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## TOWARDS THE RE-DIVERSIFICATION OF ST. VINCENT'S AGRICULTURE

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### Introduction

The vulnerability of a country's economy is exaggerated when one crop dominates its agricultural activities, and while the writer recognised the desirability for rapid development of other sectors of the economy, especially in view of the general erosion in the terms of trade in agricultural products vis a vis manufactured products, it is his opinion that where the natural resources of a country are best utilized by agricultural production, the inherent uncertainty of the industry should be spread over as wide a range as is technologically and economically possible.

The agricultural sector discussed in this paper is that of St. Vincent. St. Vincent had a well diversified agricultural base with arrowroot, cotton, copra and sugar making the largest contributions to the value of its exports (Table 1). The traditional root crops and small quantities of fruit and vegetables were also grown for local consumption. This diversified pattern of production was not maintained for long. By 1955 arrowroot starch accounted for 50 per cent of the total exports, with significant contributions from cotton, copra, sugar, sweet potatoes and bananas. By the 1960s bananas accounted for roughly one-half of the value of exports.

The paper intends to show how the range of agricultural activities has rapidly narrowed since the mid-1950's; the paper also discusses the necessity for speedy allocation of agricultural resources in an effort to regain a broader agricultural base.

### The Decline of the Arrowroot, Cotton and Sugar Industries

#### Arrowroot

St. Vincent still maintains its reputation as the world's largest producer of arrowroot starch. However, since 1955 when over 10 million pounds of starch valued at \$1.8 million (E.C.) were exported, exports have gradually declined, not only in relative terms, but absolutely.

The growing competition from bananas was responsible for the decline of arrowroot exports in the latter half of the 1950 decade, in spite of the increasing demand from buyers in the United States. The first signs of labour problems in the industry became evident about the same time when a high proportion of the labour force formerly engaged in harvesting the crop emigrated to Great Britain. The banana industry received a boost in 1962 with the closing of the Island's lone sugar factory and the passing of the Commonwealth Immigration Bill. Land, formerly under sugar cane, was rapidly converted to arrowroot and by 1964, arrowroot production reached a record of 60,000 barrels (of 200 pounds each). But in 1963 Kraft Foods, the Island's largest United States buyer, announced plans to reduce their use of arrowroot starch in favour of a cheaper corn starch.

St. Vincent Arrowroot Growers' Association (the sole marketing agent) was not very successful in its efforts to find alternative outlets, and stocks piled

up in the Association's warehouse in Kingstown. The Association was therefore faced with the unfavourable decision of gradually reducing the price of starch to the grower from 20 cents per pound to 14 cents per pound. The result was a rapid reduction in the annual production of starch to levels below the annual demand, since only the most efficient producers were capable of surviving at that price. This situation allowed the Association to dispose of its surplus so that stocks came down to manageable proportions.

In 1969 the buyers in the United States made a modest increase in the quantity of starch demanded at a slightly improved price so that the Association was faced with the problem of meeting the demand. The Association offered 17 cents per pound to the producer for the 1969/70 crop and 20 cents per pound for the 1970/71 crop in the hope that the price increase would call forth the additional supply. But it is doubtful if arrowroot producers will answer the call, for the industry is now experiencing serious labour problems.

Arrowroot is still harvested manually, an operation which accounts for approximately 50 per cent of the cost of production. Apparently manual harvesting is unattractive work to labourers and the harvesting of the last two crops has been protracted. Even an approximate 20 per cent increase in the wage rate has not had any significant effect in increasing the supply of labour which now consists largely of men and women over 40 years of age. On the largest arrowroot producing estate about 29,000 baskets of rhizomes were harvested in November-December, 1968. Only 7,000 baskets were harvested over the corresponding period in 1969.

Half-hearted attempts to harvest the crop mechanically in the late 1950s and early 1960s were abortive and it is envisaged that unless the harvesting operation is speedily mechanised the St. Vincent Arrowroot Growers' Association will not be in a position to meet its market commitments beyond 1972.

### Sugar

Table 1 shows that sugar in the 1950s contributed 5 to 8 per cent to the Island's exports. But the industry was more important than this modest contribution to exports indicated, since the industry was not only a major employer of labour, but saved St. Vincent \$0.8 million annually of foreign exchange.

Sugar cane was concentrated on the east and north-east coasts of the Island where soil and climatic conditions were most suitable to its growth. A single factory was centrally located on one of the larger estates. But the industry died in 1962 when the factory ceased operations as the owners found it economically impossible to continue under the pressure of almost annual strikes and rising wage rates.

### Sea Island Cotton

St. Vincent was renowned for its fine Sea Island cotton, most of which was grown on the south eastern and south western corners of the Island. These areas, with adequate rainfall in the early months and a dry spell for ripening and harvesting, were ideally suited to the crop. The industry maintained an approximate \$0.3 million value of exports up to 1959 when fire completely gutted the Government owned Cotton Ginnery. Cotton was then exported as "Seed Cotton" to Barbados to be expensively ginned and baled, with consequent low prices to the producer. By the time the Cotton Ginnery was replaced in 1963, production

had slumped to approximately 13 per cent of the 1959 figure, a position from which it has never recovered. Rising wages and the incidence of pests and diseases contributed to its rapid decline, so that today cotton production is non-existent.

### Stability of Coconuts, Nutmeg and Sweet Potatoes

#### Coconuts

In contrast to arrowroot, sugar and cotton, the coconut, as a perennial, is less subject to the vicissitudes of price, labour and technology. Moreover, the crop is largely grown on estates -- the estate-owners can withstand any temporary setbacks. The crop has maintained its position despite the destruction of the copra expelling plant in the 1959 fire. The main result of the fire was to increase the quantity of copra exported and to make the Island more dependent on the importation of edible oil, laundry soaps and cattle feed. This situation was corrected in 1968 when the first of two privately owned copra oil factories went into operation. St. Vincent's membership in the West Indies Oils and Fats Agreement also contributes to the industry's stability.

#### Nutmeg

Nutmeg is mainly grown by small farmers who are not too heavily dependent on it since each grower hardly owns more than about 10 trees. But the total tree population of about 6,000 (1956-58) is small in relation to the value of the crop, and it is envisaged that further expansion will take place in the future, especially on estates.

#### Sweet Potatoes

The sweet potato, grown mainly in the south eastern corner of the Island has to a large extent replaced cotton. The traditional market with Trinidad has been maintained and strengthened with the inception of the St. Vincent Marketing Board in 1959, and more recently with the price fixing mechanism and the inclusion of the crop in the Agricultural Protocol list of CARIFTA. The Board is obliged to purchase all sweet potatoes and is the sole exporter. Also contributing to the stability of the potato industry is the fact that it is grown by small holders where almost 80 per cent of the labour requirements are supplied by the family. Also potato growing required the minimum of capital expenditure for materials and moreover, two crops may be grown per year.

### The Emergence and Growth of the Banana Industry

The history of the spectacular growth of the banana industry in the Windward Islands is well known. In St. Vincent it took only three years (from 1954-1957) for the industry to become the largest contributor to total exports; since 1957 it has been contributing between 40 and 50 per cent of the total value of exports.

Major factors for the growth of the banana industry are:

- (a) an efficient marketing organisation
- (b) the extension of credit in the form of fertilizer
- (c) the assurance of a regular weekly income to the small producer
- (d) the large input of family labour (approximately 75 per cent)
- (e) sustained control of pests and diseases
- (f) an efficient research unit - Windward Islands Banana Association
- (g) the closing of the sugar factory and weaker competition from a declining arrowroot industry.

## The Need for Re-diversification

While the growth of the banana industry has been welcome and it has made a considerable contribution to the Island's economic activity, the overwhelming dependence on it leaves the Island vulnerable to almost total economic bankruptcy in the event of the industry's collapse. It will not be difficult to envisage the plight of the small producer who depends almost exclusively on his weekly banana sales. There is no greater threat to the banana producer's survival than England's possible entry into the European Economic Community without adequate safeguards being taken to maintain preferential marketing arrangements of Commonwealth territories like St. Vincent. With the Island's accession to Associated Status in 1969 dependence on its own resources takes on added significance, and its greatest resource is the land. Moreover, as Figure 1 shows, total agricultural exports have remained almost static over the twelve year period 1955-1967 despite the growth of the banana industry.

Whereas the decline of the arrowroot, sugar and cotton industries was buffered by the emergence and growth of the banana industry and the stability of coconuts, nutmegs and sweet potatoes, there is at the moment no crop to which farmers could readily turn and still maintain their rising living standard.

It is therefore the writer's feeling that at this particular point in time the formulation and execution of an agricultural development policy which will once more place the Island's agriculture on a more diversified base is appropriate.

## Strategy for Re-diversification

Any re-diversification programme must take account of the utilization of the available resources and the market prospects for individual crops. The crops recommended should be those whose production would avoid the pitfalls which accounted for the decline of the arrowroot, sugar and cotton industries while at the same time taking advantage of the factors which contributed to the stability of coconuts, nutmegs and sweet potatoes and the growth of the banana industry.

The factors which the writer considers should influence the choice of crops are:

- (a) very little dependence on paid manual labour
- (b) the assurance of a market outlet
- (c) the availability of credit
- (d) possible local linkage to processing or the availability of regular shipping where the crop is perishable
- (e) the crop's suitability to local soil and climatic conditions
- (f) the production of two or more crops per year
- (g) the crop's contribution to the local diet.

With these factors in mind and knowing that all may not be operative in the case of any single crop, it is recommended that a re-diversified programme should lay emphasis on:

- (a) the maintenance of the banana industry
- (b) the development of ground provisions and vegetables
- (c) the re-introduction of the sugar industry
- (d) the establishment of tree crops
- (e) the expansion of groundnut production.

### The Maintenance of the Banana Industry

Bananas now occupy approximately 10,000 of the Island's 37,000 acres of arable land. Any expansion of production must come from increased yields per acre rather than increased acreage. This could only be effected by rigorous adherence to the agronomic practices recommended by WINBAN. The writer considers it important to the Island's economy to take advantage of the English market while it lasts and emphasising increased yields per acre and improvement in fruit quality would be assets to the industry should the Island's bananas ever have to compete on the free market.

### The Development of Ground Provision and Vegetables

Ground provisions, mainly yams, tannias and eddoes, have been intercropped and used in rotation with bananas. The export of these crops has shown a remarkable increase in the quantity and value as shown in Table 2.

While these crops contribute considerably to the local diet, utilize a high proportion of family labour and have been supplementing farmers' incomes, they have low price and income elasticities of demand and are bulky in relation to value. Their continued production is advocated because of their complementarity with bananas and the extent to which they meet the family food requirements with the available surplus for export. Their production and consumption no doubt contribute to St. Vincent having one of the lowest per capita food imports in the Commonwealth Caribbean (\$50 compared with Antigua \$116; Barbados \$119; and Trinidad and Tobago \$90).

### Vegetables

The existence of local and Carifta markets for vegetables such as carrots, tomatoes, cabbages and onions, suggest that it is desirable to concentrate on the production of these commodities. Their high price and income elasticities of demand and the growing demand from the tourist industry will ensure a continuous market outlet. An all year round supply should be possible because of their relatively short life cycles.

The concentration of vegetable production on farms with ready access to water for irrigation, the continuous guidance of the Agricultural Extension Service and remunerative minimum guaranteed prices offered by the St. Vincent Marketing Board will give relatively high incomes to typically small production units using a high proportion of family labour.

It is also envisaged that vegetables produced in large quantities will reach the bulk of the population at lower prices and that increased local consumption will improve the quality of the diet with its desirable effect on health. Because of their perishability, any surplus could form the basis of a processing industry. It must be pointed out, however, that successful expansion of vegetable production hinges on the availability of regular shipping and air freight services, conditions which at the moment do not obtain.

### The Re-introduction of Sugar

With the demise of the sugar industry in 1962, a high proportion of the land was converted to bananas and arrowroot while much of it has not yet found a suitable crop. Because of the difficulties now facing the arrowroot industry it would not be difficult to get some of these lands reverting to sugar cane. Indeed, farmers in the former sugar belt have always been looking back wistfully to the days of sugar and are praying for its return.

If approximately 1,000 acres are brought under sugar cane with an average yield of 30 tons cane per acre, and given a factory efficiency of 10:1, then the 3,000 tons of sugar produced will at least meet St. Vincent's local requirements.

But the re-introduction of sugar must depend as little as possible on manual labour for harvesting for fear of the appearance of the same labour problems that now beset the sugar industries in the Commonwealth Caribbean. At the outset sugar cane must be geared to mechanical harvesting and only farmers with land of a suitable topography (mostly estates) should be allowed to grow the crop. The new sugar factory should be owned jointly by Government and private enterprise.

The re-establishment of sugar, however, will depend on the availability of credit at low rates of interest since it would involve high capital outlays. The linkage which the sugar industry would have with the transport and other industries and the savings in foreign exchange will be a boom to the economy.

### The Establishment of Tree Crops

Small farmers have always resisted attempts to encourage them to plant tree crops and justifiably so; for while net farm income from tree crops may be high in the future, the small farmer thinks of income for the present. Success in tree crop expansion has thus been limited to plantings of a few trees on small farmers' holdings. However, as pointed out earlier, the estate structure, perennial nature and small labour requirement which contributed to the success of the coconut industry, will make estates ideally suited to the establishment of other tree crops. Cocoa, nutmeg, avocado, mango, lime and grapefruit can all be grown on estates which have soil and climatic conditions suitable to their growth. Some estates have already started to grow cocoa and limes, very limited quantities of nutmeg, but the establishment of grapefruit, avocado and mango in pure stand for the fresh fruit market in U.S.A., Canada and the United Kingdom has not begun. Table 3 shows the quantities of tree crop plants distributed by the Plant Propagation Unit in 1968-1970.

Most of the avocado, nutmeg and mango plants have been distributed to small producers, but it is felt that if estates were to set the example by the establishment and marketing of these crops, medium-sized farms will extend production though modestly as they have already done with cocoa. Limes and grapefruit went almost entirely to the estates and a lime factory has already started to express lime oil and juice.

### Expansion of Groundnut Production

Table 1 shows groundnuts making a declining contribution to the Island's exports. However, in view of the Carifta demand (almost 2,000,000 pounds annually) for the commodity, the suitability to its production of some of the sandy soils to the east and north-east, its dependence on a largely feminine labour force, and the possibility of producing at least two crops per year, encouraging its resuscitation should be stressed. Moreover, the industry could be linked to local processing of peanut butter and salted nuts.

### Conclusion

St. Vincent's agricultural sector is still the major contributor (41 per cent in 1960) to the Island's Gross Domestic Product and is the chief employer

of labour (42.7 per cent in 1960). With one of the highest population densities per square mile of cultivable land in the Commonwealth Caribbean (1,253 in 1960) the necessity of making optimum use of the available land should be considered of highest priority in St. Vincent's development. In advocating a diversified agriculture based on the production of bananas, vegetables, sugar, tree crops and groundnuts, cognisance is taken of the availability of markets, the utilisation of a high proportion of family labour, the suitability of these crops to local soil and climatic conditions, the contribution they make to the local diet and the opportunities for possible linkage to other sectors of the economy.

Table 1     St. Vincent: Percentage Contribution of Major Export Crops to  
Total Exports, 1947-1967

Year	Arrowroot	Cotton	Copra	Bananas	Sugar	Sweet Potatoes	Nutmeg & Mace	Groundnuts
	(..... per cent .....) )							
1947	38.5	11.5	20.5		n.a.	n.a.	n.a.	n.a.
1950	45.0	20.0	15.0		n.a.	n.a.	n.a.	n.a.
1951	54.0	16.0	12.0		n.a.	n.a.	n.a.	n.a.
1952	50.0	15.0	13.0		5.0	4.4	0.9	3.2
1953	48.5	10.0	15.0		6.4	6.4	0.9	4.5
1954	35.0	5.3	11.6		7.0	4.6	0.9	3.5
1955	50.0	8.3	14.0	5.5	8.3	5.5	0.7	2.7
1956	37.5	4.1	10.4	14.6	6.2	6.2	0.7	2.0
1957	28.1	4.1	7.8	40.6	7.8	3.1	0.5	1.2
1958	27.1	5.2	8.6	41.0	5.2	3.0	2.2	1.3
1959	24.2	4.5	7.6	48.5	3.8	3.0	3.0	0.8
1960	23.3	1.7	15.0	46.6	1.2	2.6	1.4	0.8
1961	22.4	0.2	15.0	44.8	1.7	1.7	3.4	0.8
1962	28.0	0.7	13.0	42.6	-	1.6	4.1	0.7
1963	25.0	0.7	12.7	47.6	-	1.9	1.9	0.5
1964	18.5	1.5	12.5	52.5	-	2.0	1.1	0.3
1965	20.3	1.6	12.4	48.4	-	2.3	3.4	0.5
1966	13.4	1.5	12.0	52.0	-	n.a.	n.a.	n.a.
1967	16.0	0.5	12.7	49.2	-	2.5	2.7	0.4

Source: Department of Agriculture, St. Vincent: (1) Annual Reports, 1952-1960  
(2) Annual Trade Reports, 1955-1967.



Table 2      St. Vincent: Quantity and Value of Exports of Yams, Tannias and Eddoes, Selected Years

Year	Quantity	Value
	(pounds)	(\$E.C.)
1955 ...	128,691	6,415
1960 ...	560,030	31,568
1965 ...	966,310	53,479
1967 ...	3,036,254	162,090

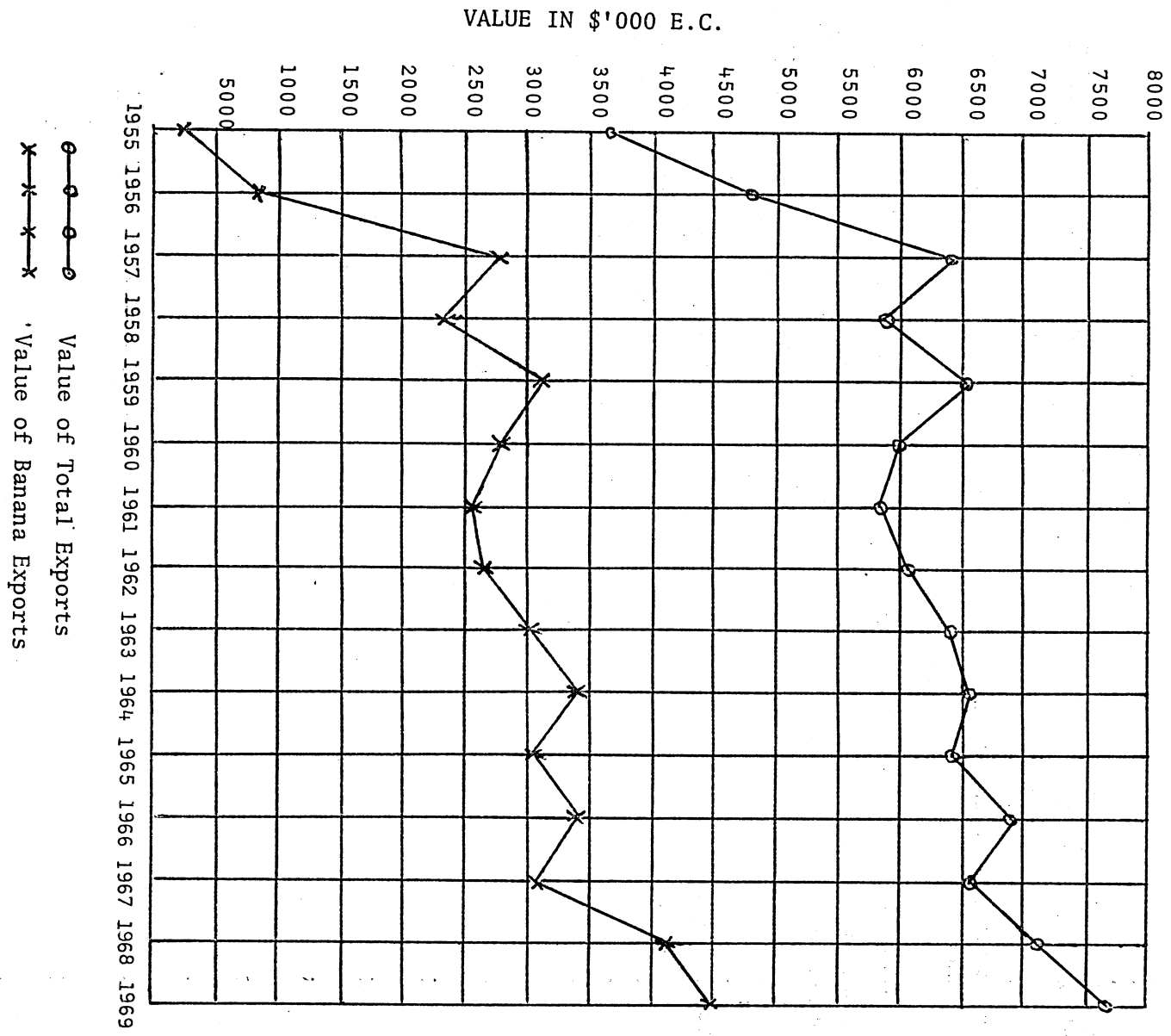
Source: Department of Agriculture, St. Vincent, Annual Trade Reports, 1955-1967.

Table 3      St. Vincent: Tree Crop Plant Distribution, 1968-1970

Type of Plant	1968	1969	1970
	(..... number .....)		
Avocado .....	2,589	3,000	2,471
Cocoa .....	1,414	3,134	6,000
Nutmeg .....	17,081	10,000	13,049
Mango .....	1,038	3,200	4,000
Grapefruit ...	n.a.	1,249	306
Lime .....	12,483	16,650	7,000

Source: Department of Agriculture, St. Vincent.

Figure 1 St. Vincent: Value of Total Exports and Imports, 1955-1969



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