bother to go to the farms to make their purchases, but buy their produce from intermediaries. This is contrary to the GFDC objective, that is, to buy surplus foodstuffs from farmers, and creates rather than solves marketing problems. Apart from this main problem other problems facing the GFDC are the following:

(a) Inadequate finance characterises most state corporations such as the GFDC. In most cases, money does not reach the corporation in time for it to carry on with its normal business. Due to budgetary red-tapism, there is a tendency also for the amount earmarked for the corporation to be given out piecemeal. The effects of such a financial policy on the corporation are obvious.

(b) Transport and storage problems were not properly identified so the corporation has problems with these two facilities.

(c) Poor accounting practices as the result of the regional branch of the corporation not having had its own accountant for a very long time. Consequently, all the bills had to be sent to the head office for accounting purposes and this often made it difficult for the regional branch to keep abreast of its accounts.

(d) Lack of skill and expertise on the part of the GFDC personnel. This is not surprising since the former FDC was created mainly for the 'boys'. The present FDC inherited some of the former personnel who do not have adequate managerial skills.

(e) Wastage through pilfering consequent upon the lack of a control mechanism. Of late, the management has been able to tackle part of this problem by policing the movement of the flow of commodities.

(f) Too much ministerial interference due to the fact that the corporation falls under the orbit of the ministry of agriculture, which often is not able to decide what should be the major objective of the FDC vis-a-vis other corporations under the same ministry. We can mention here the constant strife between the Grains Board and the FDC since the former tends (within limits) to duplicate the efforts of the latter. A glaring example of wastage in the selling of grains by the Grains Board to the GFDC on a commission basis. It is not sure whether this arrangement took place because of the weakness of the GFDC as a marketing corporation or because the corporation was compelled to buy its grains from the Grains Board - an organisation which does not produce grains but sees principally to the accelerated improvement of grains by means of extension services.

(g) Too rapid an expansion of activities of the corporation which has tended to militate against efficiency. Over-enthusiasm in the expansion of its retail system lead to the closure of some of its kiosks just a few months after these had started to operate. Those manning the kiosks complained of irregular supply of produce. 23 This was so because when the FDC started selling produce to schools it was not simultaneously able to meet the supply of the retailers.

(h) The refusal of other government food production corporations to sell food to the GFDC. One would have thought that the Food Production Corporation, the Settlement Farms Division of the Ministry of Agriculture and the State Farms, would arrange to provide foodstuffs to the GFDC rather than selling their own produce. The refusal of these bodies to sell produce to the FDC might be due to the fact that these corporations could not afford selling their produce to the GFDC at depressed prices. Here again, is a case of non-harmonisation of objectives.

(i) Lack of aggressive advertising on the part of the corporation makes one wonder if it could in fact capture a sizeable part of the produce market. Given the performance of the GFDC and its related problems, it might be asked whether adequate preparations were made to justify its creation on social or economic grounds. It appears that the present reorganisation of the GFDC would make it possible to put it on an even level, once bottlenecks are removed. It may then be possible to justify its existence on both social and economic grounds.

## 2. Minimum Guaranteed Price: An Instrument of Government Involvement

The Government intends to involve itself in marketing by instituting minimum guaranteed prices for major staple foodstuffs. It has already done so for rice and maize. However, producers feel that the national price for such basic foodstuffs is not high enough to stimulate widespread adoption of newly proven yield-increasing varieties. Thus, the willingness to channel produce to government sponsored marketing channels is considerably reduced. A meaningful floor price of produce involving re-imburement of normal cost of production and a reasonable profit could go far to promote the production of foodstuffs. Some remarks with regard to guaranteed price system are presented here.

(a) As indicated before to maintain a regular domestic supply requires the re-imburement of the production cost per unit plus an element of profit to the producer. One could argue that such floor prices should be instituted for all the major foodstuffs. Both substitution and income effects (price effects) of such a scheme should be considered not only in the micro sense but also in terms of meso and macro general economic policy.

(b) Of course, the policy of setting a price involving the cost of production plus a reasonable profit should be strictly adhered to. It would no longer be beneficial if due to over-abundance of supply too low a guaranteed price for produce would be set. The benefit of

this would mainly accrue to urban consumers since they do not pay the real cost of produce. The demoralising effect on farmers income is apparent. In addition, this leads to the smuggling of produce across the boundaries of Ghana. Conversely, setting too high floor price leads to smuggling in of produce from the neighbouring countries.

(c) Setting too high a floor price should be prevented also in the interest of developing an agro-allied industry. As it is, the main processing industries in the region seem to have difficulty in surviving. On the other hand, depressing the floor price to the point where there is no longer re-imburement of production cost plus profit should not take place but rather a policy of subsidising such processing, agro industries should be preferable.

### 3. Buffer Stock Creation: A possible area for government intervention

In consonance with the determination and desire of the present Ghana Government to find solutions to the marketing problems, policy makers are also considering to build up buffer stock for basic foodstuffs. Essentially, the ideal behind a buffer stock mechanism is of course to absorb the impact of a possible disequilibrium of supply and demand of commodities. The disequilibrium occurs because of marked seasonality of production and often the smallest size of individual surpluses during the off-season period.

For the effective manipulation of a buffer stock system, there is the need for a commodity auction place where commodities are traded at prices established by an independent market authority. The auction places can be set up at the sub-district, district and regional levels. Individual traders can formulate tentative trading plans at the beginning of each market day on the previous day's market situation - stock holdings and given commodity rates of exchange. The plan of the independent buffer stock authority will consist of intermediaries based on well laid out decisions about quantities to be bought and sold for current consumption, quantities to be held in stock for future consumption. The releasing of future stocks should be done in such a way that it really reduces marked seasonality of supply. The estimates should be based on daily, weekly, monthly and if possible yearly stocks, flows and consumption for basic foodstuffs. We would like to mention that such a buffer stock mechanism should be limited to grains and tubers since other food items are highly perishable and cannot easily be subjected to such a scheme. The underlying characteristics of such a buffer stock mechanism should include an aggregate stock demand function, an aggregate flow demand function, an aggregate stock supply function and a balancing equation (confrontation between supply and demand).

## Chapter IV - Conclusions and Recommendations

The involvement of government in the marketing of basic foodstuffs is now limited, mainly because no systematic study has been made of the role which the government could play in solving some of the problems involved. The problems must be identified before policy measures to

solve them can be recommended. By and large, it is our opinion that policy instruments could be evolved in such a way that they do not add more problems to the existing ones. If such a well-planned approach is not adhered to, there is bound to be constant confusion as to what really constitutes the marketing bottleneck. We do not subscribe to the view that government intervention per se improves the marketing system. In certain areas of marketing, for example marketing of products which have external or international markets, government intervention is undoubtedly advantageous to producers and also to the national economy as a whole. As is well known, the marketing of cocoa and cocoa products represents about 60 percent of the export earnings of the country. This is wholly in the hands of the Cocoa Marketing Board, a government-sponsored organisation. This is an area where government intervention has proven very useful from both social and economic points of view. It may be in the interests of other state marketing corporations to base their management practices on those of the Cocoa Marketing Board. The need to encourage producer-sellers to set up their own marketing cooperative cannot be underrated. Such cooperatives will enable them to embark upon grading and standardisation and should facilitate acquiring capital. This is an area where the extension department of the Ministry of Agriculture - The Agricultural Development Bank, The Investment Bank and other commercial banks can render help. As we have already mentioned the main corporation dealing with the marketing of basic foodstuff is the Ghana Food Distribution Corporation. Of late the change of management and its present policy might tend to improve its overall efficiency. We shall here recommend that the objective of the corporation vis-a-vis the Grains Board and other parastatal Food Producing Agencies should be dovetailed. The present situation in which some roles of the Food Distribution Corporation are duplicated by other agencies should be prevented because it does present waste of scarce resources.

Advertising the goods of the corporation should be pursued if the corporation wants to capture a sizable part of the market. Another way of increasing the extent of its market, is by embarking upon door to door delivery of commodities. This is something which is not pursued on a large scale even by private traders. The range of choice of commodities should be increased since it will make it more attractive for potential buyers. To achieve the above objective, the irregular supply problem can be partially solved by entering into a buying-arrangement with farmers. We see no reason why the corporation should not be able to buy foodstuffs at the farm gates. After all that is one of the major reasons behind the setting up of the GFDC. Ghanaian farmers do tend to react to prices and so where there are ready marketing outlets, their supply responses will increase positively. We can here mention the case of cocoa, lime and tobacco as shining examples.

In the light of our findings we recommend that the regional branches of the Food Distribution Corporation should be strengthened by making them semi autonomous entities. This will entail decentralisation of decision making at the head office of the corporation and thus improve efficiency. For example, the regional branch of the corporation should be able to determine the prices of various articles without getting the approval of the head office.

It should be given its own vehicles instead of relying on those from the head office.

The Central Regional Food Board which was set up three years ago should be reactivated as the main policy-making body for the regional branch of the corporation. Feasible solutions recommended by the Board should not be sent to the head office of the GFDC for approval since this causes enormous delay. In this respect, the GFDC can become the pace setter for the decentralisation of the decision-making process being advocated in Ghana.

The corporation should endeavour to undertake an ex-post appraisal of its efforts. In order to do this, the objectives and means of the corporation should be well spelt out. As pointed out in the text if the corporation is to break even then there should be less interference from outside with respect to its daily running.

Another area where government could be of immense help would be that of meaningful guaranteed prices. With the exception of rice and maize, minimum guaranteed prices have not been set, nor is there an effective government agency to see that a price policy is rigorously adhered to. The ineffectiveness of the Prices and Incomes Board to control prices is due to the fact that where rampant shortages of certain commodities do occur, it is very difficult to control prices. On the other hand, unscrupulous middlemen in buying produce from farmers tend to misuse the term guaranteed minimum price to mean maximum guaranteed price. This is possible because the concept has not been adequately explained to the general public. We recommend that before a guaranteed price policy is embarked upon on a national basis for all crops, detailed cost benefit studies of the production of all agricultural produce should be made. Moreover, not only the micro-effect of such a measure should be studied but also the overall impact of such a policy on macro-economic objectives should be well analysed at the regional and national levels. Otherwise attempted solutions to marketing problems might tend to exacerbate existing ones.

Further an area where government intervention could create orderly marketing would be the manipulation of prices by applying the mechanism of buffer stock. Suffice it to say that before the setting up of such a scheme, thorough studies on stock (demand and supply) functions and flow functions of the crops earmarked for buffer should be carried out. This will enable policy makers to keep control of the desirable stock level and will reduce waste in setting up unwarranted storage space. Buffer stocks should be set up at all the major consuming centres. To start with, it can be done on regional basis and later followed up on district and sub-district levels.

We maintain that solutions to the marketing problems do not necessarily mean that intermediaries should be displaced by substituting government buying agencies. Conditions in the Central Region, especially in Cape Coast, are such that the role of intermediaries is not necessarily wasteful. Moreover, no other employment opportunities would be available for the redundant intermediaries. If one would nonetheless argue that the intermediaries should be displaced, then one would have to face the problem of sustaining them somehow, though not at the expense of the low income group. A solution to the problem of keeping down prices would be to increase the volume of production and or to improve the efficiency of the marketing system. The latter can only be achieved after we have studied factors which impede the smooth flow of goods.

In analysing the foodstuff marketing system in the Central Region of Ghana, we concluded that the flow of commodities is normally influenced by such factors as rain, drought and harvest, and much less by the institutions which handle the flow. This may be otherwise in other regions of course. Our main argument is that the institution of commodity queenship does not as such prevent the smooth flow of goods. Indeed, the queens are not really able to regulate the flow and prices of goods because there are no binding agreements between them and other intermediaries. It appears that there is no deliberate policy to create an oligopoly. In fact, the foodstuff market is highly competitive. This does not mean that there is no element of waste in the marketing system.

Further deficiencies in the marketing of basic foodstuffs can be attributed to the lack of adequate storage facilities, and of inadequate transportation in certain areas, to the perishable nature of the crops, and to the absence of economies of scale. Some of these problems can be counteracted by advancing bank loans to intermediaries in order to enable them to set up their own services. Further, government involvement with respect to storage and transportation facilities could be realised by establishing these facilities where they are lacking and renting them out to private traders. We would like to be cautious about this.

In principle, a good way to preserve perishable food is by canning, especially where there are insufficient modern refrigerators for storing food on a large scale. In some cases, it might be possible to set up canning means by quasi-government organisations which in turn will hire these facilities out to producers or wholesalers and retailers. But the economics of it need to be studied before such recommendations can be made. Moreover, as stated earlier part of the storage-cum-canning problems could be taken care of if housewives were taught simple methods of preserving food. This presupposes that simple canning materials like bottles and vinegar should be available. Also the underutilised capacities of existing processing plants should be fully used.

There is another area which merits attention - the role of insurance companies in the marketing of foodstuffs. The absence of economies of scale in foodstuff marketing can be partially attributed to risk. If insurance companies (private or public) were to cover some of the risks, this might offset the present piecemeal way of distributing and marketing foodstuffs.

In conclusion, we may add that in a country like Ghana, where average household expenditure on food (60%) is high, modest improvement in the efficiency of food distribution and marketing will bring about large gains in real income to both producer and consumer. In the case of the consumers, a reduction in food prices can free part of their food expenditure for other purposes. An effective marketing system will enable the farmer to increase his income (output). Intermediaries may also benefit from an effective marketing system since it will encourage the provision of storage and transportation facilities. It will also enable them to compute, a priori, their profit margin, and this will reduce the risk of dealers. If the distribution process falters, the whole development effort will not achieve its optimum objective. <sup>24</sup>

We hope that policy makers and regional planners concerned with the development of the Central Region may derive some benefit from this analysis.

Footnotes

1. Based on the study of the trend of prices conducted by the author.
2. David Dunham: 'Marketing in Southern Ghana: Towards A Planning Typology'. Institute of Social Studies, The Hague, Occasional Paper No. 47, November 1974.
3. Cape Coast is a medium size city. It differs from other large cities in Ghana like Accra-Tema, Kumasi and Sekondi-Takoradi in its economic growth, unemployment, age composition etc. In 1948, the population was 23,346. This figure grew to 51,764 in 1970. So within 22 years, the population of the town more than doubled. This is based on the Socio-Economic Survey of Cape Coast conducted by J. Hinderink and T. Sterkenburg, University of Utrecht in 1971.
4. Some of these crops, for example lime, were planted on a large-scale in Mouri (Central Region) as long ago as 1700. See A Historical Geography of Ghana by K.B. Dickson, p.76, Cambridge University, Mass. 1971.
5. E. Amonoo, 'The Production, Distribution and Marketing of Rice in the Bolgatanga District. (Upper Region, Ghana)'. University of Cape Coast, Centre For Development Studies, Research Report Series Paper No.8 Cape Coast 1972. See the studies on 'The Flow and Marketing of Agricultural Produce in the Central Region With Special Reference to Cape Coast', C.D.S. Research Report Series Paper No.15, and Paper No.9. 'Further Confidential Papers on the Ghana Food Distribution Corporation'.
6. Richard R. Still and Edward W. Cundiff, Essentials of Marketing. Prentice Hall, Inc., Englewood Cliffs, 1966, p.5.
7. The queen of a product is the head of the sellers of that commodity and it is assumed that she takes part in price setting.
8. The detailed results of each regression analysis can be found on pp.47-55 and the relevant appendices on produce matrices in E. Amonoo, The Flow and Marketing of Agricultural Produce in The Central Region with Special Reference to Cape Coast, C.D.S. Research Report Series Paper No. 15, Cape Coast, 1974, p.47.
9. Significant only at 0.10 level.
10. Ibidem.
11. Ibidem.
12. E. Amonoo, The Flow and Marketing of Cassava in the Central Region with Special Reference to Cape Coast, C.D.S. Research Report Series Paper No.9, page 13, Cape Coast, Ghana 1972.

13. Those who are interested in other approaches should read Polly Hill, 'Markets in Africa', *Journal of Modern African Studies*, 1 (1963), p.451. Also the work of V.K. Nyanteng and G. van Apeldoorn, 'The Farmer and the Marketing of Foodstuffs', *Technical Publications Series, No.19, I.S.S.E.R., University of Ghana, 1971*, and David Dunham, 'Marketing in S. Ghana'.
14. Amonoo, 'The Flow and Marketing of Agricultural Produce', Tables 12A and 12B, p.58.
15. E. Amonoo, 'The Production, Distribution and Marketing of Rice in the Bolgatanga District'. Centre for Development Studies, *Research Report Series, Paper No.8, 1972*.
16. Amonoo, 'The Flow and Marketing of Cassava', *op.cit.*, p.27.
17. In the Somanya District of the Eastern Region, the percentage is between 20-30. See 'Focus and Concentrate Programme in the Somanya District', *Research Report Series Paper No.14, 1974*, p.48 by E. Amono and E. Dumor.
18. *Ibidem*, p.20.
19. E. Amonoo, 'The Flow and Marketing of Agricultural Produce', p.73.
20. E. Dumor and E. Amonoo, 'The Focus and Concentrate Programme in the Somanya District', *Research Report Series Paper No.14, University of Cape Coast 1973* pp. 54-55.
21. See appendix table 1-5. Source of computations based on the price information obtained from the Ministry of Agriculture, Cape Coast, Ghana.
22. Based on the wholesale and retail price data (1970-1972) supplied by the Economics and Marketing Division of the Ministry of Agriculture, Accra. Further see appendix table 6-13.
23. Unpublished report on the study of retailing conducted by the author on behalf of the Central Regional Food Board (1972).
24. *Ibidem*, p.89.



TABLE 1

Wholesale and Retail Prices Maize Cape Coast Market (Urban) 1970-1971

Months	Wholesale		Retail	
	Unit of Sale	Price in Cedis	Unit of Sale	Price in Cedis
June 1970	220 lbs	14.06	35 lbs	2.31
July "	"	14.33	"	2.40
Aug. "	"	10.07	"	1.82
Sep. "	"	7.76	"	1.55
Oct. "	"	10.12	"	1.80
Nov. "	"	11.90	"	2.85
Dec. "	"	11.82	"	2.02
Jan. 1971	"	11.68	"	1.98
Feb. "	"	11.98	"	2.20
Mar. "	"	12.40	"	2.15
Apr. "	"	14.74	"	2.58
May "	"	15.38	"	2.55
June "	"	15.85	"	2.65
July "	"	15.68	"	2.88
Aug. "	"	9.49	"	1.73
	<b>Total</b>	<b>187.26</b>	<b>Total</b>	<b>33.47</b>
	<b>Mean</b>	<b>12.48</b>	<b>Mean</b>	<b>2.23</b>
	<b>S.D.</b>	<b>2.39</b>	<b>S.D.</b>	<b>0.40</b>
	$\sigma^2$	<b>5.68</b>	$\sigma^2$	<b>0.16</b>

Computations based on Price Data for the Central Region supplied by the Ministry of Agriculture

TABLE 2

**Wholesale and Retail Prices of Maize Assin Praso Rural Market  
1970-1971**

Months	Unit of Sale	Price in Cedis	Unit of Sale	Price in Cedis
June 1970	220 lbs	17.33	35 lbs	2.90
July "	"	13.75	"	2.30
Aug. "	"	11.25	"	1.85
Sept. "	"	8.75	"	1.48
Oct. "	"	10.20	"	1.72
Nov. "	"	14.88	"	2.48
Dec. "	"	13.45	"	2.25
Jan. 1971	"	13.00	"	2.23
Feb. "	"	13.80	"	2.33
Mar. "	"	14.40	"	2.40
Apr. "	"	19.00	"	3.20
May "	"	19.00	"	3.40
June "	"	-	"	-
July "	"	-	"	-
Aug. "	"	8.67	"	1.73
	<b>Total</b>	<b>177.48</b>		<b>30.27</b>
	<b>Mean</b>	<b>13.65</b>		<b>2.33</b>
	<b>S.D.</b>	<b>3.28</b>		<b>0.54</b>
	$\sigma^2$	<b>10.76</b>		<b>0.30</b>

TABLE 3

Wholesale And Retail Prices of Maize Assin Foso Rural Market 1970-1971

Months	Wholesale		Retail	
	Unit of Sale	Price in Cedis	Unit of Sale	Price in Cedis
June 1970	220 lbs	-	35 lbs	3.00
July "	"	12.00	"	2.00
Aug. "	"	12.00	"	2.00
Sep. "	"	7.07	"	1.43
Oct. "	"	13.60	"	1.97
Nov. "	"	12.00	"	2.00
Dec. "	"	12.00	"	2.00
Jan. 1971	"	13.20	"	2.20
Feb. "	"	13.75	"	2.25
Mar. "	"	13.70	"	2.28
Apr. "	"	13.63	"	3.25
May "	"	-	"	3.60
June "	"	14.00	"	3.00
July "	"	-	"	-
Aug. "	"	6.00	"	2.30
	<b>Total</b>	<b>142.95</b>		<b>33.28</b>
	<b>Mean</b>	<b>11.91</b>		<b>2.37</b>
	<b>S.D.</b>	<b>2.5</b>		<b>0.57</b>
	<b><math>\sigma^2</math></b>	<b>6.40</b>		<b>0.33</b>

TABLE 4

Wholesale and Retail Prices of Plantain Cape Coast (Urban) 1970-1971

Months	Wholesale		Retail	
	Unit of Sale	Price in Cedis	Unit of Sale	Price in Cedis
June 1970	20-25 lbs	0.48	No at 5 p	2
July "	"	0.61	"	2
Aug. "	"	0.61	"	2
Sep. "	"	0.54	"	2
Oct. "	"	0.45	"	2
Nov. "	"	0.45	"	3
Dec. "	"	0.45	"	2
Jan. 1971	"	0.50	"	2
Feb. "	"	0.48	"	2
Mar. "	"	0.53	"	2
Apr. "	"	0.50	"	2
May "	"	0.59	"	2
June "	"	1.03	"	1
July "	"	1.10	"	1
Aug. "	"	1.00	"	1
	<b>Total</b>	<b>9.32</b>		<b>28</b>
	<b>Mean</b>	<b>0.62</b>		<b>1.86</b>
	<b>S.D.</b>	<b>0.22</b>		<b>0.50</b>
	<b><math>\sigma^2</math></b>	<b>0.05</b>		<b>0.25</b>

TABLE 5

Wholesale and Retail Prices of Plantain Mankesim (Rural) 1970-1971

Months	Wholesale		Retail	
	Unit of Sale	Price in Cedis	Unit of Sale	Price in Cedis
June 1970	20-25 lbs	0.50	No at 5 p	2
July "	"	0.71	"	1
Aug. "	"	0.68	"	2
Sep. "	"	0.56	"	2
Oct. "	"	0.46	"	2
Nov. "	"	0.44	"	2
Dec. "	"	0.47	"	3
Jan. 1971	"	0.53	"	2
Feb. "	"	0.50	"	2
Mar. "	"	0.46	"	2
Apr. "	"	0.61	"	2
May "	"	0.73	"	1
June "	"	1.08	"	1
July "	"	1.25	"	1
Aug. "	"	1.08	"	1
	<b>Total</b>	<b>10.06</b>		<b>26</b>
	<b>Mean</b>	<b>0.67</b>		<b>1.73</b>
	<b>S.D.</b>	<b>0.26</b>		<b>0.57</b>
	$\sigma^2$	<b>0.07</b>		<b>0.33</b>

TABLE 6

## Wholesale Price For Maize - Sekosua Market (Rural) 1971-1972

Months	Units	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	230 lb wt	12.60	13.00	13.60	14.00	-	53.20	13.30	0.54
December 1971	"	14.00	14.60	-	16.00	17.00	61.60	15.40	1.38
January 1972	"	17.00	19.00	19.00	16.40	-	71.40	17.85	1.17
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	19.00	20.00	21.00	21.00	22.00	103.00	20.60	1.01
April 1972	"	22.00	24.00	23.00	-	-	69.00	23.00	0.81
May 1972	"	24.00	24.00	24.00	28.00	-	100.00	25.00	1.73
June 1972	"	27.00	30.00	22.00	24.00	21.00	124.00	24.80	3.31
July 1972	"	17.00	16.00	14.00	12.00	-	59.00	14.75	1.92
August 1972	"	15.00	12.00	12.00	11.00	-	50.00	12.50	1.50
September	"	11.50	11.00	11.00	13.00	13.60	60.10	12.02	1.07
Total	"	179.10	183.60	159.60	155.40	73.60	751.30	178.42	
Mean	"	17.91	18.36	17.33	17.26	18.40	75.13	17.84	
S.D.		4.8	5.8	4.7	5.5	3.3	23.69	4.71	
$\sigma^2$		23.24	34.53	22.97	30.31	11.18	561.66		

Values in Cedis, Computation based on Price Data for the Somanya District, Eastern Region (Ghana). Supplied by the Ministry of Agriculture.

TABLE 7

Wholesale Price For Maize Agomanya Market (Urban) 1971-1972

Months	Units	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	230 lb	13.00	13.60	13.60	14.00	-	54.20	13.55	0.03
December 1971	" wt	15.00	15.00	15.00	15.00	16.00	76.00	15.20	0.48
January 1972	"	16.00	18.00	17.00	17.00	-	68.00	17.00	0.70
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	19.00	21.00	22.00	22.00	22.00	106.00	21.20	1.16
April 1972	"	24.00	25.00	26.00	26.00	-	101.00	25.25	0.83
May 1972	"	24.00	24.00	26.00	26.00	-	100.00	25.00	1.00
June 1972	"	29.00	31.00	26.00	24.00	20.00	130.00	26.00	3.84
July 1972	"	18.00	18.00	15.00	12.00	-	63.00	15.75	2.48
August 1972	"	14.00	13.00	12.00	12.00	12.00	63.00	12.60	0.80
September 1972	"	11.00	12.00	-	12.00	12.00	47.00	11.75	0.43
Total	"	183.00	190.60	172.60	180.00	82.00	808.20	183.30	
Mean	"	18.30	19.06	19.18	18.00	16.40	80.82	18.33	
S.D.	"	5.4	5.8	5.4	5.6	4.0	25.50	5.26	
$\sigma^2$	"	29.61	34.11	29.17	31.40	16.64	650.29		

Value in Cedis.

TABLE 8

Retail Price Maize Sekosua Market (Rural) 1971-1972

Months	Units	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	35 lb	2.40	2.60	2.80	2.80	-	10.60	2.65	0.17
December 1971	wt "	2.80	3.00	-	2.80	3.00	11.60	2.90	0.11
January 1972	"	3.00	2.80	3.00	2.60	-	11.40	2.85	0.17
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	3.40	3.60	3.80	3.80	4.00	18.60	3.72	0.22
April 1972	"	4.00	4.50	4.00	-	-	12.50	4.16	0.22
May 1972	"	4.00	4.30	4.60	4.40	-	17.30	4.32	0.22
June 1972	"	4.80	5.40	4.00	4.60	4.00	22.80	4.56	0.52
July 1972	"	3.00	3.00	2.80	2.60	-	11.40	2.85	0.17
August 1972	"	3.00	2.40	2.40	2.00	-	9.80	2.45	0.36
September 1972	"	2.40	2.00	2.00	2.40	2.60	11.40	2.28	0.24
Total	"	32.80	33.60	29.40	28.00	13.60	137.40	32.74	
Mean	"	3.28	3.36	3.26	3.11	3.40	13.74	3.27	
S.D.	"	0.73	1.01	0.81	0.87	0.61	4.07	0.79	
$\sigma^2$	"	0.54	1.04	0.66	0.76	0.38	16.63		

Value in Cedis.



TABLE 9

## Retail Price Maize Agomanya Market (Urban) 1971-1972

Months	Units	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	35 lb wt	2.20	2.50	2.50	2.60	-	9.80	2.45	0.14
December 1971	"	2.60	3.00	3.00	3.00	3.00	14.60	2.92	0.17
January 1972	"	3.80	3.80	3.80	3.20	-	14.60	3.65	0.26
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	3.20	2.80	4.00	4.00	4.00	18.00	3.66	0.48
April 1972	"	4.00	4.00	5.00	5.00	-	18.00	4.50	0.5
May 1972	"	4.80	2.40	4.80	5.00	-	17.00	4.25	1.07
June 1972	"	5.00	5.40	4.50	4.60	4.00	23.50	4.70	0.46
July 1972	"	4.00	4.00	3.20	2.50	-	13.70	3.42	0.62
August 1972	"	2.40	2.40	2.00	2.00	-	8.80	2.20	0.20
September 1972	"	2.20	2.00	-	2.00	1.80	8.00	2.00	0.14
Total	"	34.20	32.30	32.80	33.90	12.80	146.00	33.75	
Mean	"	3.42	3.23	3.64	3.39	3.20	14.60	3.37	
S.D.	"	1.00	0.99	0.97	1.11	0.90	4.57		
$\sigma^2$	"	1.00	0.99	0.96	1.25	0.82	20.91		

Value in Cedis.

TABLE 10

## Wholesale Price for Plantain Sekosua Market (Rural) 1971-1972

Months	Units	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	Av. bunch 20-25 lbs	0.55	0.45	0.40	0.40	-	1.80	0.45	0.00
December 1971	"	0.40	0.35	-	0.35	0.40	1.55	0.38	0.00
January 1972	"	0.40	0.35	0.40	0.40	-	1.55	0.38	0.00
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	0.40	0.40	0.50	0.55	0.50	2.35	0.47	0.00
April 1972	"	0.60	0.55	0.60	0.60	-	2.35	0.58	0.00
May 1972	"	0.50	0.60	0.65	0.60	-	2.35	0.58	0.00
June 1972	"	0.60	0.80	0.75	0.80	0.70	3.65	0.73	0.00
July 1972	"	0.80	0.70	0.60	0.60	-	2.70	0.67	0.10
August 1972	"	0.60	0.55	0.50	0.50	-	2.15	0.53	0.10
September 1972	"	0.50	0.50	0.45	0.50	0.45	2.40	0.48	0.00
Total	"	5.53	5.30	4.85	5.30	0.90	22.85	5.25	
Mean	"	0.53	0.53	0.53	0.53	0.45	2.85	0.52	
S.D.	"	0.14	0.10	0.10	0.10	0.00	0.57		
$\sigma^2$	"	0.02	0.01	0.01	0.01	0.00			

Value in Cedis.

TABLE 11

## Wholesale Price For Plantain Agomanya Market (Urban) 1971-1972)

Months	Unit	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	Av. bunch 20-25 lbs	0.80	0.70	0.80	0.70	-	3.00	0.75	0.00
December 1971	"	0.60	0.70	0.65	0.60	0.65	3.20	0.64	0.10
January 1972	"	0.80	0.75	0.65	0.65	-	2.85	0.71	0.10
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	0.60	0.60	0.65	0.65	0.70	3.20	0.64	0.10
April 1972	"	0.70	-	0.75	0.75	-	2.20	0.73	0.00
May 1972	"	0.80	0.85	-	1.60	-	3.25	1.08	0.36
June 1972	"	1.50	1.60	2.00	2.00	1.80	8.90	1.78	0.22
July 1972	"	1.50	1.50	1.40	1.20	-	5.60	1.40	0.10
August 1972	"	1.60	1.40	1.50	1.40	-	5.90	1.47	0.10
September 1972	"	1.40	1.70	-	1.50	1.40	6.00	1.50	0.10
Total	"	10.30	9.80	8.40	11.05	4.55	44.10	10.79	
Mean	"	1.03	1.08	1.05	1.10	1.13	4.41	1.07	
S.D.	"	0.38	0.42	0.47	0.46	0.47	1.99	0.41	
$\sigma^2$	"	0.15	0.18	0.23	0.22	0.23	3.99	0.17	

Value in Cedis.

TABLE 12

Retail Price Plantain Sekosua (Rural) 1971-1972 --

Months	Unit	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	Av. bunch No. at 5p	2	3	3	2	-	10.00	2.50	0.50
December 1971	"	2	2	-	3	3	10.00	2.50	0.50
January 1972	"	3	2	2	2	-	9.00	2.25	0.43
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	2	2	2	2	2	10.00	2.00	0.00
April 1972	"	2	2	2	1	-	7.00	1.75	0.43
May 1972	"	1	1	1	1	-	4.00	1.00	0.00
June 1972	"	1	1	1	1	1	5.00	1.00	0.00
July 1972	"	1	1	1	1	-	4.00	1.00	0.00
August 1972	"	1	1	1	1	1	4.00	1.00	0.00
September 1972	"	1	1	1	1	1	5.00	1.00	
Total	"	16.00	16.00	14.00	15.00	7	68.00	16.00	
Mean	"	1.60	1.60	1.55	1.50	1.75	6.8	1.60	
S.D.	"	0.66	0.66	0.68	0.67	0.83	2.56	0.63	
?	"	0.44	0.44	0.47	0.45	0.69	6.56	0.40	

TABLE 13

Retail Price Plantain Agomanya (Urban) 1971-1972

Months	Unit	Week 1	Week 2	Week 3	Week 4	Week 5	Total	Mean	S.D.
November 1971	No. $\bar{a}$ 5p	2	2	2	2	-	8.00	2.00	0.00
December 1971	"	3	2	3	2	2	12.00	2.40	0.48
January 1972	"	3	2	2	3	-	10.00	2.50	0.50
February 1972	"	-	-	-	-	-	-	-	-
March 1972	"	2	3	2	2	2	11.00	2.20	0.40
April 1972	"	2	1	2	2	-	7.00	1.75	0.43
May 1972	"	2	1	1	1	-	5.00	1.25	0.43
June 1972	"	1	1	1	1	1	5.00	1.00	0.00
July 1972	"	1	1	1	2	-	5.00	1.25	0.43
August 1972	"	1	1	1	1	-	4.00	1.00	0.00
September 1972	"	-	2	1	1	-	4.00	1.33	0.47
Total	"	17.00	16.00	16.00	17.00	5.00	71.00	16.68	
Mean	"	1.88	1.60	1.60	1.70	1.66	7.10	1.66	
S.D.	"	0.74	0.66	0.66	0.64	0.47	2.84	0.54	
$\sigma^2$	"	0.55	0.44	0.44	0.44	0.23	8.09	0.30	

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