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**AN ANALYSIS OF FOOD
SELF-SUFFICIENCY IN BARBADOS**

J. S. Lohoar

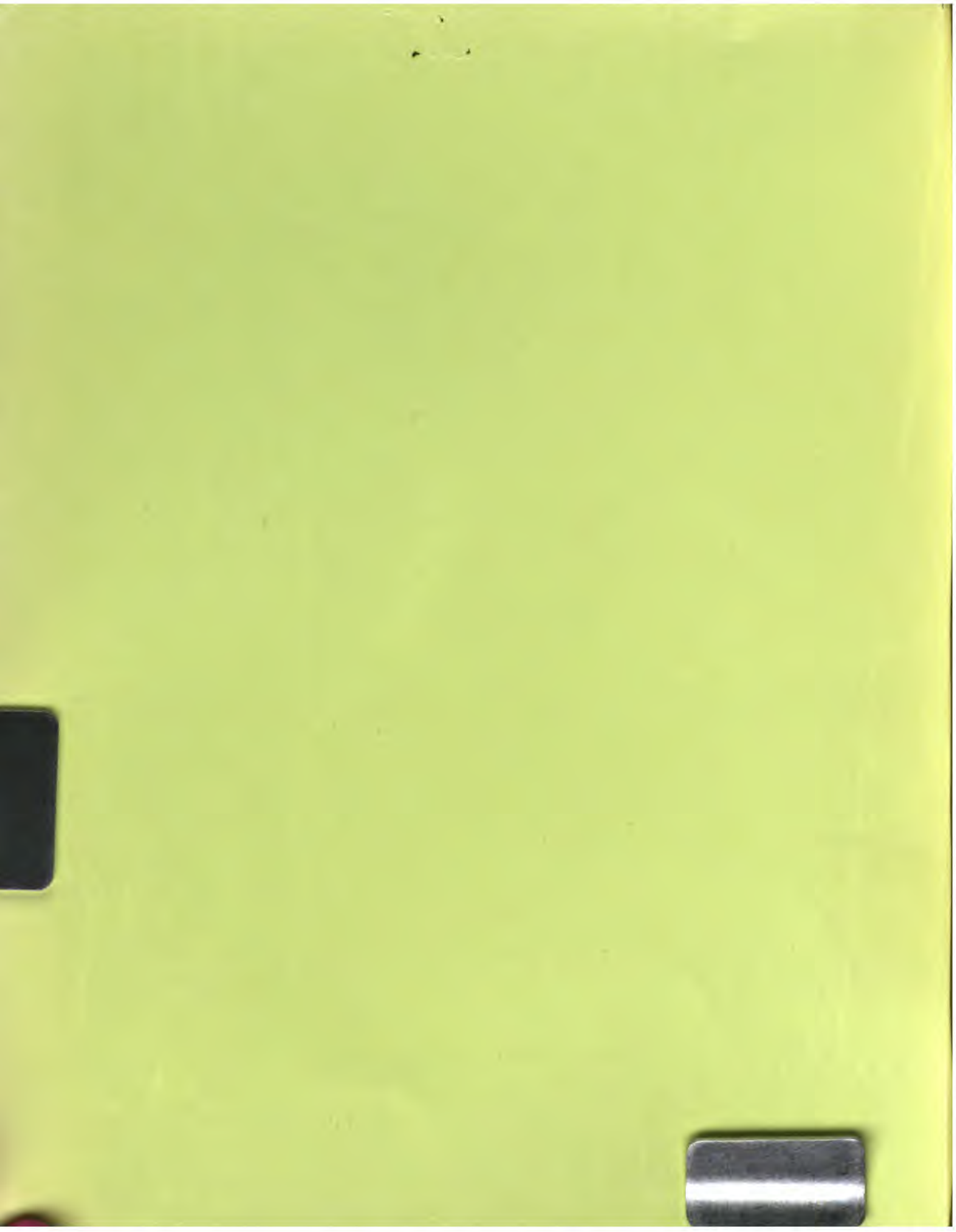


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Bridgetown, April 1981

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INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

OFFICE IN BARBADOS

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James S. Lohoar

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INTRODUCTION

In 1979, an agreement was signed between the Ministry of Agriculture Food and Consumer Affairs and the Inter-American Institute for Cooperation on Agriculture (IICA) for technical assistance in the field of agricultural marketing. The project is financed by funds from the Simon Bolivar Fund. The overall objective of the agreement is to improve the performance and efficiency of the marketing system in Barbados for non-sugar crops by strengthening the capabilities and marketing services of the Barbados Marketing Corporation (BMC) and other organizations involved in this field.

In the early stages of the project, an assessment was made of the proportion of Barbados' total food supplies which is obtained from domestic sources as opposed to imports. In addition, recent trends in the proportion of domestic production in relation to total requirements (self-sufficiency) for individual commodities were analysed. It was considered that this information was essential in order to identify areas where increased domestic food production could be encouraged.

In this report, the results of the analysis of food self-sufficiency are outlined and areas suggested where increased domestic production could assist in replacing imports and increasing exports. Consideration is also given to the prospect that foreign exchange in the immediate future is likely to be less available to pay for food and agricultural imports which are in turn likely to become more costly.

The helpful collaboration of the BMC, the planning Unit of the Ministry of Agriculture and the staff of the Barbados Agricultural Society in the provision of data and assistance is gratefully acknowledged.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for the company's financial health and for providing reliable information to stakeholders.

2. The second part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

3. The third part of the document discusses the role of the accounting department in ensuring the accuracy and integrity of the records. It highlights the importance of regular audits and the use of appropriate accounting software.

4. The final part of the document provides a summary of the key points and offers recommendations for further improvement in the recording process.

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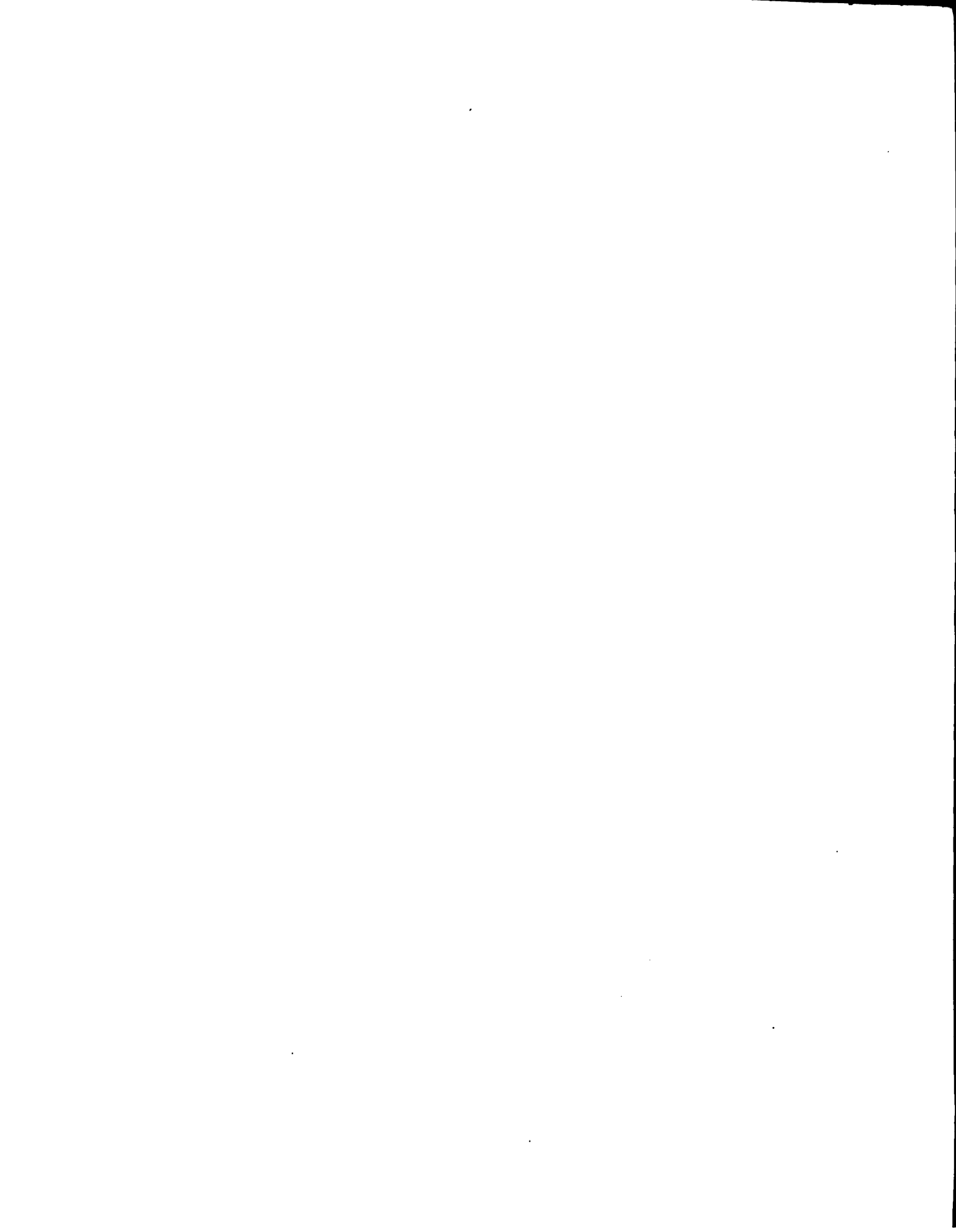
14. The eleventh part of the document outlines the specific procedures for recording transactions. It details the steps from initial entry to final review, ensuring that all necessary information is captured and verified.

15. The twelfth part of the document discusses the role of the accounting department in ensuring the accuracy and integrity of the records. It highlights the importance of regular audits and the use of appropriate accounting software.

16. The final part of the document provides a summary of the key points and offers recommendations for further improvement in the recording process.

TABLE OF CONTENTS

	PAGE
INTRODUCTION	11
I. NEED FOR INCREASED FOOD PRODUCTION	1
Export earnings	2
Escalation in energy bill	4
World food situation	4
II. BARBADOS' SELF-SUFFICIENCY IN FOOD	6
Level of imports	6
Overall self-sufficiency in food	8
Self-sufficiency for individual commodities	11
III. PROGRAMMES AND POLICIES TO INCREASE FOOD SELF-SUFFICIENCY	15
Livestock-feed sector	18
Fruit and vegetables (including root crops)	18
Increased Exports	20
Import Replacement	22
IV. SUMMARY AND CONCLUSIONS	22
V. SELECTED REFERENCES	24
VI. APPENDIX	25



LIST OF TABLES		PAGE
TABLE 1	Trade in Agricultural and Food Products, Barbados, 1970-1980	7
TABLE 2	Value of Imports of Major Agricultural and Food Products, Barbados, 1980	9
TABLE 3	Self-sufficiency in Food Requirements (excl. sugar & fish), Barbados 1969-1979	10
TABLE 4	Estimated Self-Sufficiency in Selected Agricultural Commodities, Barbados, 1969-71 (av) to 1979 - in value terms	13
TABLE 5	Estimated Self-Sufficiency in Selected Agricultural Products, Barbados, 1968-71 (av) to 1980 - in terms of tonnage	14
LIST OF CHARTS		
CHART 1	Self-sufficiency in Selected Agricultural Products, Barbados, 1968-1980	12
CHART 2	Self-sufficiency in Meat Products, Barbados, 1968-1980	16
CHART 3	Self-sufficiency in Fruit, Vegetable and Root Crops, Barbados, 1968-1980	17
CHART 4	Self-sufficiency in Dairy Products and Eggs, Barbados, 1968-1980	19
CHART 5	Value of Net Imports of Selected Agricultural Commodities, Barbados, 1969-71 (av) and 1979	21

AN ANALYSIS OF FOOD SELF-SUFFICIENCY IN BARBADOS*

Food Problem in Prospect

The announcement by the Central Bank of Barbados, at the end of 1980, of new monetary measures to curb the growth in imports highlighted the adverse situation which is likely to face the Barbadian economy in the immediate future ^{1/} This increased concern about future economic prospects reflects the rapid rate of domestic inflation together with a deterioration in the balance of international payments. In order to surmount this period of uncertain economic conditions, it would seem that the non-sugar agricultural sector could have a more important contribution to make than in the past.

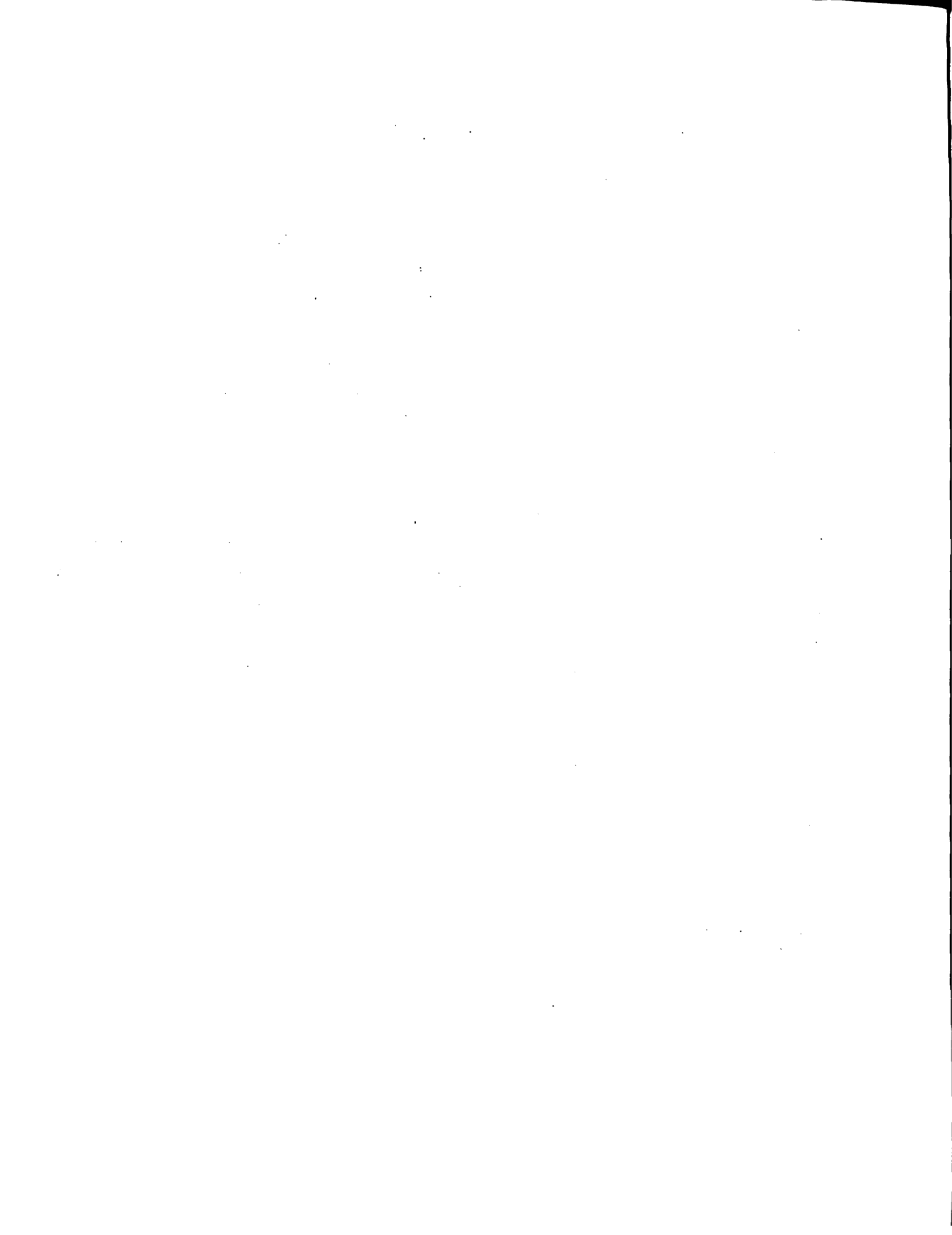
In this paper, a review of the various factors leading to the present adverse conditions is undertaken. An analysis is then made of recent trends in Barbados' self-sufficiency in food requirements. Based on this analysis, considerations is then given to areas where increased domestic food production could make a contribution to reducing the present high level of food imports as well as increasing exports in order to improve the balance of payments.

NEED FOR INCREASED FOOD PRODUCTION

There is a growing awareness of Barbados' heavy dependence on imported foods. In recent months, the vulnerability of the economy because of this dependence on outside food supplies has become more sharply into focus because of the coincidence and persistence of three factors viz:

* The assistance in collation and verification of statistics and preparation of charts provided by Lionel Jordan and Marcia McDonough is gratefully acknowledged.

^{1/}Central Bank of Barbados, Press Release, December 30, 1980.



1. Unfavourable prospects for expansion of earnings from tourism and manufactured exports.
2. Continued escalation in the import bill for energy.
3. The deterioration in global food supplies.

1. Export earnings:

In recent years the increasing level of food imports has not been a major concern since foreign exchange to pay for these imports has generally been available because of:

- (1) expanding revenue from the tourist sector.
- (2) growing exports of manufactured products.

Prospects for continued expansion in these two sectors are now considerably less favourable. In relation to tourism a number of factors are combining to suggest that its contribution to the economy may moderate in the immediate future. These include:

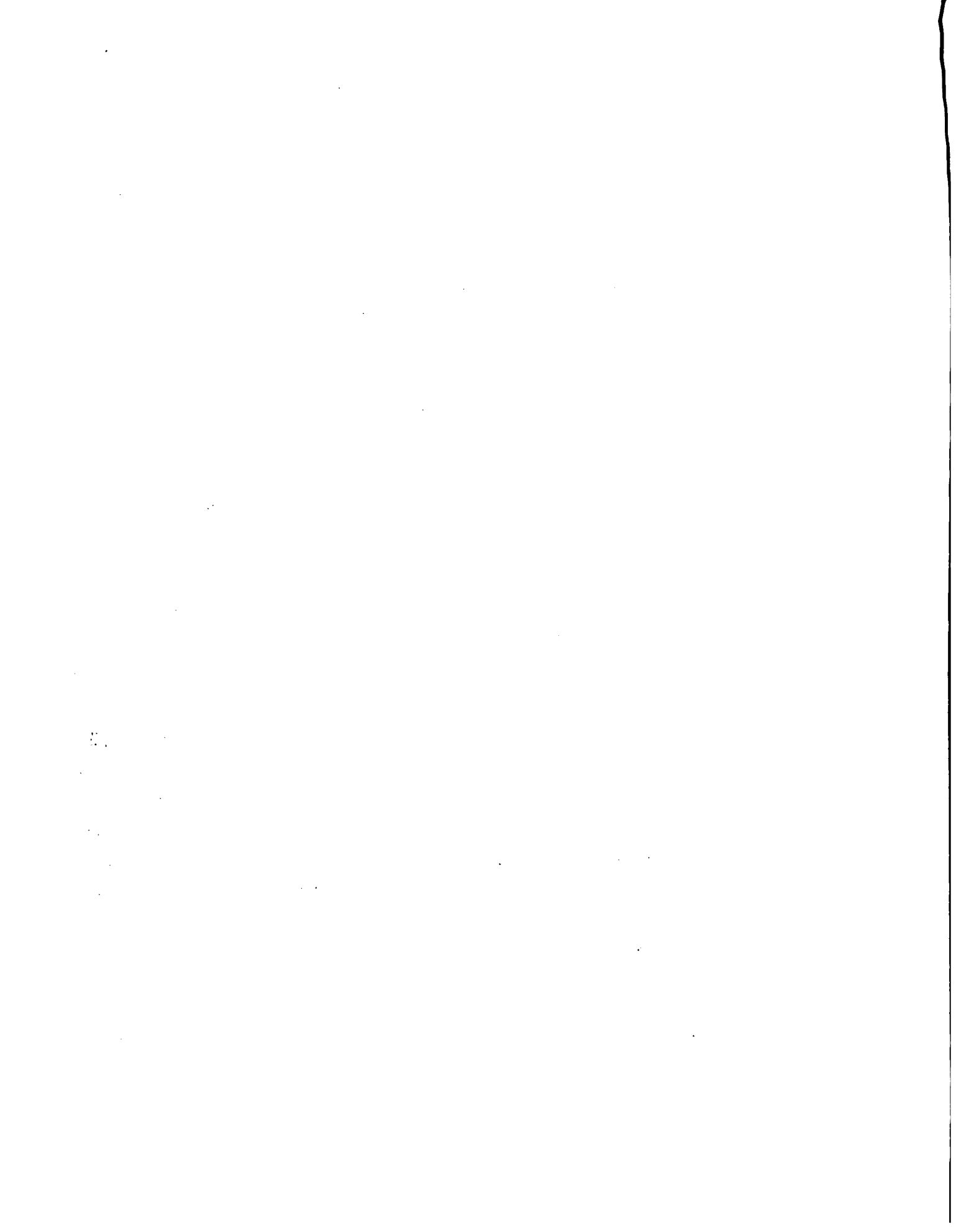
- (a) The continuing recession in the countries which provides the majority of visitors i.e. U.S.A., Canada and Europe.
- (b) the deteriorating competitive position of Barbados in relation to alternative destinations for tourists e.g. Mexico, because of the higher rate of increase in energy, labour, and building costs.
- (c) the continuing adverse effect of increasing air fares which is particularly detrimental to Barbados as one of the more distant destinations e.g. as compared with Florida, Bahamas, and Mexico.
- (d) the growing evidence that the island is approaching saturation point in relation to the number of tourist arrivals. In addition to being a major contributing factor to the high rate of domestic inflation e.g. high prices for fish, tourism will increasingly lead to social pressures and concern e.g. access to beaches, if a



further significant increase in the number of visitors is encouraged.

Similarly, prospects for a continued expansion in exports of manufactured products are less bright. The factors leading to this situation include:

- (a) The depressed levels of economic growth and high rates of unemployment in North America and Europe which are resulting in the introduction of increased restrictions on imports of processed and manufactured products,
- (b) the economic and financial problems besetting Jamaica and Guyana are similarly having an adverse effect on trade within the Caribbean region,
- (c) the increased labour costs together with limited gains in productivity which are leading to a deterioration in Barbados' competitive position in relation to other developing countries exporting manufactured products,
- (d) the strong indications that the micro-electronics revolution is now undermining efforts by developing countries to increase industrialisation. The micro-chip has drastically changed the economics of many labour-intensive industries such as textiles and footwear. In particular the ability, with this new technology, to undertake numerous complex functions at the same time is decreasing significantly the importance of direct labour costs. In the future technology rather than labour costs will determine competitiveness. As a result, the relative advantage of countries with lower wage rates such as Barbados is likely to be eroded. This development was not fully considered in a recent article which concluded that manufactured exports can



one of the more reliable sources of sustained growth in foreign exchange earnings.^{2/}

The combined effect of these recent adverse developments in both the tourism and manufacturing sectors is already becoming apparent and resulting in a significant deterioration in the balance of payments. As a result less foreign exchange will be available to purchase imported food and consumer items. In addition there are currently few signs that these adverse economic conditions and prospects are likely to improve in the short or medium term in order to alleviate the situation.

2. Escalation in energy bill

A further factor resulting in a sharp decrease in the availability of foreign exchange to pay for imports is the continued increase in the price of imported oil and gas. The cost of Barbados' imports of oil and gas increased from \$47 million in 1979 to \$65 million in 1980. Further substantial increases are inevitable in the coming months. In the past, Barbados has survived periods of high prices for imported food, but there is no certainty that the economy is sufficiently strong to withstand an extended period when both energy and food prices are at high levels.

3. World food situation:

In recent months there has been a sharp decline in world food supplies resulting in a significant increase in prices for imported agricultural and food products. Latest estimates indicate that the production of food and feed grains in 1980 was 60million tonnes lower than in 1979. During 1981, cereal consumption is expected to rise by 28 million tonnes and trade in grains to increase by 18 per cent. By June 1981, the critical month when national graneries are at their lowest, world stocks are forecast to decline to 130 million tonnes representing a supply only adequate for 32 days. Because

^{2/} The External Debt of Barbados, Quarterly Report, Central Bank of Barbados, December, 1980.



an increasing proportion of the world's food is traded rather than domestically produced, the producer - consumer "food chain" begins to break if stocks drop below a 45 days supply.3/

The adverse developments have arisen mainly because of the short-fall in the United States maize production due to last summer's drought coinciding with a further poor harvest in the USSR. In addition, two major exporting countries - Australia and Argentina- are predicting reduced export availabilities following this year's harvest in the southern hemisphere.

The rapid change in the world food situation is reflected in a recent news item from Kenya, until recently an important food exporter as well as being a tourist centre:

" In a move to end food shortages, Kenya has introduced mandatory corporal punishment for people convicted of smuggling and hoarding. Caning is carried out by a prison officer using a birch cane after a magistrate determines the number of strokes. During the past year, Kenya has faced acute shortages of maize meal, milk, rice and cheese. Government officials have blamed hoarding by traders and black-marketers for the shortages plus smuggling across the border to Uganda!" 4/

Barbados is not insulated from these trends as was clearly obvious when flour prices were increased by 25 per cent in early February.

There are few signs that these adverse factors - deteriorating prospects for tourist and export earnings, escalating energy costs and expensive food imports - are likely to be short lived. To date the adverse effects of these developments have been offset by capital inflows which have continued to bolster the balance of payments. With the unfavourable outlook for

3/ " Development Forum", Joint United Nations Information Committee, December 1980.

4/ " Globe and Mail", Toronto, January 3, 1981.

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tourism and the manufacturing sector, capital inflows are now likely to be reduced. The recent strength of the US dollar, to which the Barbados dollar is linked, will also accentuate the current economic problems. Exports of manufactured products to markets other than the U.S.A. will be less competitive and tourists from Europe, in particular, will find Barbados prices more expensive.

Against this background it would therefore seem necessary as well as timely to assess the prospects in Barbados for obtaining an increased proportion of total food requirements from domestic sources.

BARBADOS' SELF-SUFFICIENCY IN FOOD

Against the background of increasing prices for imported agricultural and food products coupled with a reduction in the availability of foreign exchange to pay for imports, it is important that up-to-date information be available on food imports entering Barbados in relation to total food requirements. In this way, it will be possible to identify commodity areas where the expansion of output can be encouraged.

Level of imports

Recent level of food imports in relation to agricultural exports are outlined in Table 1. There has been a steady increase in the value of agricultural and food imports in recent years and it is probable that in 1980 these approached \$165 million following the sharp increase in commodity prices in the latter part of the year. Imports of food are in part offset by exports of sugar, molasses and rum and other products (Table 1). However since 1975 the contribution of these commodities has not been sufficient to prevent a steady increase in the trade deficit for the agricultural sector. It remains to be seen whether the higher level of world sugar prices which prevailed last year were sufficient to prevent a further increase in the trade deficit for the agricultural sector in 1980. Prospects for the sugar economy in 1981

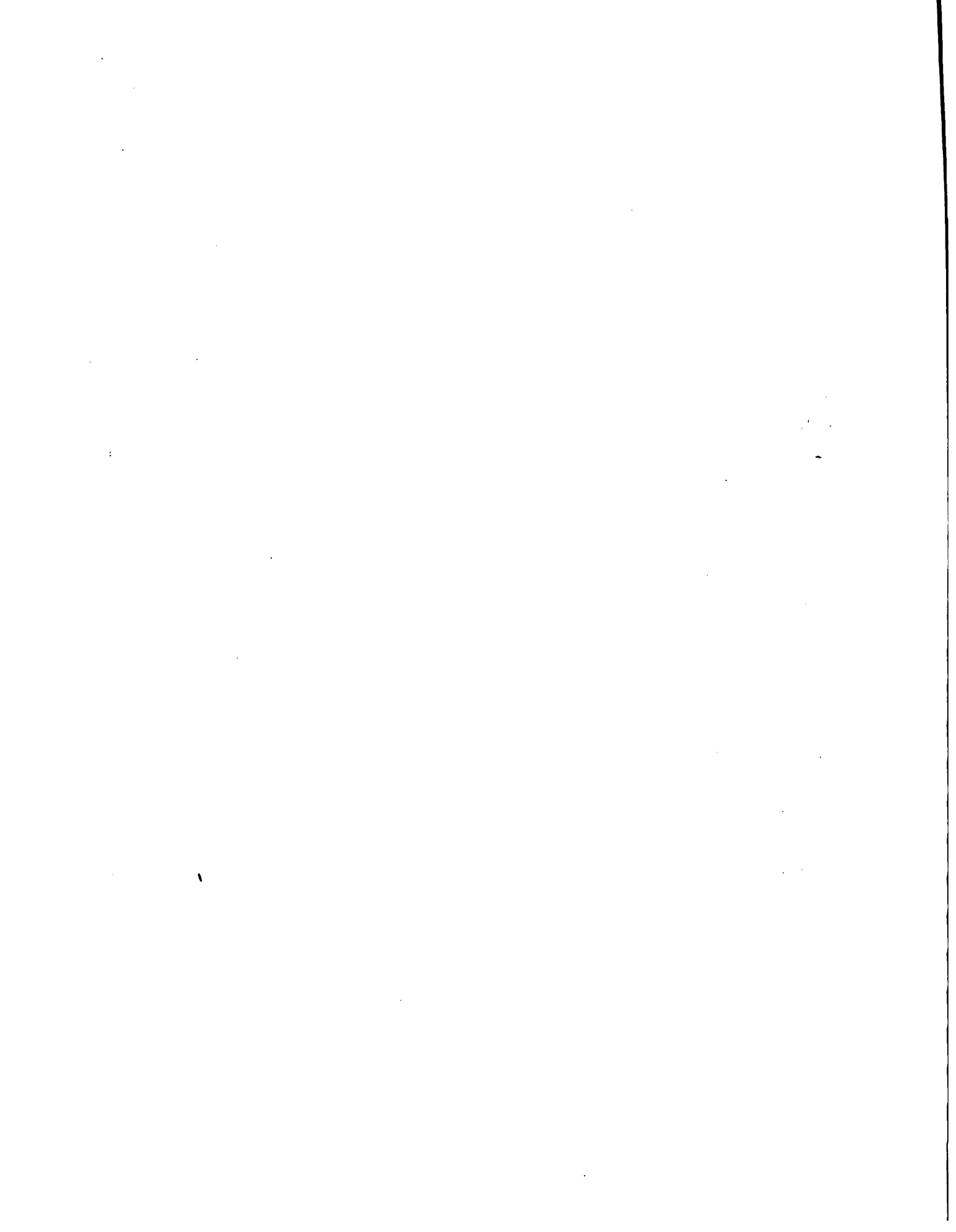


TABLE 1 TRADE IN AGRICULTURAL AND FOOD PRODUCTS, BARBADOS, 1970 - 1980

Million \$

YEAR	EXPORTS		IMPORTS	TRADE DEFICIT	
	SUGAR, MOLASSES, RUM	Other Foods and Beverages, Margarine and Lard		Including Sugar Etc 1/	Excluding Sugar Etc. 2/
1970	37.7	2.5	47.4	7.2	44.9
1971	34.0	4.1	50.9	12.8	46.8
1972	35.0	5.1	60.2	20.1	55.1
1973	38.9	7.6	74.2	27.7	66.6
1974	67.6	6.8	91.4	17.0	84.6
1975	111.2	7.2	92.8	-25.6	85.6
1976	60.7	8.3	97.2	28.2	88.9
1977	62.1	9.0	103.5	32.4	94.5
1978	59.7	12.6	122.7	50.4	110.1
1979	67.6	14.0	137.2	55.6	123.2
1980 (est)	100.0	NA	165.0	NA	NA

1/ Imports less Total Exports

2/ Imports less Exports of Foods and Beverage, Margarine and lard

Minus denotes Agricultural Trade Surplus (1975)

SOURCE Economic and Financial Statistics, Barbados Central Bank, February 1981



are now less favourable following the very sharp decline in world sugar prices at the end of 1980 - from 45¢ per lb in November to less than 20¢ per lb early in 1981.

The major components of the import bill for food and agricultural products are shown in Table 2. Although grains for human consumption e.g. wheat, rice, and livestock feed e.g. corn, represent an important part of the total import bill, large amounts of foreign exchange continue to be expended on purchases of meat, dairy products, fruit and vegetables, mainly from outside the Caribbean region.

Overall self-sufficiency in food:

In order to measure the proportion of total food requirements being supplied from the domestic agricultural sector it is necessary to compare the value of farm output with the value of imports. A formula can be developed to measure self-sufficiency as follows:

$$\text{Self-sufficiency} = \frac{O}{C} \times 100\%$$

where O = Value of domestic output of non-sugar commodities.

where C = Consumption of non-sugar commodities.

This can be re-written:

$$\text{Self-sufficiency} = \frac{O}{O+M} \times 100\%$$

where M = Value of net imports

$$= \frac{1}{\frac{1+M}{O}} \times 100\%$$

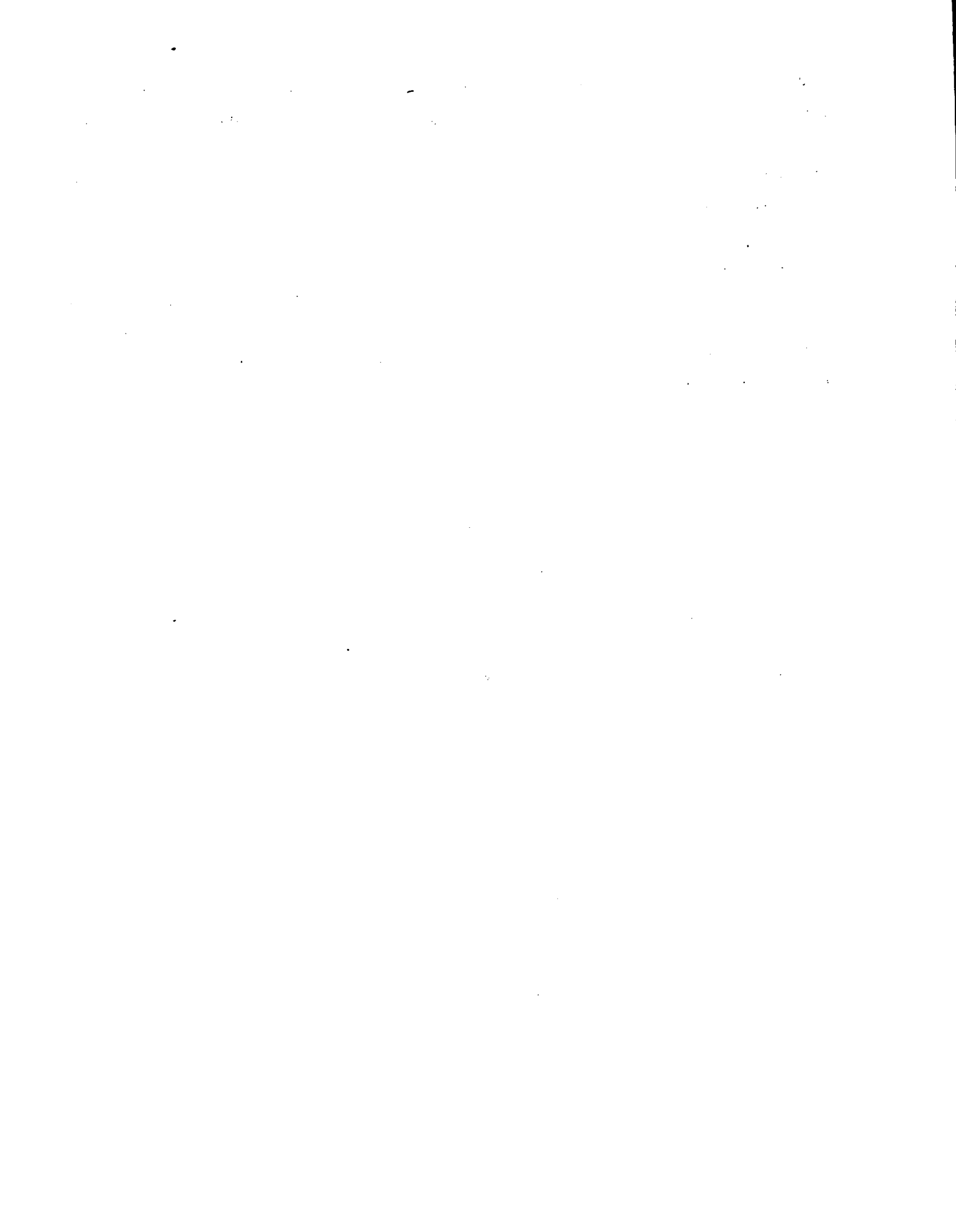


TABLE 2 VALUE OF IMPORTS OF MAJOR AGRICULTURAL AND FOOD PRODUCTS,
BARBADOS 1980

	\$ Million
Grains for food (Wheat, rice)	21.6
Grains for animal feed (maize)	10.3
Beef	21.4
Pigmeat (pork, bacon, ham)	5.4
Mutton	3.5
Poultry meat	3.0
Dairy Products	12.7
Eggs (mainly for hatching)	2.8
Fruits (fresh and canned)	9.9
Irish potatoes	5.1
Vegetables (fresh and canned)	4.0

SOURCE: Barbados Statistical Service,
Overseas Trade, 1980 (to be published)

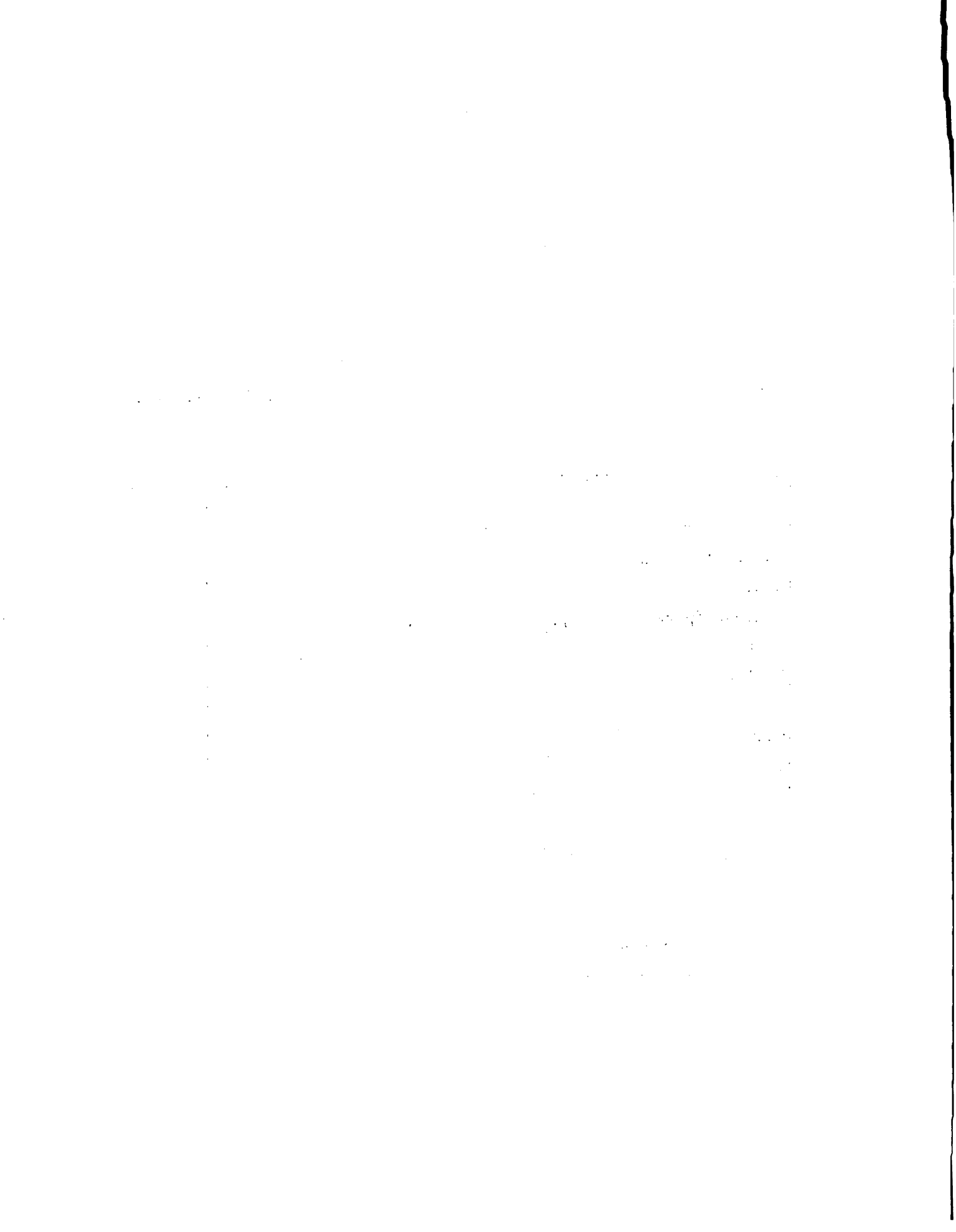


TABLE 3 ESTIMATED SELF-SUFFICIENCY^{1/} IN FOOD REQUIREMENTS (excl sugar+fish)
BARBADOS, 1969 - 1979

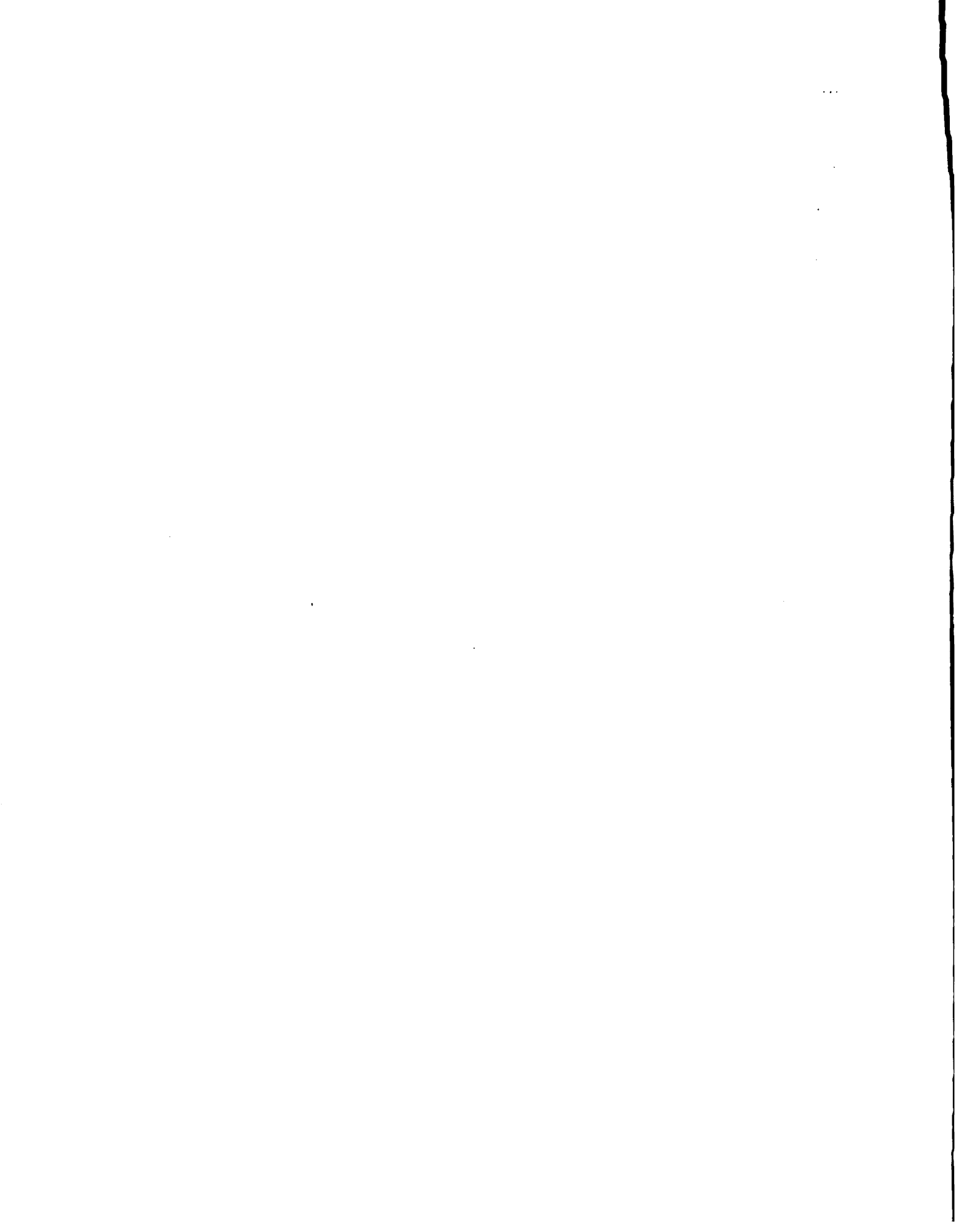
YEAR	VALUE OF FARM OUTPUT	NET IMPORTS OF FOOD	SELF SUFFICIENCY
	\$ Million	\$ Million	per cent
1969-71 (Av)	18.9	31.8	39.5
1972	22.8	42.5	37.1
1973	28.1	51.1	37.7
1974	30.4	64.4	34.2
1975	36.1	60.9	39.5
1976	38.1	67.0	38.5
1977	48.4	67.2	44.2
1978	49.6	76.5	41.6
1979	57.1	87.8	41.7

$$\text{1/ Self-Sufficiency} = \frac{1}{1 + \frac{M}{O + 10\%}} \times 100$$

Where O = Value of domestic output

Where M = Value of net imports

SOURCE: Calculated from Appendix Tables 1 and 2



In order to make a direct comparison of the value of domestic output with imports, a factor of 10 per cent has been added to the farm gate values to compensate for the increased processing and packaging of imported products. The revised formula can then be stated as:

$$\text{Self-sufficiency} = \frac{1}{1 + \frac{M}{0 + 10\%}} \times 100$$

Utilising this formula in relation to recent values of farm output and net imports (Appendix Tables 1 and 2) it is possible to evaluate the trend in self-sufficiency in food requirements in Barbados since 1970. The results of the analysis are shown in Table 3.

The analysis suggests that there has been little improvement in Barbados' capacity to supply its requirements of non-sugar commodities since the early 1970's. At present only approximately 40 per cent of the total requirement of these commodities is derived from the domestic agricultural industry with the remainder being provided by imports.

Self-sufficiency for individual commodities

The proportion of Barbados' food requirements produced at home varies between individual farm products. In order to analyse the trend for each individual product an analysis of the available data by commodity groups since 1970 has been undertaken using two methods:

- (i) in terms of value, as above, and
- (ii) in terms of weight, by comparing the tonnage of domestic production and imports.

The results of this analysis for each commodity group is shown in Tables 4 and 5 and illustrated in Chart 1 and shown for individual commodities in Charts 2 - 4.

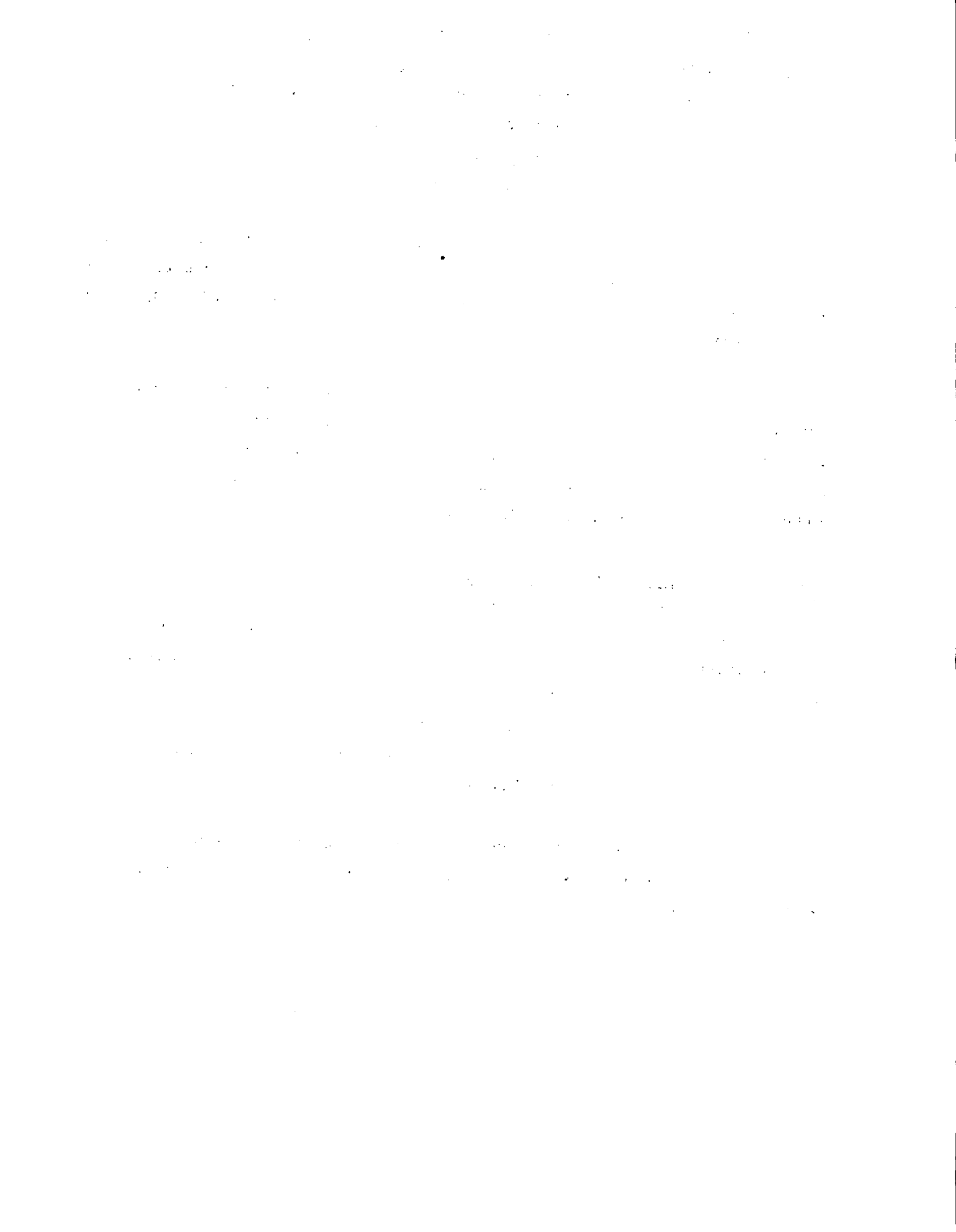


CHART I SELF SUFFICIENCY IN SELECTED
AGRICULTURAL PRODUCTS BARBADOS 1968 - 1980.

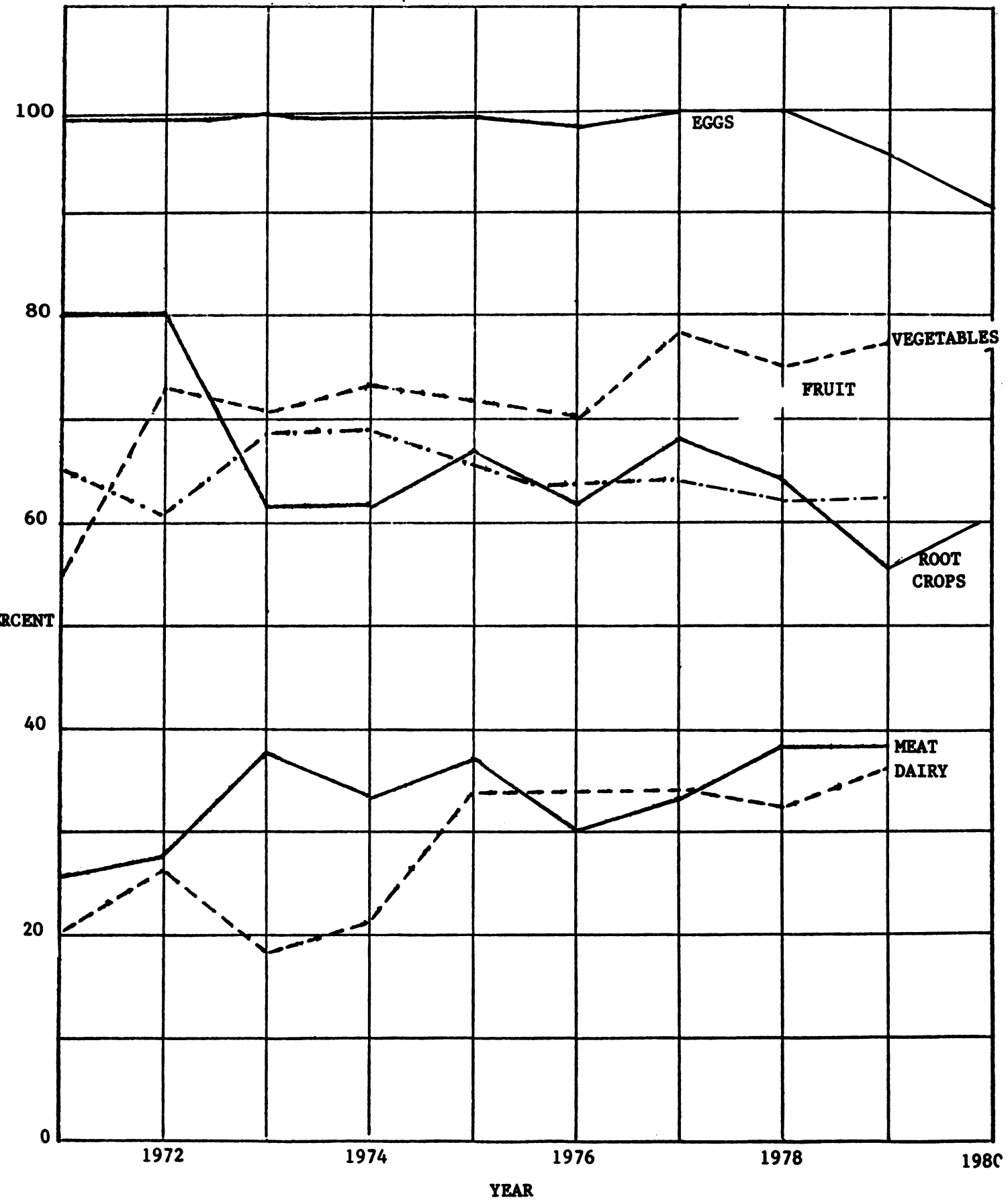


TABLE 4 ESTIMATED SELF-SUFFICIENCY IN SELECTED AGRICULTURAL COMMODITIES

1/
BARBADOS 1969-71 (AV) to 1979

	Average 1969-71	1972	1973	1974	1975	1976	1977	1978	1979
	-----per cent %-----								
<u>Meat</u>									
Beef	18	11	13	16	7	6	6	7	6
Pork <u>2/</u>	54	49	41	39	33	54	69	63	57
Mutton	26	19	16	18	11	19	18	26	9
Poultry	27	43	62	67	74	72	87	75	75
<u>Dairy Products</u>	23	20	24	26	38	44	48	41	44
Eggs	83	80	78	84	89	87	86	95	99
<u>Fruits and Vegetables</u>									
Fruits	59	57	68	64	64	58	57	54	56
Vegetables	58	66	63	69	70	66	70	63	61
Root Crops <u>3</u>	111	102	98.7	98.7	102	105	103	106	110
<u>TOTAL 4/</u>	39.5	37.1	37.7	34.2	39.5	38.5	44.2	41.6	41.7

1/ Calculated as in Table 3

2/ Including bacon and ham

3/ Excluding Irish Potatoes

4/ Including imported cereals and animal feeds.

SOURCE: Calculated from Appendix Tables 1 and 2

TABLE 5 ESTIMATED SELF-SUFFICIENCY IN SELECTED AGRICULTURAL PRODUCTS

1/

BARBADOS 1968 - 71 (AV) to 1980

PRODUCT	1968- 1971 AVERAGE	1972	1973	1974	1975	1976	1977	1978	1979	1980(P)
<u>Meat</u>										
Beef	18.1	12.5	14.8	16.3	5.0	3.5	3.5	4.8	9.2	10.3
Pork 2/	37.7	38.0	36.2	27.6	22.0	37.1	45.8	43.0	22.8	32.3
Mutton	23.1	13.2	13.9	16.7	6.8	11.2	10.9	17.6	8.6	6.3
Poultry	18.0	29.9	57.5	49.7	50.7	52.5	70.0	66.6	65.2	72.9
Total Meat	25.7	27.2	37.9	33.8	37.8	30.9	38.4	39.0	39.0	44.8
<u>Eggs</u>	99.7	99.3	99.8	99.5	99.7	98.3	99.9	99.9	98.5	NA
<u>Dairy Products</u>	19.3	26.2	18.4	21.4	33.6	33.5	34.8	33.5	36.4	NA
<u>Fruit and Vegetables</u>										
Vegetables	55.8	73.8	71.1	73.8	71.2	70.0	79.2	75.2	77.7	73.0
Fruit	65.7	61.2	69.0	69.5	66.3	65.6	65.2	62.4	62.5	NA
Root Crops 3/	80.0	80.7	54.5	62.0	69.6	62.3	68.3	64.1	55.3	59.7

per cent

1/Calculated in terms of tonnage

2/Including bacon and ham.

3/Including Irish potatoes

(P) Provisional estimate

SOURCE: Appendix Table 3

The results of the two methods show generally consistent trends although self-sufficiency in value terms is generally higher than that calculated in terms of weight. This can be partly explained by (a) many imported products having a relatively low value in relation to their weight e.g. chicken backs and wings, pickled pig trotters, frozen beef; and (b) farm gate prices being usually higher than import prices. In the case of fruits and vegetables, the result are reversed reflecting imports of high value canned and processed products, (Chart 3).

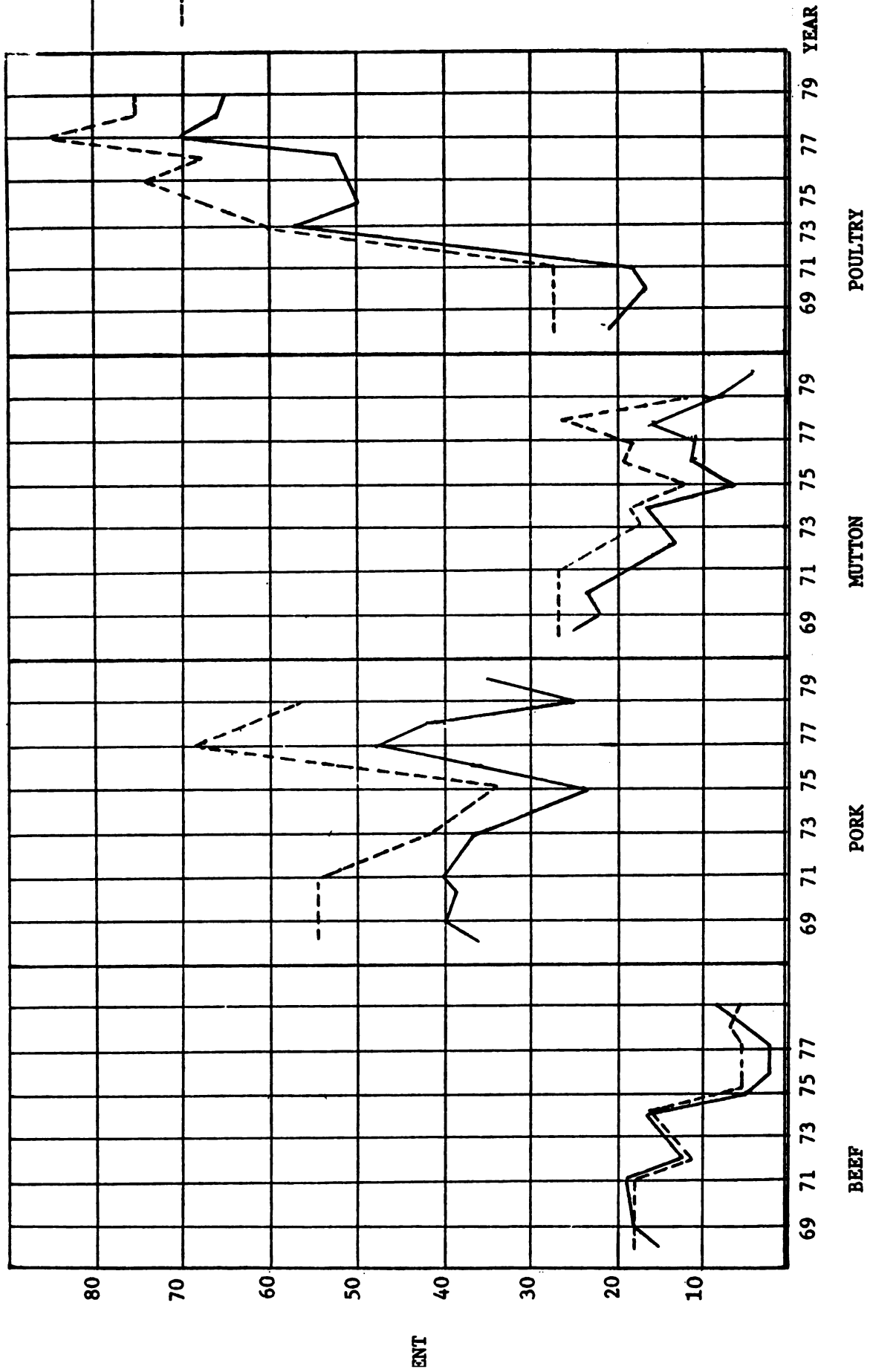
It can be seen that of the eggs consumed in Barbados nearly 100 per cent are produced on the island (Chart 4). In the fruit and vegetable sector including root crops, approximately two-thirds (2/3) of the total requirements are locally produced (Chart 3). On the other hand only about one-third (1/3) of the meat and dairy products consumed in Barbados is domestically produced.

Within the meat group, less than 10 per cent of beef and mutton consumption is obtained from domestic sources with the remainder being supplied from overseas mainly New Zealand and Australia. In the case of poultry and pork, a considerable greater proportion of requirements is locally produced (Chart 2). However, it is necessary to recognise that a very large part of the feed for pork, egg and poultry production in Barbados is obtained from overseas. It is estimated that imported feed grains and other feeding stuffs for animals were valued at over \$10 million in 1979 (Appendix Table 2). The change in the value of total imports in the last ten years is shown in Chart 5.

PROGRAMMES AND POLICIES TO INCREASE FOOD SELF-SUFFICIENCY

It is clear from the above analysis that Barbados continues to be very dependent on imported food supplies both as finished commodities (meat and dairy products) and inputs into the domestic livestock industry (feed

CHART 2 SELF SUFFICIENCY IN MEAT PRODUCTS BARBADOS / 1968 - 1980



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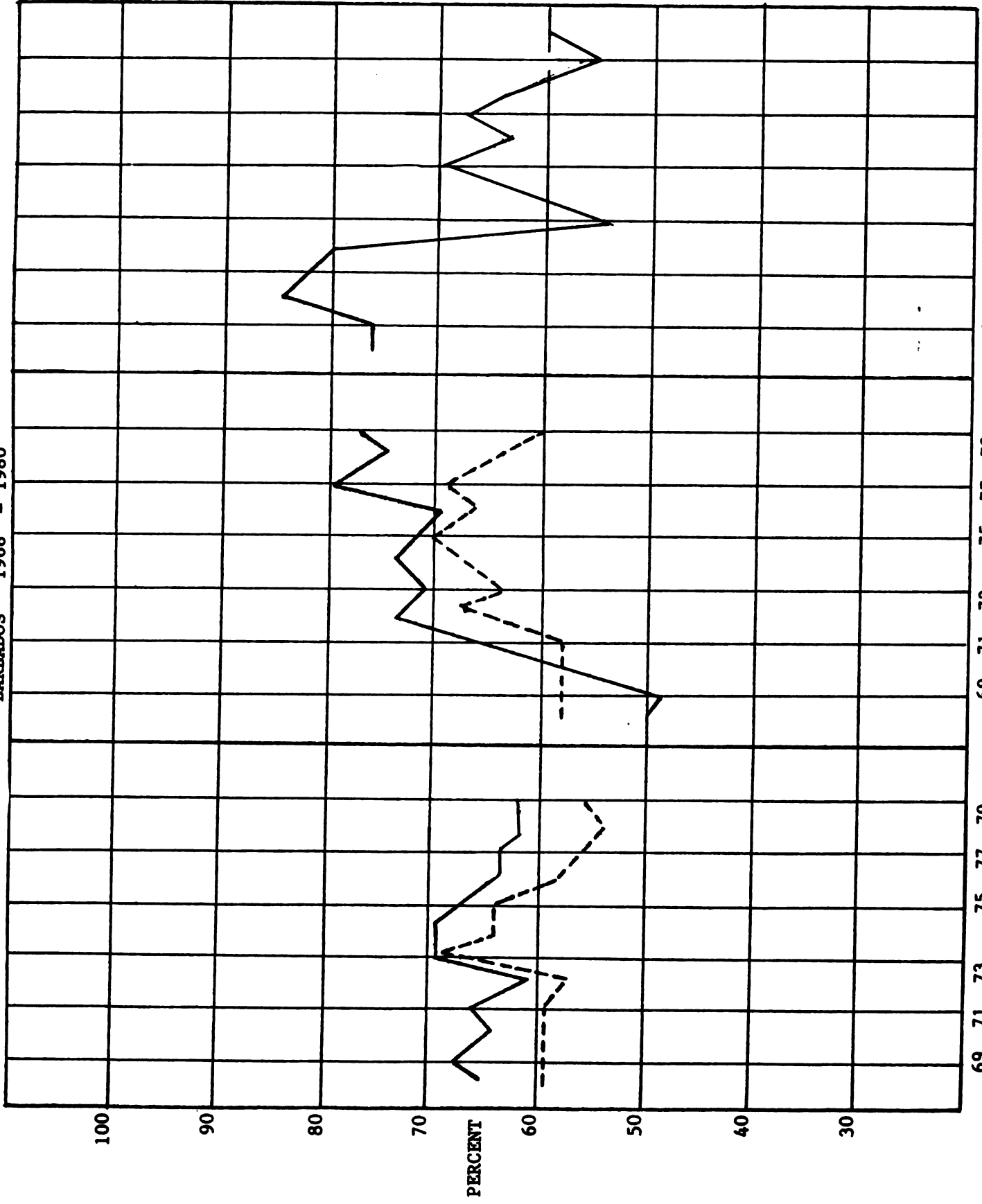
-----VALUE

YEAR

ROOT CROPS

VEGETABLES

FRUIT





grains) and the food processing sector (milling wheat, malting barley). Further increases in the prices of these imported products are likely as the world food situation becomes more acute and freight rates continue to rise. These developments will exert additional pressures on the economy. In order to counter these pressures, it would seem advisable that incentives should be provided in selective areas to encourage greater self-sufficiency and self-reliance in food supplies.

Considerations might be given to action in the following areas:

1. Livestock - Feed Sector

(a) Pigs and poultry

The expansion in the output of pork, poultry meat and eggs which has been achieved in recent years could be jeopardised if further increases in feed grain prices occur. It will therefore be important that available domestic feed resources such as grain by-products from the flour mill and the brewery be utilised to the maximum extent possible. Similarly by-products from the meat processing and the fishing industries should be utilised to a greater extent to substitute for expensive imported protein supplements. Feed manufacturers should be encouraged to utilise these valuable domestic feed sources to a greater extent.

(b) Dairy and beef

An excessive proportion of the rations of dairy and beef cattle in Barbados is currently supplied by cereals. Encouragement needs to be given to the growing and conservation of improved forage crops which would replace a significant part of feed grains and protein supplements currently being fed to cattle. Similarly greater use should be made of by-products from the sugar and food processing

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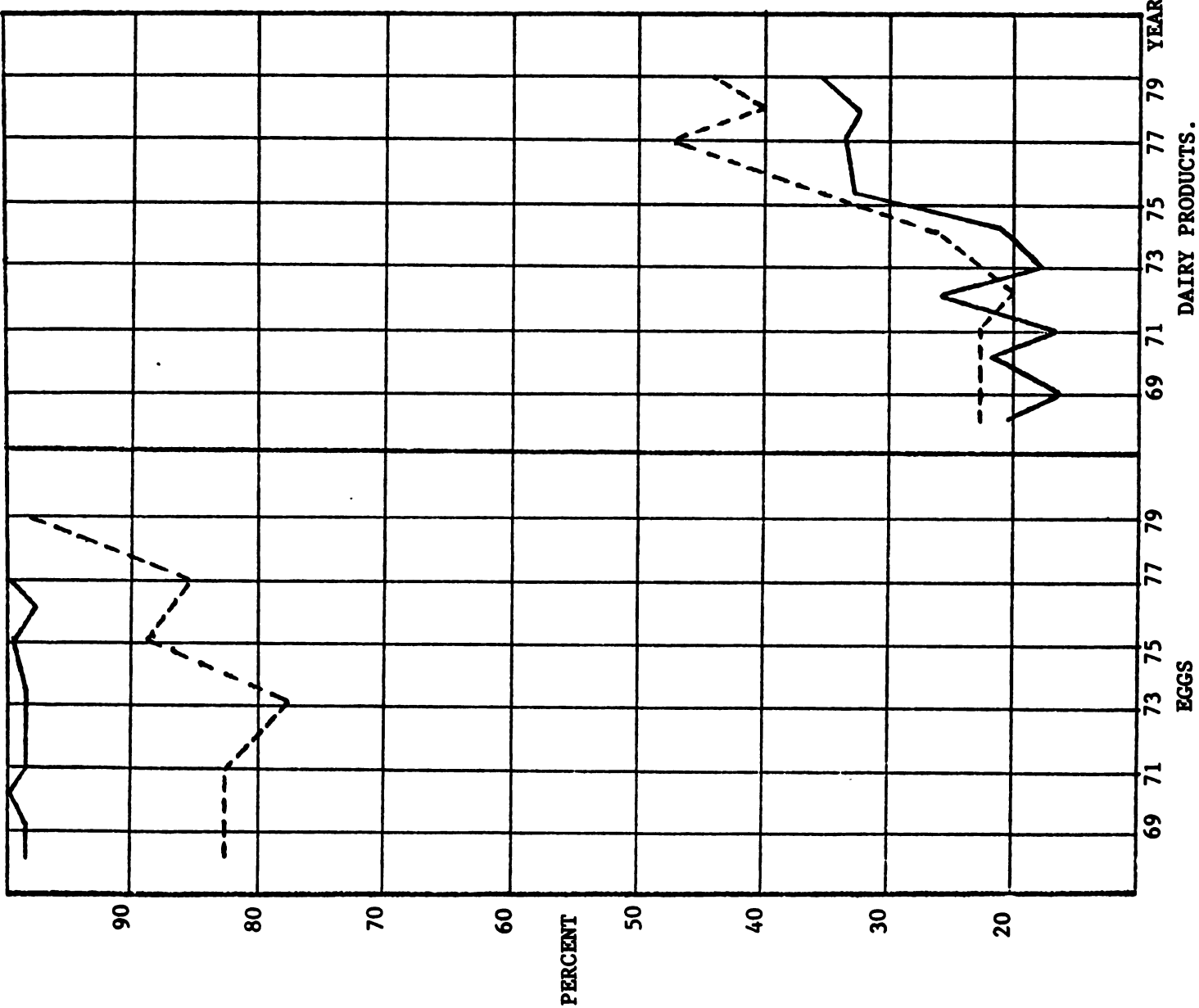
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industries such as molasses, cane tops, brewers grains. In this way economies in the use of concentrate feeds can be achieved without loss of output.

2. Fruit and Vegetables (including Root Crops)

Vegetables represent one sector where improved self-sufficiency has been achieved in a number of areas. Further progress can be made by extending the growing season through the use of improved varieties and irrigation in order to provide a more consistent supply of high quality produce for the consumer. In addition, consideration might be given to restricting supplies of imported Irish potatoes so that an increased proportion of domestic requirements of root crops can be supplied by yams and sweet potatoes.

An expansion in fruit output is by necessity a longer term process. However the present encouragement provided by the Ministry of Agriculture for increased fruit production should be sustained. Prospects would appear favourable for the sale of increased fruit output at remunerative prices especially in the case of avocados, bananas, limes and mangoes.

The declining self-sufficiency in root crops is a matter of concern. It could result in a sharp increase in food costs for low income groups if further increases in the price of imported potatoes occur. Improved storage of yams and an extended growing season for sweet potatoes by use of irrigation could result in increased and more consistent domestic consumption of these crops throughout the year.

3. Increased Exports

Expanded self-sufficiency should not only be viewed in terms of replacing imports. Encouragement should be given to increased exports of those commodities in which Barbados has a comparative advantage. The majority of countries

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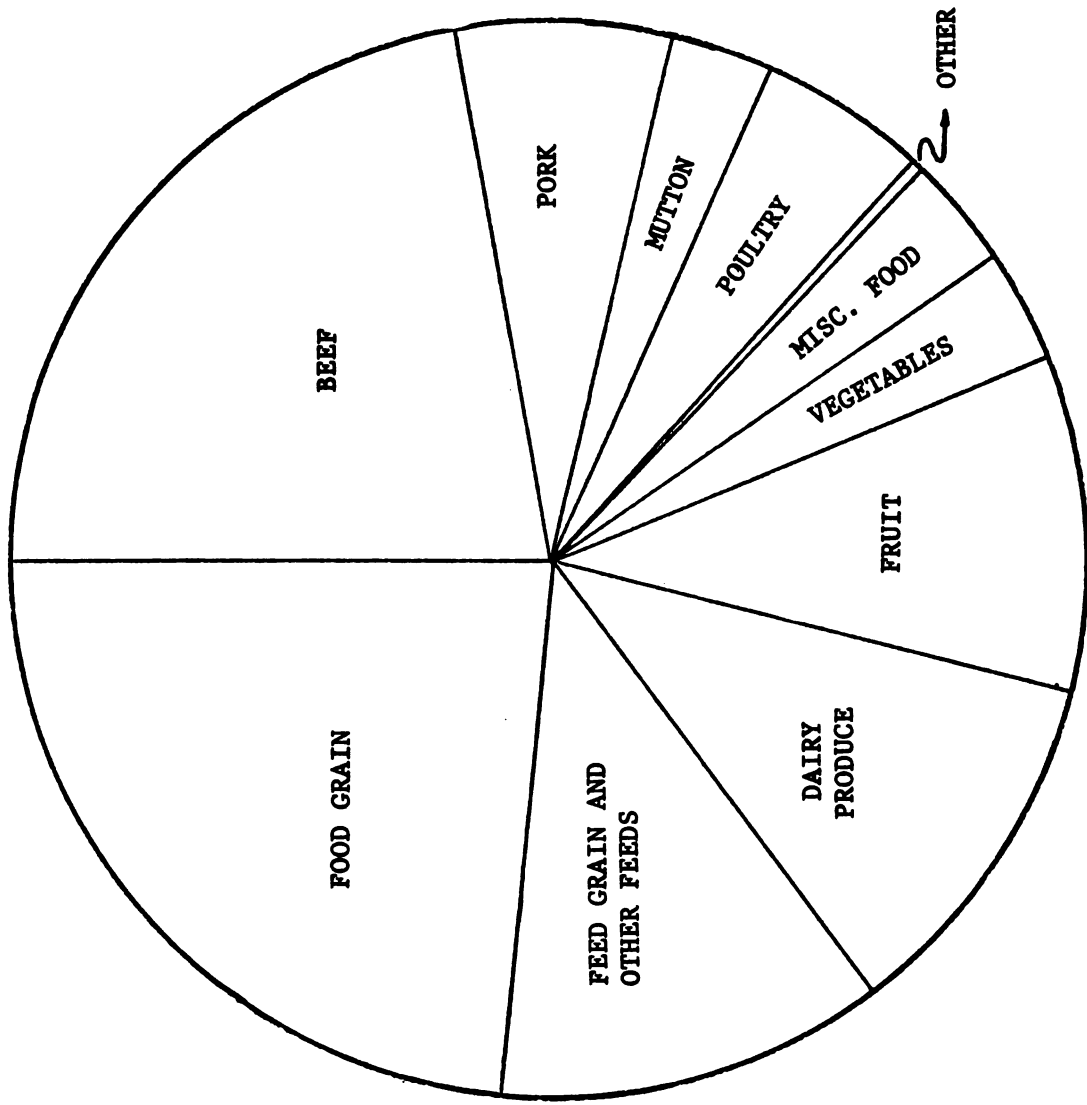
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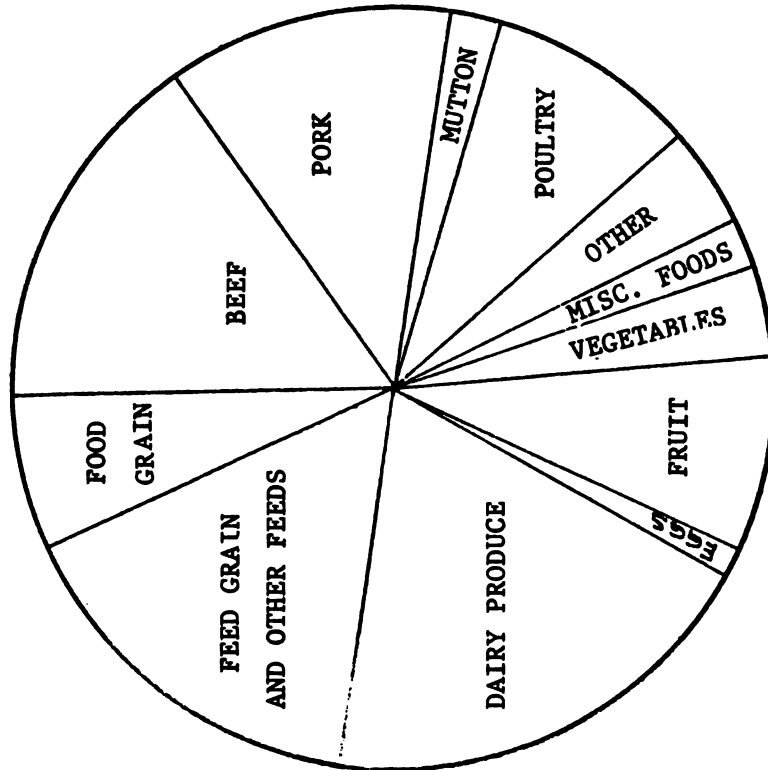
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CHART 5 VALUE OF NET IMPORTS OF SELECTED AGRICULTURAL

COMMODITIES BARBADOS 1969-71 (AV) \$1979



TOTAL \$87.8 MILLION
1979



TOTAL \$ 31.8 MILLION
1969 - 1971 (AV)

provide incentives and subsidies for exporting, and farm products should not be excluded from such programmes in Barbados. There is considerable potential for increased exports of yams to the United Kingdom and the U.S.A. Within the Caribbean region, additional export opportunities will arise as transportation facilities improve for onions, carrots, and other vegetables and possibly pork.

4. Import Replacement

Some opportunities exist for directly replacing a part of the imports of some items. Some progress is being achieved in relation to peanuts, garlic, and some other crops. If feed grain prices remain high for an extended period, experimental work in relation to the domestic production of substitutes e.g. cassava, may be justified. Alternatively, intensified research may be justified in relation to maize and sorghum varieties capable of producing higher yields, particularly in the low rainfall areas where sugar yields are low.

SUMMARY AND CONCLUSION

Barbados' heavy dependence on imported food supplies could place increasing pressure on the economy in the near future. Because of less favourable prospects for tourism and exports of manufactured products together with the rapidly increasing import bill for energy, less foreign exchange will be available to pay for imported food. At the same time, these supplies of imported food are becoming more expensive. Against this background, consideration should be given to providing additional incentives for the selective expansion of non-sugar agriculture.

In the past, exports from the sugar industry have provided a buffer against the increasing import bill for food. At present there is no certainty that export earnings from sugar, rum and molasses will continue to be sufficient to offset escalation in the cost of food imports. The present very volatile nature of sugar prices and the labour difficulties facing the domestic industry introduce further uncertainties as to the future role of the sugar industry. In addition, new concerns have recently developed in relation to sugar exports under the A.C.P. Agreement as a result of the threatened closure of a major United Kingdom refinery. In view of these development there is justification for an intensified diversification programme with an increased budget as a necessary insurance for the future financial situation of the nation. As can be seen from the progress achieved in increasing poultry, egg , pork and vegetable output, producers are ready to increase production if encouragement is provided.

In addition to incentives for increased domestic production, improvements are required in the existing licensing machinery for regulating the importation of food commodities. Lower priced imports on occasions arrive at times when local supplies are available. Improved information and monitoring systems are required if expanded domestic production on a consistent basis is to be achieved.



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VI. APPENDIX



APPENDIX TABLE 1

ESTIMATED VALUE OF OUTPUT OF SELECTED
AGRICULTURAL COMMODITIES, BARBADOS, 1969 - 1979

	Average 1969-71	1972	1973	1974	1975	1976	1977	1978	1979
\$ 000									
<u>Meat</u>									
Beef	972.0	896.7	1280.0	1463.9	644.0	792.6	860.0	1260.4	1082.8
Pork	4092.8	4185.8	3862.4	3174.1	2740.4	6223.4	8747.5	7362.5	7154.2
Mutton	200.8	236.5	280.9	320.5	117.2	261.8	374.2	510.4	215.6
Poultry	964.3	2475.0	4599.1	6303.3	7451.4	7056.8	8401.7	9180.0	12819.5
<u>Milk and Eggs</u>									
Milk	1695.7	1817.3	2515.8	3743.6	3926.2	4900.0	5241.2	5696.2	7022.0
Eggs	1461.2	1564.6	1577.0	3350.0	4907.8	5708.8	5775.0	6160.0	6832.8
<u>Fruits and Vegetables</u>									
Fruits	3483.5	4503.5	6433.5	5361.5	6219.1	5790.2	7205.5	8749.6	10293.6
Vegetables	2126.1	2970.7	3431.8	3921.9	4185.7	3884.9	4555.0	4032.8	4411.3
Root Crops	3877.8	4116.3	4131.3	2750.9	5921.1	3426.7	7197.8	6634.0	7235.8
TOTAL	18874.2	22767.4	28111.8	30389.7	36112.9	38145.2	48357.8	49585.9	57067.6

SOURCE: (i) Ministry of Agriculture, Food and Consumer Affairs.

(ii) Barbados Marketing Corporation

(iii) Barbados Statistical Services.

APPENDIX TABLE 2

1/
VALUE OF NET IMPORTS OF SELECTED AGRICULTURAL COMMODITIES

BARBADOS, 1969 to 1979

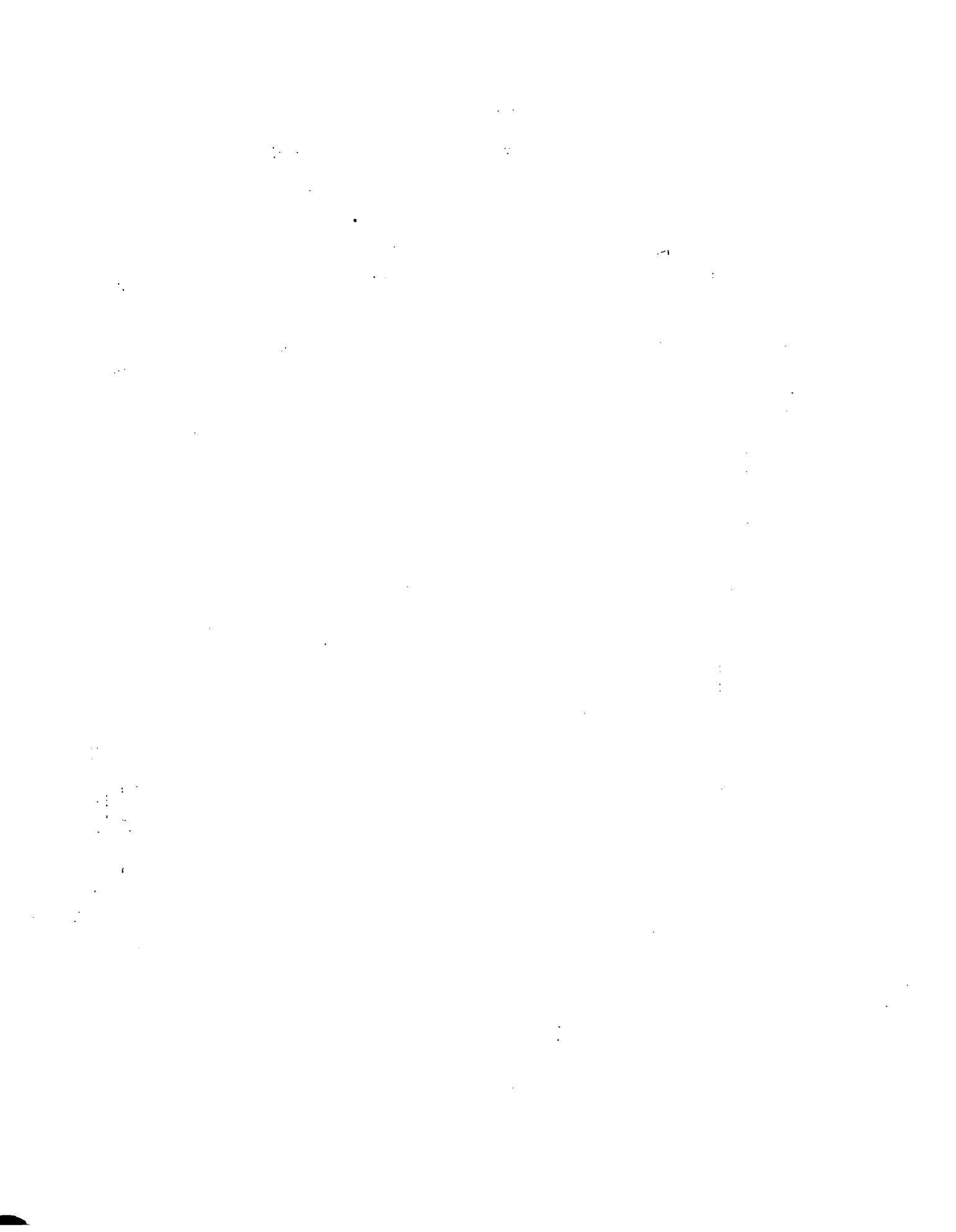
	1972	1973	1974	1975	1976	1977	1978	1979
Average 1969-71								
<u>Cereal and Cereal Prep's</u>								
Food Grains	592.3	2566.8	14598.0	15073.3	14393.2	13883.7	16695.1	20075.8 <u>2/</u>
Feed Gains and Feeding Stuffs for Animals	5119.0	10462.4	7681.1	7654.3	8825.1	11425.6	9153.5	10068.9 <u>2/</u>
<u>Meat</u>								
Beef	5057.3	9150.3	8238.3	10256.3	14410.3	14728.1	18292.4	19499.5
Pork <u>3/</u>	3831.2	6069.5	5500.5	6031.4	5844.9	4368.3	4784.1	5905.0
Mutton	637.8	1602.7	1648.2	1051.4	1233.2	1888.8	1623.3	2408.1
Poultry	2903.9	3114.7	3430.8	2882.2	3083.0	1382.4	3351.0	4765.6
Other	1347.1	1942.4	3540.9	2280.1	1996.7	2105.6	- 760.8	345.9
<u>Dairy</u>								
Dairy Products	6168.3	8085.0	11708.1	7176.1	7003.8	6310.2	9181.7	9806.1
Eggs	328.8	418.8	501.3	726.7	694.5	950.5	1050.5	56.0
<u>Fruit and Vegetables</u>								
Fruits	2632.1	3698.2	3394.9	3396.6	3885.6	4642.7	5993.0	8280.6
Vegetables	1618.3	1716.8	2260.8	1921.5	1958.3	2298.1	2196.1	2679.4
Root Crops	- 435.9	- 74.0	59.7	39.2	- 98.8	- 193.1	- 259.7	- 391.3
Misc. Food Preps	682.5	888.8	1083.6	1955.4	2035.1	2476.5	2146.5	3500.0 <u>2/</u>
<u>TOTAL</u>	31808.6	42472.8	51125.7	64385.3	60879.8	66964.9	67219.1	76471.0
87772.3								

Source: Barbados Statistical Services, Overseas Trade

1/ Net imports: Total Imports less Total Exports (i.e. Exports + Re-exports)

2/ Estimated

3/ Includes bacon and ham



APPENDIX TABLE 3

ESTIMATED SELF-SUFFICIENCY (SS) IN SELECTED AGRICULTURAL COMMODITIES.

BARBADOS, 1968-71 (AV) TO 1980

PRODUCT	1968-71 (Average)	1972	1973	1974	1975	1976	1977	1978	1979	1980(P)
TONNES										
BEEF										
PRODUCTION	532.7	446.9	453.5	373.0	181.4	179.7	169.6	249.0	298.8	382.4
IMPORTS	2443.4	3152.5	2639.3	1942.8	3435.4	4870.9	4738.4	5337.9	4216.1	3330.6
EXPORTS	33.2	30.3	21.1	28.5	8.5	-----	-----	411.1	0.1	-----
NET IMPORTS	2410.2	3122.2	2595.2	1914.3	3426.9	4870.9	4738.4	4926.8	4216.0	3330.6
SS (%)	18.1	12.5	14.8	16.3	5.0	3.5	3.5	4.8	6.6	10.3
PORK										
PRODUCTION	1595.3	1725.8	1459.7	940.9	654.1	1277.1	1586.8	1335.6	802.2	920.7
IMPORTS	2643.9	2820.6	2601.0	2469.1	2241.9	2164.8	1888.2	1784.8	2241.4	1925.0
EXPORTS	8.7	8.0	37.0	5.0	1.4	-----	17.2	17.7	97.1	-----
NET IMPORTS	2635.2	2812.6	2564.0	2464.1	2240.5	2164.8	1871.0	1767.1	2144.3	1925.0
SS (%)	37.7	38.0	36.2	27.6	22.6	37.1	45.8	43.0	27.2	32.4
MUTTON										
PRODUCTION	132.0	114.1	115.8	113.6	35.4	69.8	85.7	105.2	66.2	62.3
IMPORTS	457.7	751.3	719.2	569.6	482.7	552.2	700.9	493.1	678.0	932.0
EXPORTS	18.0	1.7	3.1	1.8	-----	-----	-----	-----	0.4	-----
NET IMPORTS	439.7	749.6	716.1	567.4	482.7	552.2	700.9	493.1	677.6	932.0
SS (%)	23.1	13.2	13.9	16.7	6.8	11.2	10.9	17.6	8.9	6.3
POULTRY										
PRODUCTION	597.6	1496.6	2370.2	2507.6	2896.5	3137.6	3711.2	4260.8	5272.7	5247.6
IMPORTS	2717.4	3512.8	1755.6	2702.3	2815.4	2832.6	1589.4	2137.8	2818.1	1949.1
EXPORTS	2.2	-----	1.1	1.4	-----	-----	0.1	-----	1.4	-----
NET IMPORTS	2715.2	3512.8	1754.5	2700.9	2815.4	2832.6	1589.3	2137.8	2816.7	1949.1
SS (%)	18.0	29.9	57.5	49.7	50.7	52.5	70.0	66.6	65.2	72.9
TOTAL MEAT										
PRODUCTION	2857.6	3783.4	4399.2	3935.1	5400.0	4664.2	5553.3	5950.6	6439.9	6613.0
IMPORTS	8262.4	10237.2	7715.1	7683.8	8975.4	10420.5	8916.9	9753.6	9953.6	8136.7
EXPORTS	62.1	40.0	62.3	36.7	9.9	-----	-----	17.2	99.0	-----
NET IMPORTS	8200.3	10197.2	7652.8	7647.1	8965.5	10420.5	8916.9	9736.4	9854.6	8136.7
(SS %)	25.8	27.1	36.5	34.0	37.6	30.9	38.4	37.9	39.3	44.8



APPENDIX TABLE 3 ESTIMATED SELF-SUFFICIENCY (SS) IN SELECTED AGRICULTURAL COMMODITIES
(cont.) BARBADOS, 1968-71 (AV) TO 1980

TONNES	1968-71 (average)	1972	1973	1974	1975	1976	1977	1978	1979	1980(P)
EGGS										
PRODUCTION	787.3	854.9	861.7	1133.8	1661.0	1681.2	1700.7	1814.1	1600.0	1040.0
IMPORTS	4.1	5.7	7.1	5.8	5.7	29.2	1.4	-----	26.0	155.0
EXPORTS	2.2	-----	5.8	-----	.7	-----	.1	.7	1.6	-----
NET IMPORTS	1.9	12.6	1.3	5.8	5.0	29.2	1.3	-----	24.4	155.0
SS (%)	99.7	99.3	99.8	99.5	99.7	98.3	99.9	99.9	98.5	87.0
VEGETABLES										
PRODUCTION	3618.2	5661.4	5596.1	5751.9	5811.8	5502.5	6777.7	6923.8	7751.8	8139.4
IMPORTS	2218.2	2811.8	2857.1	2222.2	2811.8	2675.7	2086.2	2414.3	2289.7	3000.0
EXPORTS	177.0	802.3	585.5	185.9	466.4	312.7	312.8	211.5	67.9	38.0
NET IMPORT	2041.2	2009.5	2271.6	2036.3	2345.4	2363.0	1773.4	2282.8	2221.8	2962.0
SS (%)	63.9	73.8	71.1	73.8	71.2	70.0	79.2	75.2	77.7	73.0
FRUIT										
PRODUCTION	9632.2	9725.6	9725.6	9725.6	9725.6	9912.6	9912.6	9912.6	9912.6	NA
IMPORTS	5498.8	6394.5	4671.2	4535.1	5077.4	5215.4	5306.1	5986.4	5962.8	
EXPORTS	482.0	236.8	311.6	274.5	138.5	39.4	17.5	20.4	2.7	
NET IMPORTS	5016.8	6157.7	4359.6	4260.8	4940.9	5176.0	5288.6	5965.4	5960.5	
SS (%)	65.7	61.2	69.0	69.5	66.3	65.6	65.2	62.4	62.5	
ROOTS & TUBERS										
PRODUCTION	19031.6	20742.4	12490.7	7797.3	11934.7	9202.7	13635.9	14329.3	8128.0	12331.0
IMPORTS	5835.6	5642.9	8271.1	4999.7	5433.1	5932.7	6854.1	8536.6	7396.9	8812.7
EXPORTS	1215.0	6978.7	839.9	218.7	233.1	373.6	514.2	514.6	843.7	489.3
NET IMPORTS	4620.6	4964.4	7431.2	4781.0	5200.0	5559.1	6339.8	8022.0	6553.2	8323.4
SS (%)	80.5	80.7	54.5	62.0	69.6	62.3	68.3	64.1	55.3	59.7

(p) = Provisional estimates.

$$SS = \frac{\text{Production}}{\text{Production} + \text{Net Imports}} \times 100$$

SOURCE: (I) Ministry of Agriculture Food and Consumer Affairs.

(II) Barbados Statistical Service, "Overseas Trade"

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Autor

AN ANALYSIS OF FOOD
SELF-SUFFICIENCY IN
BARBADOS

Título

Fecha
Devolución

Nombre del solicitante

10 NOV 1987

Rodolfo

DOCUMENTO
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Fecha: