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PROCEEDINGS

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THE CONTRIBUTION OF AGRICULTURE TO THE ECONOMY OF BARBADOS

by

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INTRODUCTION

The overall economy of Barbados has been expanding rapidly within recent years. As can be seen from Table I, the Gross Domestic Product increased from $128.7 million in 1961, to $298.4 million in 1971 and much of this increase has been in the areas of transport, construction and public services, reflecting the rapid growth of the tourist industry over the period. The Government sector also increased substantially over the same period, but the agricultural sector did not keep pace with the other sectors and this was due to the slow growth of income generated from sugar, as well as the modest growth of the remainder of the agricultural sector. Unfavourable weather was the major factor causing low incomes in sugar, particularly in 1968 and 1969. Sugar production was also low in 1972. Per capita income has increased substantially and the tourist industry has been the major factor in this development. The result is, that the agricultural sector declined in relative importance, especially with regard to its contribution towards a favourable balance of payments which was essential for development of the other sectors. We shall consider the contribution of agriculture to the Barbados economy under the two broad headings of; Sugar and Non-Sugar Agriculture.

Sugar

Sugar-cane has been the mainstay of the Barbadian economy for the past 300 years. Its products constituted 16.6% of the Gross Domestic

TABLE I

GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRIAL ORIGIN, 1960–1971

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Sector	Firm Estimates				Provisional Estimates							
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Sugar	25.5	25.9	25.3	37.0	29.7	31.5	32.0	35.1	28.6	24.0	27.1	24.0
Other Agriculture	8.1	8.1	8.4	9.0	9.4	9.9	11.4	12.7	13.1	13.3	13.2	14.0
Construction	11.8	13.6	14.0	14.4	14.6	14.9	15.3	16.4	20.0	22.3	27.5	28.0
Manufacturing and Mining	10.0	12.2	13.3	14.0	15.1	16.2	17.3	18.6	21.0	23.9	27.6	29.8
Transport and Public Utilities	6.8	7.9	8.3	8.5	8.7	9.0	10.3	14.6	18.2	18.4[R]	20.9[R]	24.4
Distribution	27.6	28.0	29.2	33.6	34.1	35.6	37.3	39.2	50.0	59.2	71.2	83.9
House Ownership	6.2	6.2	6.4	6.4	6.5	6.5	6.8	7.3	8.0	9.0	11.1	12.2
Services	12.1	14.5	14.6	15.0	15.4	17.0	17.9	19.5	27.8	29.9	32.2	34.8
Government	11.7	12.3	13.6	15.0	16.5	17.6	21.3	25.8	30.0	35.3	42.7[R]	47.3
	119.8	128.7	133.1	152.9	150.0	158.2	169.6	189.2	216.7	235.3[R]	273.5[R]	298.4

R = Revised

Source: Economic Survey of Barbados, 1971

Product over the period, 1966–68, and the exports of these products were 16% of all exports for those years. At present, the value of sugar, rum and molasses per acre of sugar-cane crop land varies between $750 to $800 approximately and sugar is grown on almost 90% of all crop land. As can be seen from Table II, both the acreage planted in sugar-cane as well as the yield per acre have declined over the past ten years. Some 2,000 acres formerly under sugar-cane, are now planted into other crops, but some of the land has also been used for non-agricultural purposes. Most of the decline in acreage has taken place in the drier rainfall areas, where it is possible for short season crops to grow during the short rainy season.

Total sugar production has fallen as a result of a decline in yield of cane per acre as well as in yield of sugar per ton of cane; and these have been caused primarily from unplanned fires, unfavourable weather since 1967 and shortage of careful workers. The payment for sugar-cane is on the basis of weight rather than on sugar content and varieties are therefore selected on the basis of tonnage of production. It is not surprising therefore, that, as shown in Table II, the production of one ton of sugar in 1970 required 9.3 tons of cane, as compared with 8.8 tons in 1965.

In 1970, there were approximately 1,300 small holdings (i.e. less than 10 acres) producing about 20% of the cane with an average yield of about 21.5 tons. The estates, on the other hand, had an average yield of about 32 tons; but it must be remembered that much of the small holdings are in the low rainfall areas and are therefore less productive than most of the land in estates. Also, small producers are less efficient than the large estates in the use of modern technology and management practices.

The sugar industry has always been the largest employer of labour. Approximately 20,000 persons were employed in the industry in 1960, but by 1970, this number had been reduced to 14,000, or an average drop of about 3% per year. Indications are that this trend will continue, as young persons are not attracted to the industry. In 1969, about 40% of sugar-cane workers were over 55 years of age, whereas only 20% of the total labour force is in this age group. Since 1967, the seasonal labour

TABLE II

ACREAGE, YIELD AND PRODUCTION OF SUGAR CANE AND YIELD PRODUCTION OF SUGAR IN BARBADOS, 1961–1970

Year of Harvest	Total Acres ('000)		Tons of Cane		Sugar Production		Tons of Cane per Ton Sugar
	Planted	Reaped	Total ('000)	Per acre Reaped	Total ('000)	Per acre Reaped (T)	
1961	65.2	49.4	1,378	27.9	159.5	3.22	8.6
1962	64.4	49.0	1,435	29.3	158.5	3.23	9.0
1963	66.3	50.0	1,681	36.4	190.7	4.12	8.8
1964	65.3	50.8	1,476	29.0	161.5	3.17	9.1
1965	62.6	49.9	1,731	35.0	196.0	3.95	8.8
1966	65.4	51.5	1,559	30.3	171.9	3.34	9.0
1967	65.0	52.2	1,826	35.0	200.6	3.84	9.1
1968	61.7	50.6	1,369	27.0	159.1	3.51	8.6
1969	62.6	50.5	1,264	25.0	138.5	2.74	9.1
1970	62.0	49.8	1,433	28.8	153.9	3.09	9.3

Sources:

1. Ministry of Agriculture.
2. Barbados Sugar Production and Export Control Board.

force on the plantations has been supplemented by immigrant workers from St. Vincent and St. Lucia and the industry has become increasingly dependent on this labour, as numbers have risen from 282 in 1967 to 1,365 in 1970. As living standards and job opportunities increase in these islands, there is the possibility that this supplementary labour force may become more and more difficult to obtain and it may be necessary for the sugar industry to find means of attracting young local persons into the industry, perhaps by way of offering training courses and by increasing wages for certain types of jobs.

Over the last decade, there has been a considerable increase in the wage rate for agricultural workers; but despite this, as well as increases in other unit costs of production, the sugar industry has managed to survive by preventing any significant increase in the overall manufacturing costs of sugar. Despite this performance in largely offsetting cost increases by increasing production efficiency, the industry has been nevertheless subjected to an increasing cost-price squeeze.

From studies carried out in 1969 by the Ministry of Agriculture and the Barbados Sugar Producers Association, it was shown that the gross margins from producing sugar-cane were generally lower than for producing other crops, particularly in the low-rainfall areas. One advantage with sugar, however, was that the income derived from it was guaranteed, whereas there was general uncertainty about the income from other crops and this is particularly true if there were rapid increases in production from the other crops, with the possible exception of corn and sorghum. Furthermore, the net export value per acre of sugar-cane is substantially higher than for any other crop, except for some fruits and vegetables and it is important therefore for Barbados to maintain its production of sugar at or about the quota level, insofar as this is feasible. The conversion of cane land to corn production may not cause a great loss to foreign trade, especially if the corn can be utilized for human consumption and animal feeds.

The decline of domestic workers in the sugar industry has caused concern over canes remaining unharvested and steps have been taken within

recent years to mechanize cane harvesting. There are two limitations to complete mechanization, the first being that the slopes on some of the cane lands are too steep and secondly that too much of "trash" adhere to the cane after cutting. It is believed that the existing machinery is feasible only on slopes of less than 10% and this means that approximately 28% of the land now under sugar is unsuitable for mechanical cultivation.

At present, the bulk of Barbados' sugar is sold in the U.K. market on preferential terms, under the Commonwealth Sugar Agreement. Barbados has a nominal quota, but the Agreement terminates at the end of December, 1974. As yet there are no arrangements for Commonwealth sugar to enter either the United Kingdom or the European Economic Community, except for a transitional period up to mid 1975, when the quotas are to be reviewed. It is vital for Barbados and the other members of the West Indies Sugar Agreement to obtain quotas after 1974 and any increase in sugar production will strengthen the bargaining position with Britain.

Non-sugar Agriculture

Although sugar-cane is well adapted to the natural environment of Barbados, and has been dominating the agricultural scene for the past 300 years, it became necessary over a decade ago for the Ministry of Agriculture to recommend crop diversification, not only to overcome the structural rigidity of the agricultural sector economy, but also in an attempt to reduce the growing deficit in the balance of payments on current account, resulting from the increased overall costs of food imports. While sugar is likely to remain the primary source of export revenue in the forseeable future, and while it still is necessary to continue to promote the efficiency of its production, some emphasis must be given to non-sugar agriculture to supplement agricultural income, as well as to safeguard against potential problems. In Barbados, there appears to be substantial need for import substitution, since the value for food imports rose from $23.2 million in 1961 to $57.8 million in 1971.

There is scope for import substitution with respect to fruits, vegetables, starcy roots, pulses and animal feeds, despite the many

problems which will continue to interfere with diversification objectives. Such problems include limited rainfall, crop diseases and insect pests.

Fruits

The planting of fruit in Barbados is largely for home consumption and production per tree is only a fraction of yields of commercial orchards in other countries. Modern technology has not generally been applied to fruit production in Barbados, such that the yield of oranges, for example, is about 2,500 fruits per acre, as compared to 40,000 fruits per acre from commercial orchards in Miami. The 1961 agricultural census of Barbados showed that there were enough fruit trees in the island to plant 1,100 acres approximately. Indications are, however, that with proper management and agronomic practices, yields can be considerably increased and be comparable with those from other tropical areas where good practices are applied.

There is a strong need and apparently a favourable situation for citrus production in Barbados, as the rainfall pattern is similar to other citrus producing areas. However, the soils must be reasonably deep and well drained and winds and salt spray could cause problems. The annual imports of fresh oranges, tangerines and mandarins into Barbados is approximately 2,000 tons per year, and this could be produced from 200 acres, if a reasonable average yield of 10 tons/acre is assumed. It is possible that with well managed small farms and family labour, much of these crops could be produced locally and sold as no change in the present marketing system would be required. The importation of other citrus fruits and juices probably could be replaced largely by other orchard crops. The planting of another 400 lime trees would be about enough to cease the imports of limes and lime juice. It will be necessary, of course, for marketing to be distributed over most of the year in order to avoid seasonal gluts.

Barbados imports about half a million pounds of oranges per year, which could be produced on about 60 acres of well managed groves. Less acreage of avocados would be required to remove imports, but the problem in the case of both crops would be the seasonal distribution of

production. Guavas could be considered for the Scotland District, where they are reported to produce well, however, there is no immediate prospect of this crop becoming commercial in Barbados. Any consideration of guava as a commercial crop will have to be based on improved varieties and processing into nectar, juice and jellies. Next to pasture, coconuts as an import substitution crop have the greatest land area requirements, as some 5,000 acres would be required to produce sufficient coconuts to replace current imports of coconuts and coconut products. About half of the island's production grows in the Scotland District area and the trees are free from lethal and red ring diseases, and the rhinoceros beetle, commonly found in other areas throughout the Caribbean.

Other minor fruits that are found in Barbados appear to be adapted to the conditions on the island. For example, the soursop tree (Anona maricata) is reported to be doing well in the Scotland District. Sugar-apple (Anona squmora) and pomegranate (Punica granatum) may be of some demand by the tourist industry. The cashew nut (Amacardium occidentale) often succeeds where nothing else will grow profitably and does well on the ridges and slopes in the Scotland District. The Barbados cherry (Malphigia glabra) bears a fruit which has one of the richest natural sources of Vitamin C. Many of these fruit trees have some desirable characteristics for erosion control as well and indeed the Soil Conservation Section of the Ministry of Agriculture has placed considerable emphasis on agronomic measures and within recent years has greatly expanded its plant propogation work and research on fruit production. More than 40,000 fruit seedlings were propogated at Haggatts Agricultural Station during 1972, including 15,000 citrus, 6,000 Barbados cherry, 10,000 mangoes, 10,000 avocados and 3,000 pawpaws. More than 4,000 Barbados cherries have been planted in the Scotland District by the Soil Conservation Section of the Ministry. A number of orchard trials have also been planted at Haggatts, which, it is expected, will provide long term information on management and cultural practices.

Many years of research will be required in order to select desirable varieties of these fruits and to determine more accurately their economic

feasibility in Barbados. In some cases, varieties already proven in other Caribbean territories may be used. Within recent years, the Government has made tremendous efforts in growing fruit trees and making them available to growers at reasonable prices. Oranges, mangoes and guavas are all estimated to have the possibility of producing average gross margins per acre, substantially in excess of the gross margin from sugar-cane.

With the exception of citrus, it is possible that present numbers of fruit trees in Barbados would be sufficient to meet domestic demand, if they were productive trees of good varieties and well managed. In addition, adequate technical assistance and credit will have to be provided and it may be also necessary for Government to provide subsidies to encourage the establishment of orchards. Prior to this, however, careful studies will have to be made of the feasibility of obtaining satisfactory economic results from planting various kinds of fruits. These studies should include estimates of probable yields, expected costs and prices and prospects for exports.

Vegetables, Root-crops and Pulses

At present about one third by weight of the supply of vegetables is imported, whereas more than 80% of the pulses are imported and only 18% of the root-crops are imported, the latter being in the form of white potatoes. These crops offer the greatest potential profits from minimum investments that are available in agriculture in the country. They also involve, perhaps, the greatest risks in production as well as of failure in marketing. In spite of this, there is enough evidence to show that handsome profits can be realized on small acreages, so long as recommended practices are applied. Vegetable crops and root crops, except white potatoes, yield high incomes per year under good management. In fact, the incomes are higher than incomes from sugar-cane, especially in the low rainfall areas. The pulses are important in the local diets, but yields are still low and profits not as attractive as in the case of vegetables. Root-crops are profitable, but the risks are lower and profits per acre are somewhat less than the more perishable vegetables.

It was estimated that the production of all of these crops totalled about 70,000,000 pounds in 1968, compared with an importation of

about 23,000,000 pounds and the wholesale value of production was estimated at $4.9 million, compared to the c.i.f. value of $2.9 million for the imported items. The data indicated that Barbados was largely self sufficient in the production of these crops, except pulses, white potatoes, onions and processed vegetables. Import substitution was shown to be feasible for peanuts, onions and other fresh and frozen vegetables and it was estimated that about 720 acres would be all the land that was necessary to produce the amounts of these items that were imported in 1968.

It is of interest to note that the acreage planted under onions increased from an approximate acreage of 30 acres in 1969, to 153 in 1971 and to approximately 250 acres in 1972, while production increased from 400,000 as in 1969, to 1.9 million pounds in 1970 and 2.0 million pounds in 1971 and reached a peak of 2.5 million pounds in 1972, representing a 625% increase in production since 1969. The export trade in onions also had a dynamic rise, increasing from 58,950 pounds in 1969; 179,910 pounds in 1970; 850,000 pounds in 1971 and 2,000,000 pounds in 1972. Chances are, that due to certain marketing and agronomic difficulties, the production and export values for 1973 are not expected to exceed those for 1972.

There have also been achievements in the production of peanuts, though not as dramatic as in the case of onions. The acreage under peanuts was 250 in 1972, as compared to 100 acres in 1963, but whereas in 1969 the yield was approximately 1,500 pounds per acre, this had risen to 2,000 pounds per acre by 1972. As to be expected, peanuts imports dropped from 626,365 pounds in 1969, to 461,997 pounds in 1971. In 1972 Barbados was self sufficient in peanuts for 10 months of the year. It is hoped that peanuts would be exported in 1973 and investigations are now underway for the establishment of a peanut processing plant, so as to meet some of the regional demand for the product.

In 1970, the imports of carrots amounted to 205,275 pounds and this was reduced to 117,413 pounds in 1971. Imports dropped further in 1972 and the performance was so satisfactory, that Barbados was allocated

an export quota of 563,200 pounds to CARIFTA territories for the first four months of 1973. It was unfortunate that, due to improper marketing arrangements, farmers had to plough back into the land 62 acres of their carrots and the export quotas could not be met.

The prices of vegetables in Barbados are relatively high and the imported items tend to influence strongly the prices of local products at the farm. Seasonal variation in prices are caused by weather conditions that result in reduced yields in some months of the year. In general, prices of vegetables tend to be higher during the latter part (wet months) of the year, than in the early months.

A survey of vegetable production was completed by the Ministry of Agriculture in 1969 and data was obtained from 42 estates and 82 small farms on which vegetables were produced for sale. This study showed that more than half of the small holders had experienced crop failures at least once for each of the five major crops (beans, cabbage, carrots, cucumbers, and tomatoes). Estates (as shown by Gooding) also experienced crop failures, though not to the same extent. The hawker was the main marketing outlet, with the Barbados Marketing Corporation ranking second. The lack of irrigation was another problem confronting vegetable producers, as only one-third of all the small holders could irrigate more than 1/8 of an acre, although 90% had more than ½ acre in production. Only six of the 42 estates used irrigation. Vegetable crops are mostly harvested in the period, December to March (tourist season), which is also the dry period when irrigation is needed.

Studies of several vegetable crops on estates as well as small holdings have shown that with good management in 1967 and 1968, the gross margins for carrots and beets exceeded $2,000 per acre on small holdings and exceeded $800 per acre for cabbage and carrots on estates. Gross margins on estates were generally less than half as much as those on small holdings, which probably explained by small holders, produced 83% of the vegetable crops. Not only is production higher on small holdings, but the prices received are also higher, largely due to greater fertilizer use and closer plantings. As regards the estates, vegetable crops are generally

planted on preparation land as a cash crop and lower production costs are due to greater mechanization, less fertilizer use and the more frequent sale of crops direct from the field.

Yams are commonly planted on preparation land, where the furrows for sugar-cane are already prepared with spacing of about 5 feet 6 inches between the furrows. There are about 5,300 plants to the acre and the gross margin may be as high as $400, though it is still less, than for most vegetable crops. A recent and important development is the establishment of a pilot Yam Processing Plant, which flakes the yam and prepares it as an instant product. This Plant has been so successful, that currently there are proposals for the establishment of a commercial Plant, thus providing farmers with a guaranteed market for their yam production. It is to be hoped, however, that production costs do not rise to such a level that the final product is priced out of the local as well as the export markets. It is hoped also, that sweet potatoes will soon be processed with equal success as in the case of yams. It must be remembered as well, that the Control Order of 1942 has recently been relaxed and this could lead to a situation where the plant has no yams to process, especially if prices and labour costs for harvesting are unrealistic.

Barbados has made substantial progress in the field of vegetable production and its diversification can be generally regarded as being a success, largely due to research. In the field of vegetable production, intensive research has been carried out in the cultivation of string beans, cabbages, cauliflower, beet, lettuce, cucumbers, onions, sweet and English-potatoes, carrots, tomatoes, melons and cotton. Specialist research has also been undertaken in the fields of pests and disease control, weed control, successional planting and seasonal trials, varietal selection, crop rotation, crop management, irrigation and water management, soil nutrition studies, mechanical harvesting, land preparation methodology, erosion control and the washing, sorting, grading and storage of produce. Research and feasibility studies are also being carried out on various types of food processing (especially for peanuts and pork), corn drying and curing, onion drying and processing, animal feed processing and yam processing as previously mentioned. Some estates are doing research on mechanization for the harvesting of yams and potatoes.

Recent increase in the total production of food crops in Barbados is significant, as the area devoted to vegetable crops increased from 700 acres in 1959, to 1,850 acres by 1971. From the 1968 survey, it was shown that the small farms utilized 10.4% of their crop land for vegetables, while the estates only utilized 0.7%. The estates, on the other hand, planted root crops on 10.6% of their crop land, whereas small farms had only 7.9% on their land in these crops. The Ministry of Agriculture, through an agreement for technical assistance from the Organisation of American States, has placed emphasis on vegetable production for a three-year programme (1970–73) which explains the substantial increases in plantings of the major crops over the past three years.

The production of pulses will probably continue to increase gradually and not fast enough. This is important, especially as Barbadians eat about 80% less protein than they need for good health. It may be necessary to consider mechanization of harvest, if production is to increase substantially.

The successful implementation of any food crop production system depends to a considerable extent, on the marketing systems and techniques. This has presented many problems, despite the lack of sophistication among the local buying product. In many cases, the problems have arisen between the producer and the marketing agency, as there is yet little or no coordination between the quality of production and the systems of collection and distribution. Consequently, producers have at times found that their produce could not be accepted, whereas at other times the marketing agency (B.M.C.) had to dump produce it was unable to distribute. The fact that the producer is encouraged by the Ministry of Agriculture and the B.M.C. functions through the Ministry of Trade, possibly aggravates the situation further.

The production and marketing of increased volumes of food crops over the past four years, came about because of certain adjustments in the existing structure and cultural practices, since that time. For example, there has been technical assistance through the Extension Sciences; some new lands became irrigated; some of the crops were sold under contract

before they were even planted; market information is being developed and research in the Ministry of Agriculture has been useful and applied. There is still the need for improvement in many other areas, e.g. improvement in storage and distribution. Further success will depend on the co-operation between the producer, the private suppliers and the Government, in particular the B.M.C. Marketing arrangements agreed on through the Agricultural Marketing Protocol will also have an effect.

Livestock

Barbados has never been a livestock country, despite the relative ease with which grasses (including sugar-cane) grow throughout the country. The small numbers of livestock have been kept mainly for family consumption and within more recent times, to comply with the Livestock Defence Control Order, 1942. Animals are now kept on a more commercial basis than ten years ago, within which time a milk plant was established. Local dairy herds have been developing and beef is a by-product of these animals. About one-third of milk consumption is the local fresh milk, the remainder being imported evaporated, condensed, dried milk and fresh cream. Realising the need for increased local milk production and the need to increase the number of cows, Government has, over the past years, imported purebred holstein heifers from Canada. In spite of good management, however, the production of milk from these animals has been far below expectations.

As regards feed, corn is the only grain produced for animal feed in Barbados. It has been estimated that 4½ million pounds were produced in 1968–69 from 1,500 acres. The acreage planted in corn in 1972 was also 2,000 acres. If we assume a yield of 4,000 pounds of corn per acre and a total requirement of 16 million pounds, then this corn could be produced on 4,000 acres, which is less than half of the available "preparation land" on sugar-cane each year. In fact, it could be possible to produce this corn without reducing the production of food crops or cane.

The main factors limiting increasing corn production are the low yields per acre and the high labour cost. Until recently, the availability of cheap imported corn was a constraint, but within the past six months the

world grain shortage has caused prices to rise considerably and all of the livestock economies dependent on foreign grain have felt the impact of this shortage. It has been suggested that major increases would be greatly facilitated by mechanization of the harvest and proper artificial drying of the grain.

Besides corn, the by-products of the sugar industry is one of the main sources of animal feed. These products were generally molasses, sugar-cane tops, filter press mud, rum vat yeast and bagasse, of which only small proportions are used in feed. One new product which has developed within recent months is Comfith. This is the white pith, crushed after the peel has been removed from the cane and may also be mixed with chipped cane tops. There is now enough nutritional evidence through research in Barbados, to support the fact that one acre of sugar-cane can support five head of cattle per year, as against one head (approximately) per year from pangola grass.

Over the past decade, the demand for livestock products has been rising and projections show that this demand will continue to rise over the next decade, at a faster rate of growth than the population. This means that until a feed mixing plant is installed, Barbados will be continuing to import livestock products and the imported products would be ever increasing as a proportion of total consumption. Even if we agree that feed must be imported, it is still possible that this could be done under more favourable price arrangements. More attention needs to be given to the improvement of milk production per cow. Cows in the U.S.A., New Zealand and Japan produce milk about 3 to 4 times of cows in the Caribbean and there seems to be no reason why with proper management, milk production per cow could not be doubled. Until this situation can be rectified, Barbados will continue to keep most of its cows in New Zealand. Much research will be needed in all areas of production and management and these seem to be the areas on which to focus attention. The demand for poultry, meat and eggs is expected to increase over the next decade and greater emphasis should be placed on the expansion of that industry. Already the success in the poultry/meat producing industry has been spectacular. In 1971, Barbados produced 1,625,000 lbs. of whole chicken and 375,000 lbs of

whole chicken were imported. In addition, 1,950,000 lbs. of special parts and 4,250,000 lbs. of other parts were also imported. The total consumption was estimated at 8,200,000 lbs. In 1972, it is estimated that approximately 5,000,000 lbs. of whole chicken was produced (170% increase). Total consumption was 9,200,000 lbs. It is interesting to note that Barbados produced ½ of its requirements in 1972, compared with only one-fifth approximately, in 1971.

Sea Island Cotton

Sea island cotton was grown as a commercial crop in Barbados over three hundred years ago. In recent decades, it was grown mainly on low rainfall areas, on both plantations and small holdings, and after the second world war the acreage dwindled, due to pest and disease problems and by 1960 cotton was discontinued in Barbados. However, an investigation into the feasibility of reviving the West Indies Sea Island Cotton Industry was carried out in 1968–69 and the results showed that there was a substantial potential market throughout Europe and North America, and also because of its length, the fibre fetches a premium price in some major markets.

Gross margins per acre are similar to those for sugar and corn at present prices and yields, and it is expected that the demand for land for other crops will restrict the acreage available to cotton to less than 2,000 acres. Increased yields and successful mechanical picking are essential to the success of the Sea Island Cotton Industry.

CONCLUSION

Despite the very shallow, heavy, clay soils and despite often inadequate marketing facilities, the diversification programme and hence the production of food crops in Barbados, can be considered to have been successful. Exports of non-sugar agricultural produce is progressing slowly, but needs to be more organized. One major problem is the decline of ground provision harvesting on many estates and this may eventually lead to a reduction in the acreages of yam and sweet potatoes. There is a need for training in agriculture at all levels, as well as the need for a system of supervised credit.

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