MARKETING ARRANGEMENTS AND THE DEMAND FOR BEEF IN GUYANA

J. Dukhia
(Lecturer, University of Guyana, Guyana)

Introduction

Throughout the Caribbean there has been continuing discussion on the very important subject of import substitution and the achievement of higher levels of agricultural self-sufficiency. It is no surprise that the theme of this conference is *Maximizing Regional Self-Sufficiency in Food in the Commonwealth Caribbean.*

In Guyana, Government has embarked on a policy of agricultural self-sufficiency by 1976. "Feeding Ourselves" has become a common parlance in the national vocabulary. It seems, however, that we should not only be thinking of agricultural self-sufficiency in quantitative terms but also in qualitative terms. In other words the food consumed by the population must conform to certain minimum nutritional requirements.

A comparison of per caput consumption of meat and meat products between Guyana and, what is generally referred to as the more developed CARICOM countries is presented in the following table for the year, 1967, a year for which comparable statistics were readily available. The table clearly demonstrates that Guyana has the lowest per capita consumption of meat among these countries. This is rather paradoxical since it is generally argued that Guyana has the potential of being the food basket of the Caribbean.

Table 1. Per Caput Disappearance of Meat for the More Developed CARICOM Countries for 1967.

	Trinidad	Barbados	Jamaica	Guyana
	(pounds)			
Beef and Veal	8.86	18.12	17.05	15.23
Pork and Pork products	9.81	25.01	6.39	4.97
Lamb	1.16	2.57	3.67	0.36
Poultry	22.54	21.55	14.52	8.52
	42.42	67.25	41.63	28.08

Source: Mayers, J.M. *Meat Production and Consumption Statistics of the Commonwealth Caribbean*, Occasional Series No. 5, Dept. of Agric. Econ. & Farm Management, U.W.I., St. Augustine, Trinidad.

The National Food and Nutrition Survey of Guyana[1] undertaken in 1971 reveals that the protein intake of 39 per cent of the population was inadequate, while for 19 per cent, it was on the border line. (See Diagram 1 in the Appendix.) It is not difficult to appreciate therefore that the survey recommended - *"To focus particular attention on the expansion of production and distribution of sheep and goats, and fishery resources so as to upgrade the quality of national protein supplies".*

Given the low per caput consumption of meat and meat products, the inadequate protein intake of more than half the population, and the phenomenally high prices of meat, what stronger justification can there be for an expanded and more viable livestock sector. With this as the background, the objective of this paper is to discuss the marketing arrangements for beef; to analyse the demand for beef in Guyana and to provide a comprehensive range of statistics relating to per caput disappearance of various types of meat, the prices of meat, and other related economic variables. These are found in the Statistical Appendix. The final section attempts to indicate some policy implications that derive from the demand study. These are merely initial considerations and serve only to indicate the scope of, and the gains to be realised from, an expanded beef sector.

The Beef Marketing System

In analysing the demand for any product it is necessary that we understand the characteristics and goals of the marketing system. According to Bressler and King [2] the direct and fundamental goals for the marketing system are:-

(i) to provide efficient and economical services and ownership transfers in the movement of commodities from producer to consumer; and

(ii) to provide an effective and efficient price making mechanism.

Only in so far that the prices that are established through the marketing system transmit the demands of consumers back to producers and transmit the supply conditions forward to consumers with a minimum of lags, imperfections, and distortions, can the economy achieve the efficient allocation and the economical use of resources in satisfying wants.

The structure of the marketing system will determine which factors should be used as instruments to balance supply and demand. For instance when consumers'demand is price-inelastic, there is less need to use price as a marketing instrument as compared with a price elastic consumer demand. In the former situation, product development and promotion might become more important in the marketing plan.

The following diagram attempts to show the marketing arrangements for beef in Guyana and the following section gives a brief assessment of the marketing system in terms of the goals and characteristics of the system.

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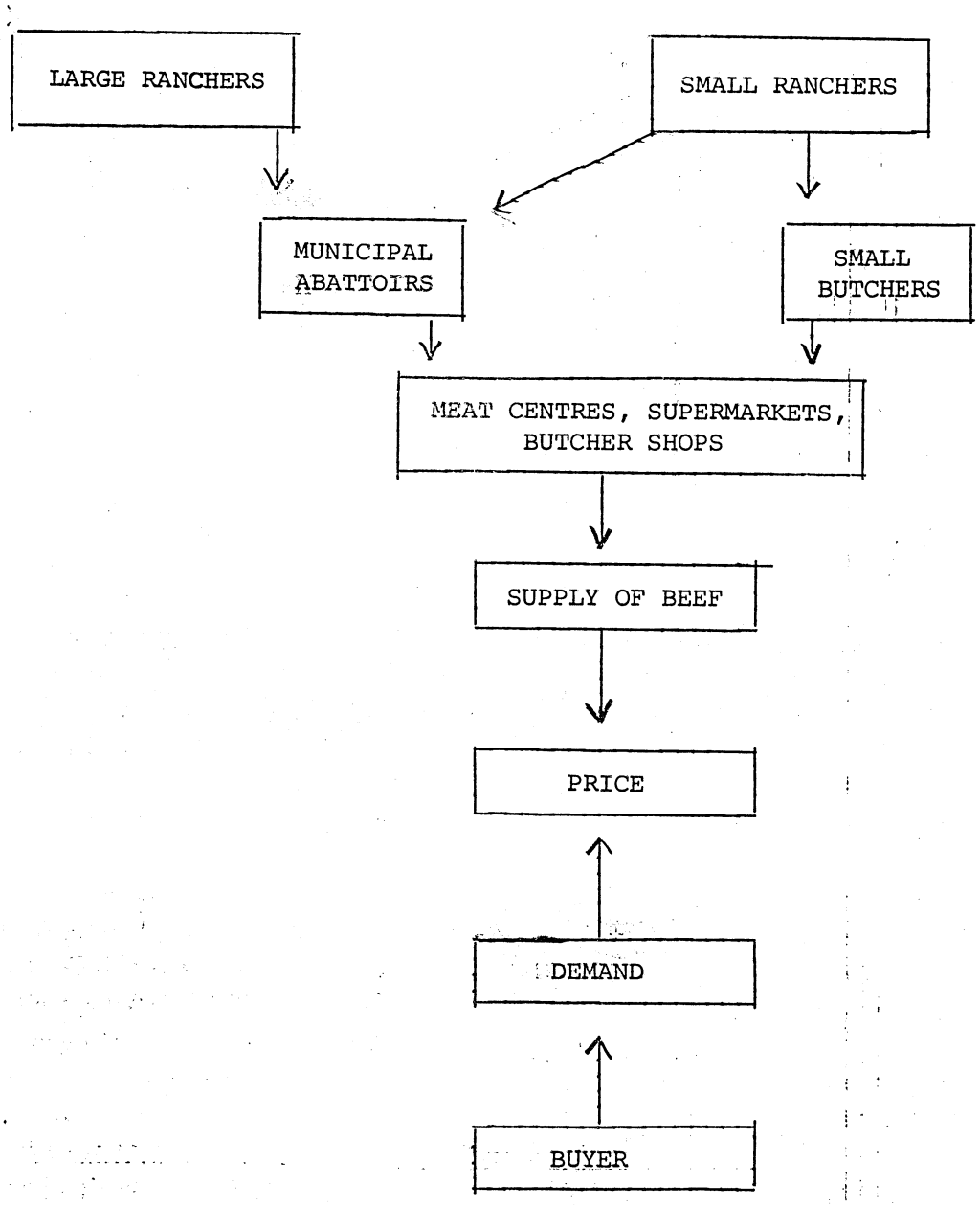
[1] The National Population Nutrition Survey of Guyana took place in 1971 through the collaborative efforts of the Government of Guyana, and the Caribbean Food and Nutrition Institute.

Figure 1. Representation of the Beef Marketing System



The greater majority of animals are slaughtered at the established abattoirs located in Georgetown, Lethem and New Amsterdam. As a result of this it is not too difficult to obtain data on the weights of officially slaughtered animals. These are collected on a weekly basis by the Ministry of Agriculture and then aggregated. However, for the dressed carcass weights of unofficially slaughtered animals, it is more difficult to obtain data as these operations are scattered throughout the rural areas and accurate records are not kept. As a result, it was necessary to make estimates for these (see Appendix for method of estimation).

The distribution centres for meat consist of the meat centres, the supermarkets, and what are generally called the 'Butcher Shops'. The largest retail outlets are the 'Butcher Shops' which are primarily located in the municipal markets. Generally, sanitary conditions and methods of meat handling are far from desirable. To quote from the Elmer's Report:

> *"A review of the report will show that currently the Meat Industry in Guyana is in its infancy. Livestock is slaughtered and the carcasses passed into trade channels for sale as fresh meat. Methods, tools, and techniques are primitive. There is a minimum of meat processing and this is done in a very crude manner. The industry standards of sanitation and disease inspection is totally inadequate."*

It seems that the primary objective of the beef marketing system in Guyana ought to provide consumers with a regular supply of high quality beef at reasonable prices while at the same time making production sufficiently attractive so that producers will be willing to expand. Important elements of the system's environment would constitute consumers, competitors, marketing channels, laws, regulations, and their impact on retail prices. For example, in Guyana one would like to quantify the impact of the recent legislation dealing with slaughter on the present retail prices of beef. The resources of a marketing system to be used in order to realise a particular goal are product, price, promotion, and distribution. For that reason, it is important to understand how price interferes with product, promotion, and quality. Finally, the management of the marketing system is crucial. It calls for formal structures in which farmers, the processing industry, and the marketing firms must of necessity cooperate. This has been sadly lacking in Guyana with respect to the beef sector.

The present beef marketing system in Guyana has not performed well. Performance of the marketing system may be evaluated by such criteria as:

(i) how well has it satisfied consumer wants;
(ii) level of profits;
(iii) efficiency of resource use;
(iv) improvements or innovations adopted; and
(v) industry growth.

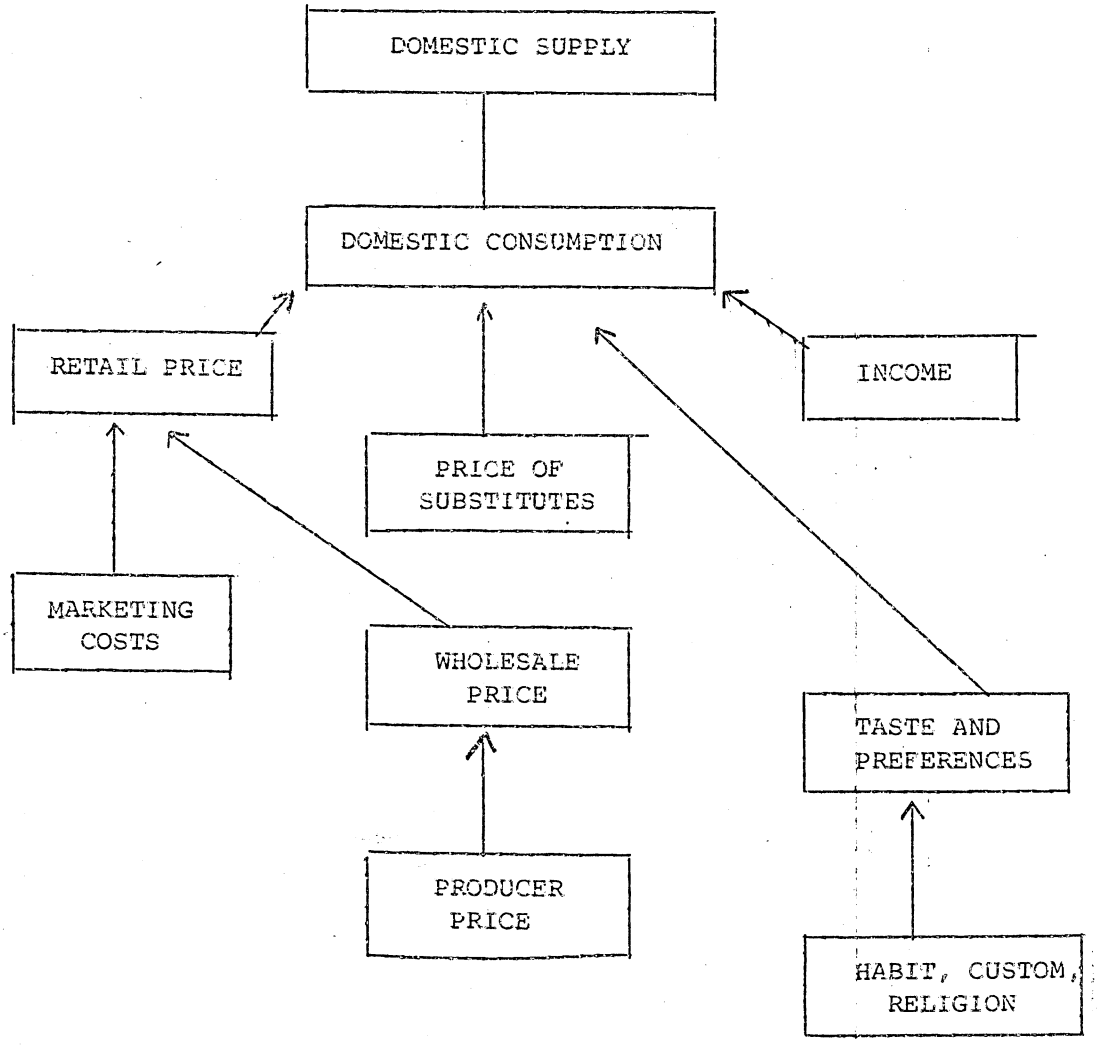
The present marketing system appears to have scored rather low on many of these criteria. Consumers have wanted larger quantities of meat but this has not been conveyed back to the production level. Some consumers would prefer better cuts of meat but these are not generally available especially in the rural areas. The industry has been very static in both new techniques and production despite rapid changes in other meats (e.g. pork and poultry).

The Demand for Beef in Guyana

The aim of this section of the paper is to analyse the factors which influence the demand for beef in Guyana. The following diagram attempts to show the main functional relationships between the consumption of beef and other economic variables.

As indicated in the diagram the retail price of beef influences the consumption of beef. Variables that relate to the general economy such as prices and quantities of competing meats, and tastes and preferences are independent of the "beef economy". Changes in these external or exogenous

Figure 2. Main Functional Relationships between the Consumption of Beef and Other Economic Variables.



variables, however, affect changes in the consumption of beef. A study of current or projected behaviour of prices and consumption of beef necessitates that estimates be made of the exogenous variable.

Economic theory suggests that the demand for a commodity will be some function of the price of the commodity; consumers' incomes; the prices of competing or complementary goods and the tastes and preferences of the consumers.

The Dependent Variable

The only dependent variable that would be employed in the analysis is the per caput consumption of beef.

The Explanatory Variable

(a) The price of beef: The price of beef should be clearly incorporated in the model. For a number of reasons price analysis is a fruitful area of research in agricultural markets. The more important being that agricultural products are more or less homogenous; have limited product development and limited promotion, and a stable distribution system. There has been some amount of debate as to whether we should use real prices or money prices. Since it is generally felt that consumers do suffer from money illusion, then real prices should be used in preference to money prices.

(b) Consumer's income: There are several legitimate measures of income that can be used as an explanatory variable. However, since it is felt that some proportion of income will be taken away in the form of taxes and hence cannot be spent, then it is argued that disposable income is a more appropriate measure. Disposable income is deflated to take into account changes in the cost of living. This is consistent with one of the fundamental propositions of the consumption function, i.e. real consumption is a function of real disposable income.

(c) Prices of competing goods: Economic theory emphasises the role of the price of substitutes and complements in determining the demand for a particular good. It seems unlikely that there are any complementary goods for beef, so that we need to consider only the prices of substitute goods. *A priori* it can be assumed that pork, poultry, and mutton, can all be considered substitutes for beef.

(d) Population: In dealing with population as an explanatory variable, all the relevant variables (such as consumption and income) would be put on a per caput basis. This method has two advantages. Firstly, it helps to conserve on the degrees of freedom. Secondly, it reduces the degree of multi-collinearity in that both income and population posses a trend element.

(e) Tastes and preferences: Tastes and preferences play an important role in determining demand. In a country, like Guyana, where religious taboos are attached to the consumption of certain meats, the importance of this variable cannot be overstated. Nonetheless, it is difficult to quantify. One method of circumventing this difficulty is to assume that tastes and preferences change linearly over time and so include an artifical variable that changes by the same amount each year, hence the inclusion of a linear trend variable. The inclusion of this variable may pick up changes in consumption that may occur for a variety of reasons.

The Demand Analysis - Methods, Procedures, Interpretation

From the data available which is presented in the Appendix, it was quite possible to develop a formal demand model and thus be able to estimate our own price, cross, and income elasticity parameters. The supporting technique that would have been employed is regression analysis. However, the lack of computer facilities for running multiple regressions militated against this. As a result, it was necessary to use another methodology. However, this is merely a stop gap measure, and as soon as it is possible the demand equations would be estimated.

In view of the above, the beef demand projections developed in this paper are a composite of theory, analytical technique and judgement. An attempt is made to make explicit the role of each in the derivation of the demand estimates.

Of the various factors that may influence the demand for beef as shown in the flow diagram, this analysis is limited to a consideration of changes in population, per capita disposable income and relative prices. It should be borne in mind that the projections presented here are only as reliable as the data used in the analysis. *"No matter how sophisticated the model and the technique, our estimates and the conclusions drawn can be as only good as the data - the importance of collecting suitable and reliable data and processing it in an appropriate and meaningful way for the problem under study cannot be over-emphasized"* [3].

Demand: Population and Income Effects

The basic growth factors that can affect demand are population and income. As each of these grow, it can have a positive impact on demand. Population has a one to one effect in that if the population increases by one person, then the total demand would increase by the domestic disappearance of that additional person. However, income tends to have a different impact for each item in the consumer basket. In the case of beef, we would expect the income effect to be positive. It is only for inferior goods that the income effect is negative. This section concentrates basically on population and income as they affect demand. In another section, the effects of relative prices and other socio-economic factors are discussed.

Table 2. Population Growth

Year	Population	Year	Population
1960	546,000	1966	641,691
1961	560,924	1967	658,145
1962	575,030	1968	675,001
1963	591,792	1969	687,208
1964	606,313	1970	699,156
1965	622,407		

Source: *Annual Statistical Abstract, 1971*. Exclusive of Amerindians.

From the figures given, the population increased from 546,000 in 1960 to 699,156 in 1970, an intercensal period of 10 years. If it is assumed that the census population of 546,000 in 1960 increased by some constant rate of growth which when compounded on an annual basis would yield the census population of 699,156 in 1970, then a natural exponential function can be derived.

$$Y = ae^{tr}$$

where

a is a constant

e = 2.71825, the base of the natural log

t = 10, the number of intercensal years

r = the annual compounded growth rate

so that we have

$$546{,}000\ e^{10r} = 699{,}156$$

$$e^{10r} = \frac{699{,}156}{546{,}000} = 1.28$$

$$10r = \frac{\log_{10} 1.28}{\log_{10} (e = 2.71828)} = \frac{.1072}{.4343}$$

$$10r = .2468$$

$$r = 2.46$$

The calculated average growth rate is 2.46 per cent. If it is assumed that this constant annual growth rate were to continue during the period 1970-1980, then the projected population of Guyana, exclusive of Amerindians, would be 891,489 in 1980. Although this figure may be considered rather crude since it does not take into account what are likely to be the changes in the patterns of migration during the period, this should not be considered a serious limitation. This paper merely attempts to determine the approximate magnitude of what is likely to be the potential demand for beef in Guyana in 1980.

Table 3. Projected Population

Year	Population	Year	Population
1971	716,355	1976	808,908
1972	733,977	1977	828,807
1973	752,032	1978	849,195
1974	770,532	1979	870,085
1975	789,487	1980	891,489

Income Elasticities of Demand and Income Growth Rates

The income elasticity used in this study is obtained from FAO's commodity projections [4]. The income elasticity given for beef is unity. Using such an income elasticity presupposes that the income elasticity among the *various* ethnic groups and the various income groups is the same. However, in Guyana income distribution is skewed and it would be expected that different income groups would have different income elasticities of demand. This in itself would affect the projections.

With respect to income growth rate, time series data on per capita real disposable income were obtained (see Statistical Appendix). It was assumed that per capita income would continue to grow by the same trend

as it did during the period 1960-1973. Using time series data and regression analysis, it was possible to extrapolate real per capita disposable income to 1980. This figure was calculated to be $446, which represents a real income increase of 10.3 per cent.

Projected Demand in 1980

The demand projections would be based on per capita income; income elasticity of demand; and the projected population in 1980. The general equation for the projection is:

$$Q_i^P = [Q_i^b + (Q_i^b \cdot I^P \cdot E_i^I)]\bar{P}$$

where

Q_i^P = projected demand level at the end of the projection period, 1980

Q_i^b = per capita consumption in the base period. 1970 is chosen as the base period

I^P = projected change in per capita income

E_i^I = income elasticity of demand

$\bar{P}$ = projected population in 1980

The equation presented above has been used in a number of studies concerned with explaining and projecting demand [5,6].

The Projection

Substituting the appropriate values in the above equation, national demand requirements for beef were projected in 1980. The projected demand was calculated as follows:

Q_i^b = 14.9 lb./capita (consumption in the base period, 1970)

I^P = 10.3 per cent (percentage change in real per capita disposable income)

E^I = I (income elasticity)

$\bar{P}$ = 891,489 persons

Substituting these values in the equation,

$$Q_2^P = [14.9 + (14.9 \times .103 \times 1)] \quad 891,489$$

$$= 14,650,730 \text{ lb.}$$

This figure represents an increase of 39.7 per cent over the 1970 domestic disappearance level or 23.73 per cent over the 1973 disappearance level.

Some Further Socio-Economic Considerations

The analysis thus far has not considered the effects of price and cross elasticities as they affect demand. Empirical studies have well established that the price elasticity coefficients for most food commodity groups are well below unity (-1.0). In Guyana, FAO has estimated the income elasticity for beef to be unity. It seems plausible to suggest

that an increase in supply and thus fall in price would have had a substantial impact on increasing the demand for beef. With respect to the cross elasticity coefficient, there are quite a number of substitutes for beef in Guyana. These include fish, pork and poultry.

Another important factor that affects the consumption of beef in Guyana is that a large proportion of the population is comprised of Hindus. There are certain religious taboos that are attached to the consumption of beef. However, it is generally suggested that the number of Hindus who consume beef is on the increase. This will in the future have a positive effect on the demand for beef. At the present, there is no empirical work in support of the above suggestion. However, a random sample survey is being conducted and it is hoped that the results of the sample should be able to throw some light on this issue.

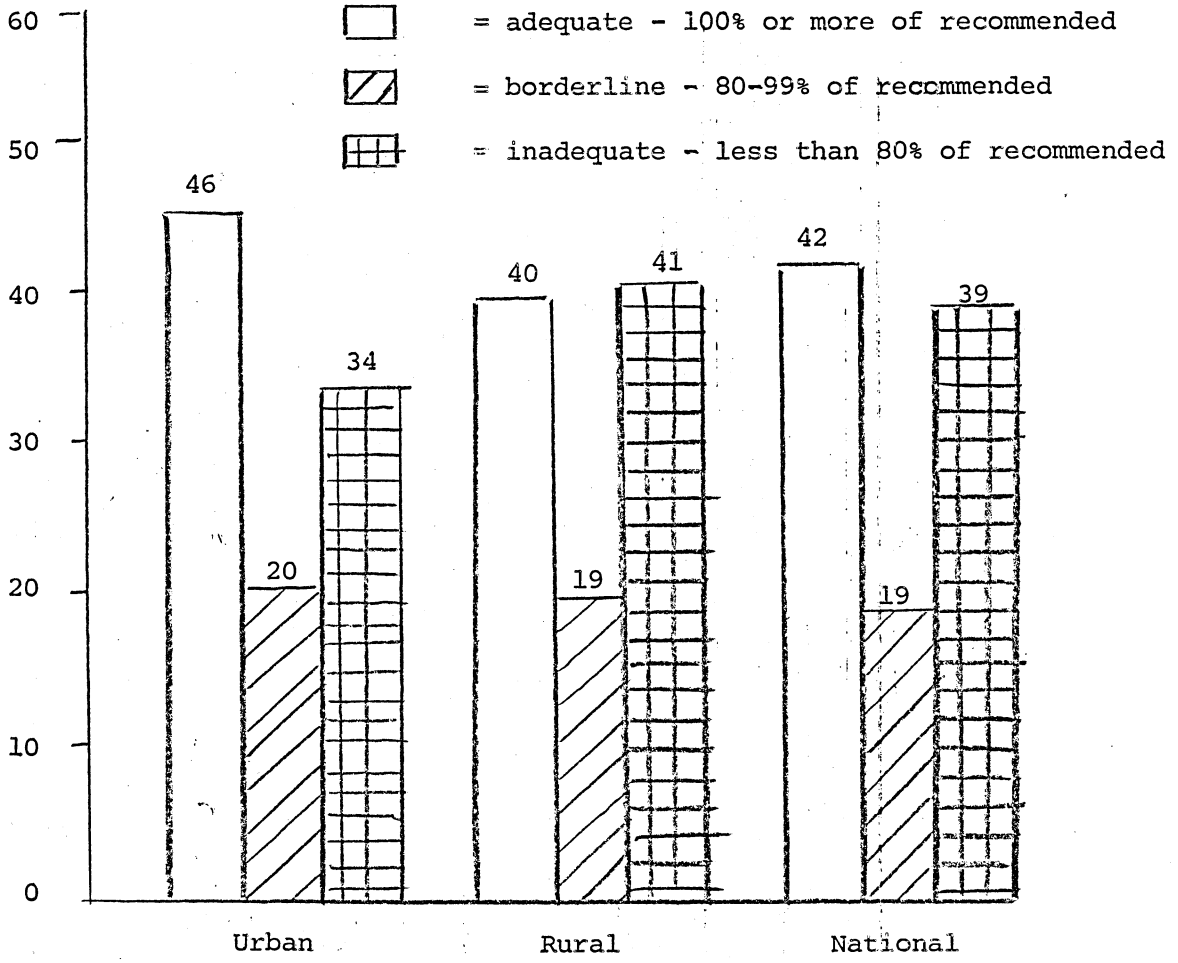
Policy Implications and Conclusions

This analysis has been concerned only with the domestic demand for beef. It must be noted that the CARICOM region is a large importer of beef both to meet its own requirements and to provide for its large tourist sector. This is a sizeable market which can be capitalised on. Even if we forget the CARICOM market, and concentrate on the domestic market, we find that in order to satisfy national requirements by 1980, we would need to slaughter 48,035 animals. Immediately, this would have implications for the type of technology that ought to be adopted in the industry, the size of the cow herd that would be necessary to generate the number of animals to be slaughtered and the type of slaughter facilities that ought to be provided. It seems that these projections are necessary if we are to seriously engage in medium term and long term planning.

It is unfortunate that at the present time, this study has not been able to estimate a price elasticity of demand for beef. This coefficient is important especially when price policy has become a popular economic measure among governments. Should the government control the price of beef, what are the likely effects on consumption? Recent experiences in Guyana have shown that when Government controlled the price of chicken, the demand for chicken immediately increased as people switched their consumption from beef and pork to chicken which became relatively less expensive. As a result, there have been intermittent shortages of chicken on the local market, although the production period for meat birds is just about eight weeks. In the case of beef, the production period is about three years, hence greater caution would have to be taken in instituting a pricing policy especially in terms of supply adjustment to the resultant changes in demand. This study was primarily concerned with demand, there is need for further research on the supply side.

Finally, there is need for further research into the marketing arrangements for beef in Guyana. Most of the research work done to date has either been supply-demand analysis, or technical feasibility studies or appraisal of physical facilities. Supply-demand analysis, while useful, have not explained market conditions very accurately. Consequently, further work is required in this area. There is also need to consider the vertical integration of the industry and the spin-off industries that can be developed as a result of an expanded livestock sector.

Figure 3. Percentage of Households with Adequate and Inadequate Protein Intakes in Urban and Rural Areas



Source: Guyana Survey 1971, Table 688.

References

1. Mayers, J.M. (1970). *Meat Production and Consumption Statistics of the Commonwealth Caribbean.* Occasional Series No.5, Dept. of Agric. Econ. & Farm Management, U.W.I., St. Augustine, Trinidad.

2. Bressler, R.G. and King. R.A. (1970). *Markets, Prices and Interregional Trade.* John Wiley and Sons.

3. Agrawal and Heady (1972). *Operations Research Methods for Agricultural Decisions.* Iowa State Univ. Press.

4. FAO of U.N. (1970, 1980). *Agricultural Commodity Projections.* Vol. II, pp.229.

5. Martin, I, and Larry, J. (1972). "The Impact of Improved Regional Production and Prices of Major Food Commodities in Utter Pradesh, India." (Unpublished Ph.d. Thesis. Univ. of Illinois, U.S.A.

6. Nathan R.R. Associates (1974). "Guyana's Food Crop System: An analysis for development planning, June 1974. Disappearance level, or 23.73% over the 1973 appearance level.

Appendix Table 1. Statistics on the Production and Consumption of Fresh Beef

Year	Dressed carcass weight of official slaughtered animals	Dressed carcass weight of unofficial slaughtered animals	Imports	Exports	Total Disappearance	Per caput Disappearance
1960	6,817,230	1,420,000	14,428	92,638	8,168,020	14.9
1961	7,071,120	1,231,000	102,953	38,371	8,366,702	14.9
1962	6,838,335	1,772,000	42,734	28,341	8,646,254	15.0
1963	6,575,625	2,254,000	8,181	6,545	8,831,261	14.9
1964	7,636,230	1,736,000	2,072	392,784	8,981,518	14.8
1965	8,590,680	664,000	6,645	818,287	8,443,028	12.7
1966	9,422,681	1,000,000	17,476	303,852	10,136,305	15.7
1967	8,648,441	1,000,000	41,170	750	9,688,861	14.7
1968	8,782,762	1,000,000	29,434	57,997	9,754,199	14.8
1969	9,361,726	1,000,000	33,984	153,448	10,242,262	14.9
1970	8,839,846	1,520,453*	120,338	-	10,480,637	14.9
1971	9,524,452	1,638,205*	14,931	2,256	11,175,332	15.6
1972	9,600,228	1,651,239*	6,636	6,896	11,251,207	15.3
1973	9,611,906	1,653,207*	-	-	11,265,113	14.9

Source: Files of the Ministry of Agriculture; Annual Reports on External Trade; and Mayers, J.M. (see reference [1].

Note: * Dressed carcass weights for unofficial slaughtered animals were only available for the period 1960-69, hence for the years 1970-73 (inclusive), it was necessary to make estimates. In the light of no available statistics, the method used was to calculate the dressed carcass weights of unofficial slaughtered animals as a percentage of the dressed carcass weights of official slaughtered animals. The mean of these percentages was then found. For the years 1970-73, dressed carcass weights of unofficial slaughtered animals was estimated to be this average percentage of the weights of dressed carcass weight of official slaughtered animals. It is quite possible that these estimated weights of unofficial slaughtered animals may be overstated as it can be seen that for the period prior to 1970, the dressed carcass weights of unofficial weights of unofficial slaughtered animals tended to stabilize around one million pounds. Even if the figures are overstated, the result of which is to inflate per caput disappearance is relatively low.

Appendix Table 2. National and Disposable Incomes, Guyana, 1960 to 1973.

Year	National income	Personal taxes	Disposable income	Per caput Disposable income	Real per caput* disposable income
	($m)	($m)	($m)	($)	($)
1960	227.6	4.2	223.4	409	386
1961	248.6	4.2	244.4	435	407
1962	250.7	4.6	246.1	427	387
1963	230.8	5.2	225.6	381	338
1964	255.9	5.8	250.1	412	364
1965	252.3	4.4	277.9	446	384
1966	297.3	5.3	292.3	455	384
1967	323.4	7.7	315.7	479	392
1968	343.4	14.6	328.8	487	387
1969	367.0	15.4	341.6	497	389
1970	391.1	18.4	372.7	533	404
1971	425.9	18.9	407.0	568	422
1972	473.1	20.2	452.9	617	439
1973	512.6	22.3	490.3	651	425

Sources: Bank of Guyana Annual Reports; Annual Statistical Abstract, 1971.
Note: *Deflated by all items index.

Appendix Table 3. Production and Domestic Disappearance of Mutton in Guyana, 1960-1973

(pounds)

Year	Total Production	Net Imports	Total Disappearance	Per caput Disappearance
1960	25,979	82,595	1,085,474	.1988
1961	27,632	84,396	112,028	.199
1962	42,550	83,785	126,335	.219
1963	56,541	81,190	137,731	.232
1964	81,009	88,683	169,692	.279
1965	84,700	90,197	174,897	.281
1966	107,000	73,863	180,863	.281
1967	118,000	117,125	235,125	.357
1968	114,200	82,377	196,577	.291
1969	148,900	61,442	210,342	.306
1970	138,800	52,134	190,934	.273
1971	111,200	68,952	180,152	.251
1972	115,000	15,458	130,458	.177
1973	75,000	-	75,000	.0997

Sources: Files from the Ministry of Agriculture. Annual accounts relating to External Trade. See reference [1]. Figures of the Commonwealth Caribbean.

Appendix Table 4. Production and Domestic Disappearance of Pork in Guyana; 1960-1973.

Year	Total Production	Net Imports	Total Disappearance	Per caput Disappearance
1960	665,896	1,364,214	2,030,110	3.718
1961	659,916	1,427 346	2,087,262	3.721
1962	850,217	1,282 741	2,151,116	3.740
1963	989,641	1,300,899	2,290,540	3.870
1964	1,000,000	1,412,183	2,412,183	3.764
1965	1,000,000	1,282,367	2,282,367	3.667
1966	1,400,000	1,528,168	1,928,367	4.563
1967	1,700,000	1,349,728	3,049,728	4.633
1968	2,100,000	13,034	2,113,034	3.130
1969	2,600,000	51,170	2,651,170	3.857
1970	2,600,000	3,247	2,596.753	3.714
1971	3,300,000	1,273	3,298,727	4.604
1972	3,400,000	2,192	2,398,727	4.630
1973	3,100,000	-	3,097,808	4.119

Sources: Files from the Ministry of Agriculture; Annual Accounts relating to External Trade and reference [1].

Appendix Table 5. Production and Domestic Disappearance of Dressed Poultry in Guyana; 1960-1973.

Year	Total Production	Net Imports	Total Disappearance	Per caput Disappearance
1960	1,093,419	102,976	1,196,395	2.191
1961	1,416,159	82,409	1,498,568	2.671
1962	1,304,758	47,051	1,351,809	2.350
1963	1,014,381	80,667	1,095,048	1.850
1964	1,900,000	117,314	2,017,314	3.327
1965	2,100,000	41,318	2,141,318	3.440
1966	4,200,000	30,001	4,230,001	6.590
1967	5,500,000	48,071	5,548,071	8.429
1968	5,900,000	33,891	5,933,981	8.790
1969	6,000,000	31,893	6,031,893	8.777
1970	7,500,000	34,327	7,534.327	10.776
1971	8,700,000	34,956	8,734,596	12.193
1972	10,800,000	2,285	10,797,715	14.711
1973	12,500,000	-	12,500,000	16.621

Sources: Same as above.

Appendix Table 6. Retail Prices per Pound of Pork; Municipal Markets, 1960-1973.

Year	Price of Pork	Real Price*
1960	82.3	78.4
1961	80.7	75.5
1962	74.5	62.2
1963	75.0	66.1
1964	74.3	65.8
1965	74.9	72.2
1966	75.0	62.1
1967	75.2	60.5
1968	75.0	58.3
1969	75.9	58.7
1970	71.1	52.6
1971	77.5	56.1
1972	81.8	55.8
1973	102.4	61.2

Source: Files from the Ministry of Agriculture
Note: *Deflated by Food Price Index.

Appendix Table 7. Retail Prices per Pound of Beef; Municipal Markets, 1960-1973

Year	Price of Beef	Real Price*
1960	43.4	41.3
1961	45.5	42.6
1962	50.5	46.2
1963	57.1	50.3
1964	56.6	50.1
1965	55.0	46.7
1966	60.9	50.4
1967	60.0	48.3
1968	62.6	48.6
1969	65.2	50.4
1970	73.7	54.5
1971	75.4	54.9
1972	79.3	54.1
1973	117.9	70.5

Source: Files from the Ministry of Agriculture
Note: *Deflated by Food Price Index.

Appendix Table 8. Retail Prices per Pound of Mutton; Municipal Markets, 1960-1973.

Year	Price of Mutton	Real Price*
1960	98.0	93.4
1961	102.0	95.5
1962	104.4	94.8
1963	109.8	97.4
1964	110.0	97.4
1965	107.0	90.9
1966	110.0	91.2
1967	110.0	88.6
1968	109.3	84.9
1969	116.0	89.7
1970	122.8	90.9
1971	136.7	98.9
1972	142.6	97.9
1973	170.0	101.7

Source: Files from the Ministry of Agriculture
Note: *Deflated by Food Price Index.

Appendix Table 9. Retail Prices per Pound of Dressed Poultry; Municipal Markets, 1960-1973

Year	Price of Dressed Poultry	Real Price*
1960	94.0	89.6
1961	96.0	89.8
1962	98.0	89.8
1963	97.7	86.2
1964	100.2	88.7
1965	98.0	83.3
1966	86.4	71.6
1967	91.2	73.4
1968	96.9	75.1
1969	100.3	77.5
1970	102.0	75.5
1971	92.9	67.2
1972	100.5	68.5
1973	117.3	70.1

Source & Note: Same as above.