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*A Perspective of Caribbean Agricultural Diversification —
Policies and Strategies*

FEATURE ADDRESS

INTRODUCTION

This paper, as its title suggests aims to present a view of the Commonwealth Caribbean Agricultural Diversification process. It begins by outlining briefly, the historical background which served as the basis for the region's Agricultural Diversification thrust. It examines the progress made in the agricultural sector over the last two decades, i.e. since the implementation of agricultural diversification as a development strategy, and in this connection raises policy and implementation issues for discussion.

The paper concludes by listing several key areas which require further consideration. It also draws attention to the possible role which the Commonwealth Secretariat can play to assist regional institutions to promote Caribbean Agricultural Diversification.

BACKGROUND

Ever since their colonisation, Commonwealth Caribbean countries were used for the large scale production of primary staples for export to Britain.

To begin with, the main crops cultivated were sugar and tobacco, but from the 19th century production broadened to include the minor staples of cocoa, coffee, bananas, cotton and spices, also suited to large scale production and export. In this way, the Plantation System developed, and the Caribbean became incorporated in a great division of the world comprising the world economy.

This development saw to it that on the one hand, there were countries that exported agricultural products and on the other, countries that industrialised and exported manufactures. The opportunity to trade resulting from this division was also an opportunity for the Caribbean to diversify, but this did not happen. Policies adopted by the administra-

tion within the colonies, prevented diversification from taking place. By controlling land ownership to guarantee labour for the plantations, by enacting laws preventing the production of certain goods, or through taxation of production in "undesirable" areas, the structure of production was maintained. Smallness of the immediate market certainly was a deterrent, and industrialisation elsewhere (in Great Britain and then Western Europe and North America) encouraged and increased the opportunities for the export of agricultural products. These developments ensured a dependency status which, as Beckford notes, had adverse consequences which were not only sociological but also economic. Over time, domestic food production suffered severely as a consequence of these affairs, and as time progressed, the countries became more and more dependent on extra regional sources of food supply.

AGRICULTURAL DIVERSIFICATION

Agricultural Diversification in the Caribbean, arose against this background of growing dependency and represents an important aspect of the development strategy, adopted by most Caribbean countries.

Agricultural Diversification primarily signifies the changing of the agricultural production and marketing structure. This includes changing the mix of products, inputs utilised, and the means and outlets for produce marketing. More generally, though, it suggests increasing the range of production, including increasing the value added through processing.

Among the major benefits which can be derived from agricultural diversification are:

- A reduced dependency and vulnerability

- A more equitable distribution of income
- A reduction in unemployment and under-employment
- An improved national nutritional status through an increase in the number of food production sources.

The pursuit of these goals are pertinent to Caribbean Agricultural Development.

CURRENT PRODUCTION AND CONSUMPTION PATTERNS

Despite considerable efforts at diversification since the 1960s, Caribbean agricultural production continues to be dominated by traditional crops grown mainly for export to the U.K. and USA.

Table 1 shows some characteristics of the agricultural situation in the Caribbean. The dominance of the economy by the agricultural sector and of the agricultural sector by a few primary commodities is readily apparent. Sugar dominates agricultural production in Guyana, Jamaica, Belize, Trinidad, Barbados and St. Kitts (between 54 and 95% of agricultural exports). Banana production is dominant in St. Lucia, St. Vincent, Dominica and Grenada (between 22 and 82% of agricultural exports). Production is relatively inefficient and generally marketing is through preferential arrangements.

Agricultural product consumption on the other hand, continues to be influenced by past colonial attitudes and circumstances. Essentially the region consumes what it does not produce (wheat and its products, potato and its products, livestock and their products) as well as what it does produce. (Table 2 shows the balance on extra regional food trade for Caricom states for selected periods.) The figures confirm the growing dependence on imported staples.

According to the Report of a Group of Caribbean Experts "Food imports in the region now exceed U.S. \$400 million per year and have been expanding annually even in volume terms."

While the value and volume of food imports continue to rise in many countries, the value and volume of exports have been declining.

Thus the Caribbean region shows a growing dependence on imported staples

and therefore suffers from food insecurity. Meanwhile large amounts of land remain under sugar production, producing mainly raw sugar to be marketed under very uncertain international commodity arrangements. Countries in the region which have been net exporters of food crops are becoming net importers. In the early 1970s, the Commonwealth Caribbean as a group, became a net importer of food and agricultural products. Malnutrition is high. According to a recent study noted by the Group of Caribbean Experts, about 44% and 56% of the population do not obtain minimum levels of protein and calorie requirements respectively. Unemployment is a major social problem.

The renewed attention to agricultural diversification is therefore justified and timely.

AGRICULTURAL DIVERSIFICATION POTENTIAL

The potential for agricultural diversification in the Caribbean countries is considerable. Sugar and bananas are both sources of foreign exchange. Because of the considerable investment sunk into them, agricultural diversification efforts need to consider prospects in the sugar and banana subsectors. Technological improvement will be crucial for the exploitation of new products within traditional crop areas.

The need to diversify the sugar industry has long been recognised. Apart from the use of molasses for the production of alcohol (rum), the success has been limited. The use of bagasse as fuel, for pulp and paper manufacture and for livestock feed, needs continued efforts, as does the non traditional areas such as sucrochemicals. In the case of the latter, international collaboration will be crucial to both development and utilisation. Appendix 1 lists possible diversification products of sugar cane.

In the case of banana production, market dependence is extreme; almost all exports of the Caribbean banana industry go to the U.K. market, where preferential access is guaranteed in the form of quotas and licensing arrangements, under the term of the eight Banana Protocol of the Lome Convention. This market is presently severely threatened by the lower cost and higher quality products from Central and South America.

TABLE 1: Caribbean Agricultural Indicators

Country	Major Export Products	Major Crops	Index of Food Production 1969-70 = 100	Share of Primary Commodities in Exports	Gross National Product	Agricultural Contribution to GDP %		Labour Force in Agriculture
			1980 - 82	1981 (%)	(\$mn.) 1983	1960	1982	1982 (%)
Antigua & Barbuda	Clothing, rum, cotton, lint, lobsters	Vegetables, cotton fruits	104	23.4	130	18	9	9
Bahamas	Petroleum, hormones, rum, salt, crawfish	Citrus fruits, vegetables	100	na	900	na	na	5
Barbados	Sugar, molasses, rum,	Sugar cane, root crops, vegetables	79	47.3	760	28	7	8
Belize	Sugar, citrus fruits, timber, bananas,	Sugar, citrus, bananas	105	69.8	170	33	23	37
Dominica	Bananas, coconut oil, citrus, pumice	Bananas, coconut, limes	na	81.8	60	35	40	38
Grenada	Cocoa, nutmeg, bananas, fish	Cocoa, nutmeg, bananas, yams	90	92.2	90	39	31	24
Guyana	Sugar, rice, timber, bauxite	Sugar cane, rice, coconut	87	49.4	520	24	21	34
Jamaica	Sugar, chemicals, bauxite	Sugar cane, bananas, cocoa, coffee	90	94	3030	10	7	35
St. Christopher/Nevis	Sugar, molasses, cotton	Sugar, coconut, cotton, vegetables	na	81.6	40	46	11	33
St. Lucia	Bananas, coconut oil, copra, cocoa	Bananas, coconut, cocoa	na	57.7	120	34	14	40
St. Vincent/Grenadines	Banana, coconut products, root crops	Sweet potatoes, yams, bananas, coconut	na	95.6	70	40	12	30
Trinidad/Tobago	Petroleum, sugar, cocoa	Cocoa, rice, sugar, citrus	62	92.0	8320	8	2	10

na - not available

Source: Adapted from CARICOM.

TABLE 2: CARICOM Balance on Extra-regional Food Trade

EC \$'000

	1970-73	1974-76	1977-80	1982-83	1984
Meat/Meat Preparations	- 86,457	- 117,941	- 204,908	- 281,617	- 320,449
Dairy/Eggs	- 88,826	- 136,808	- 214,127	- 312,200	- 311,947
Fish/Fish Preparations	- 21,317	- 35,554	- 52,681	- 80,143	- 97,942
Cereals/Legumes	- 117,610	- 259,729	- 332,256	- 453,560	- 563,693
Fruit/Vegetables	21,006	65,046	39,183	- 56,394	26,650
Sugar/Sugar Products	250,217	641,871	629,399	465,448	479,892
Coffee/Cocoa/Spices	- 9,457	48,988	77,080	43,773	45,956
Miscellaneous Food Prep.	- 13,865	- 26,824	- 45,768	- 71,403	- 89,345
Oils & Fats	- 8,224	- 27,714	- 40,881	- 140,640	- 149,903
All Groups	- 74,533	151,335	- 144,959	- 886,736	- 980,780

NOTE: A negative sign indicates net imports.

Source: CARICOM

As a result there is a great need to diversify the resources currently engaged in the industry and the end use of the product. Alternative products and intercropping have received considerable attention, but require more exploration. The focus is limited to the development and commercial exploitation of alternative products from bananas and the banana plant as a whole. (Appendix 2 shows some of the possibilities for diversification within the banana industry.)

Non traditional areas also require considerable attention, for instance, the livestock industry of the Caribbean remains considerably underdeveloped. There would appear to be possibilities for small ruminant (sheep and goat) development, in the Windward and Leeward Islands, and these need further consideration. Dairying and beef production in Belize and Guyana need to be placed in the context of the needs of the region. Fisheries and forestry have long been areas of tremendous potential that remain unexploited. In the area of fisheries, the exploitation of prawns and lobsters as exports and the provision of food for the hotel industry, as import substitutes, suggest themselves for analysis and development.

The region will continue, for some considerable time, to rely on foreign trade for its development. Agricultural diversification opens up further, the possibility of diversifying exports. Export marketing opportunities exist in vegetable export to the U.S., but the region faces competition from countries such as Mexico, which have greater natural resources for the products required. However, there are opportunities for selected high value tropical and sub-tropical crops, either fresh or processed, which offer good prospects for production expansion. Some trade is already taking place in high quality crops from small countries, e.g. quality coffee produced in Jamaica, and pimento and other spices produced in Jamaica and other Caribbean islands.

The majority of agricultural production in the Caribbean remains rainfed; soil erosion is a major problem particularly in the more hilly island countries. Conservation and irrigation improvements should be an important part of any diversification programme.

Post-harvest losses remain close to 30% of agricultural production. Therefore, increasing production, by ensuring that a greater proportion of the crops harvested are marketed, should be considered from

regional marketing and distribution standpoints.

AGRICULTURAL POLICY AND AGRICULTURAL DIVERSIFICATION

Kuznets points out that in an interdependent system, what a sector does (or possibly fails to do) is not fully attributable to it, but is contingent upon what happens in other sectors (and perhaps also the outside world). Some aspects of Caribbean Economic Policy bear this out.

Appropriate economic policy to encourage diversification, is a crucial element if success is to be achieved. Continued agricultural sector planning would appear to represent a key area for focus. Country as well as regional agriculture sector planning needs to be emphasised, to provide a broad framework for rationalising regional agricultural diversification efforts. This would permit an appropriate strategy for agricultural adjustment and development to be worked out for the region. It would encourage sector financing in agriculture, as opposed to the concentration on narrowly conceived "bankable" projects for expanding the production of individual activities. Financing for land distribution, land consolidation and research, might be as important as financing for the direct expansion of production of individual enterprises.

The policy on Caribbean agricultural organisation has not fully encouraged agricultural diversification. A small farming policy has not been vigorously pursued and institutional obstacles have stymied the evolution of such a structure, and acted as a serious constraint to agricultural and general economic development. This stems from the view, prevalent in colonial times and still popular, that large farms are more economically efficient than small farms. The prevalence of this view is borne out to some extent, by instances in the region where plantations, acquired by governments through nationalisation or other means, have been operated as large scale state farms. Persaud notes "where land is scarce, a unimodal family farm structure tends to be the appropriate form of organisation to facilitate optimum resource use, labour intensity and cropping patterns. Where land is relatively abundant, it might be possible to have a dualistic agricultural structure with both family farms and large commercial farms."

Not widely appreciated in many countries is the fact that in most instances, family farms have not performed impressively, primarily because of unfavourable land policies. Other agricultural policies have also proved inimical to small farmers' progress. This is often the result of a carry over of colonial plantation policy. As Beckford notes, the survival of the plantation was ensured, inter alia, by the monopolisation of land. Persaud also notes that "in instances where small farmers have been able to have access to good land, e.g. in Guyana and Trinidad and Tobago, family farming has played a substantial role in agricultural development. The failure of experiments with state farming in some countries is leading to improved perceptions of the scope for expanding small farming in the region."

A policy which favours domestic food production based on intensive small farming needs widespread recognition in the region. Citing the example of successful small farming policy, Persaud notes that in Taiwan, the emphasis on small scale intensive farming resulted not only in a change to high value products for export but also produce to meet domestic food needs. It also helped to stem the exodus of labour from the countryside.

Agriculture is very demanding of public services and therefore agricultural support services would need to be improved and re-oriented towards food production to promote diversification. Extension and research services need to be better staffed, equipped and operated. Qualified and dedicated staff must have proper facilities including adequate housing conditions, living standards and adequate transportation facilities in order to apply their skills.

REGIONAL COLLABORATION

In small states such as the Caribbean, the per capita cost of support services tends to be high. These problems may be lessened by specialisation. They are sometimes also reduced in significance by regional cooperation. The Caribbean has a long history of cooperation in some areas of agricultural research and training, albeit in traditional export crops. For example, excellent work in sugar cane breeding is done regionally, and the smaller banana exporting islands - Dominica, St. Lucia, St. Vincent and Grenada - cooperate in banana research through the Windward Island Banana Growers' Association.

Regional cooperation through institutions such as CARDI and CARIRI, should be strengthened in traditional food areas such as food crops, fruits and vegetables. The potential in sheep and goats should be fully explored, and more collaborative work is required in all aspects of beef and dairy, including animal breeding and artificial insemination services, and poultry production.

Regional collaboration can embrace the production of animal feeds incorporating greater use of local by-products. For example, coconut cake and rice bran, cassava root and leaf meals, pulses (peas and beans) and grains as substitutes for maize, fish meal and soya-bean which are traditionally used as the basis of poultry feed.

Cassava root meal has been included in poultry rations up to the extent of 60% quite successfully. In Nigeria for instance, cassava has been known to yield 13 times more energy per hectare than maize or sorghum.

The possibility of producing fish meal regionally, using fish by-catch or spoilt fish is also worth considering, to reduce the feed import bill. The 200 mile Exclusive Economic Zone (EEZ) allowed under the Law of the Sea Convention, can greatly enhance potential resources available to Caribbean States, because of the very large additional sea area which comes under their economic control. Regional cooperation would seem to be vital to ensuring capital resources and skills needed to protect and exploit these resources. Most of the countries in the region will not have the capacity, singly, to exploit such relatively large areas of sea.

Other areas which lend themselves to regional cooperation include: purchase and distribution of agricultural inputs; collection, transportation, storage, processing and marketing; product concentration and specialisation of crops to achieve economies of scale.

MACRO ECONOMIC ISSUES

According to Persaud, "the failure of policies in agricultural organisation has been compounded in the Caribbean, by inefficient price and trade policies. Price controls for farm products have helped to worsen the terms of trade of agricultural producers. Trade policies have emphasised securing and maintaining preferential access for traditional crops, and this has served to reinforce the rigidity of the agricultural system, rather than encourage adjustment to products with better

demand and price prospects. This is especially in those countries where land and other resources are not available for other sectors unless released from the traditional crops."

However, the poor success of Caribbean agricultural diversification cannot be attributed to agricultural policies alone. Persaud notes that in small states "the emphasis given to import substitution in manufacturing, has helped to worsen the agricultural terms of trade. Both consumption and intermediate goods are obtained by the agricultural sector at inflated prices, and this in turn tends to raise costs of agricultural production and to affect its competitiveness. Thus a combination of an inappropriate agricultural strategy and a manufacturing sector which is too import substitution oriented, leads to production costs in both the agricultural and manufacturing sectors which are uncompetitive. This is in general sustained by an over-valued currency."

While land redistribution remains a continuing need, land consolidation is also currently becoming necessary in some countries. Government intervention is usually required to assist the process, for example, land reform to break up large holdings or to consolidate fragmented holdings.

ISSUES FOR FURTHER CONSIDERATION

The pivotal role of agriculture in Caribbean economic development, will best be fulfilled by the creation of a favourable climate for agricultural production.

At the political level, both the Commonwealth Heads of Government at their meeting in Vancouver (October, 1987), and the Commonwealth Agriculture Ministers at their meeting in Rome in November, 1987, have expressed support for plans to tackle the problems of agricultural diversification in the Caribbean.

However, as a prerequisite, there must be a firm commitment to and proper conceptualisation of, the macro economic changes which can facilitate the process.

There needs to be agricultural policy reforms, in pricing and in the production support services, to stimulate production. Food production and food processing industries need to be stimulated, and as the Commonwealth Ministers state "... high priority should be given to the concerns of small and marginal farmers, especially in the areas of credit and marketing." (Commonwealth Secretariat, 1987).

The tendency towards protectionism, intra-regional as well as extra-regional, must be perceived as a fundamental threat to agricultural development. It creates trade distortions and ultimately constrains incentive policies for agriculture.

The Caribbean's human resources capability to tackle these issues successfully is well recognised. The Caricom Regional Action Plan and the recent Regional Agricultural Sector Programme testify to this capacity. External assistance is, however, a vital factor in realising the objectives of Caribbean Agricultural Diversification.

The Commonwealth Secretariat shares the desire of the Caribbean governments and peoples for sustained agricultural development. It believes that agricultural diversification is the appropriate strategy for the agricultural and subsequent economic development of the region.

The Commonwealth Secretariat is delighted to take part in this conference and is willing to participate in, and respond positively to requests from the region, for collaboration in plans and programmes, aimed at developing a sound agricultural diversification programme for the Caribbean.

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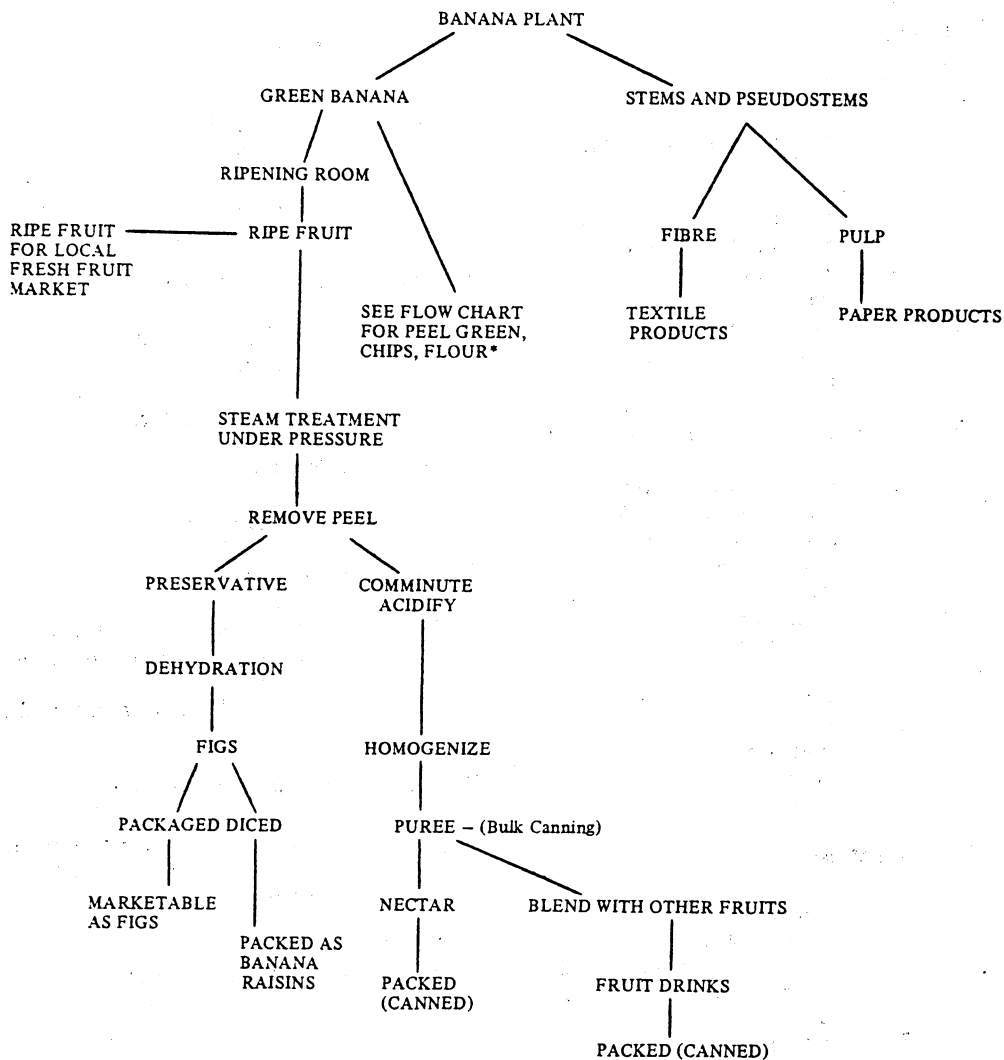
APPENDIX 1: Diversification Products of Sugar Cane

- I. Based on Sugar
 - A. Traditional Products:
 - 1. Refined sugar products, e.g. castor sugar
 - 2. Syrups including invert syrups
 - 3. Non-alcoholic drinks
 - 4. Alcoholic drinks
 - 5. Bakery products
 - 6. Confectionery
 - 7. Powdered drink mixes
 - 8. Food products
 - B. Non-Traditional Products:
 - 1. Fermentation products including organic acids, xanthan gums, antibiotics, dextrans, and gluconates
 - 2. Sucrochemicals, e.g. sucro-detergents
 - 3. Sucroesters, sorbital (thence to Vitamin C)
 - 4. Alcoholic beverages
 - 5. Animal feeds – for non-ruminants
 - 6. Sugar charcoal
 - 7. Caramel
- II. Based on Molasses
 - 1. Alcoholic drinks
 - 2. Other fermentation products e.g. organic acids, bakers yeast, single cell protein
 - 3. Invert syrups
 - 4. Animal feeds for ruminants and non-ruminants
- III. Based on Bagasse
 - 1. Fuel
 - 2. Pulp and Paper
 - 3. Cellulose
 - 4. Board and building materials
 - 5. Animal feeds
- IV. Based on Filter Press Mud
 - 1. Fertilizers and soil conditioners
 - 2. Waxes
 - 3. Building materials extenders
- V. Based on Ply Ash
 - 1. Building materials
- VI. Based on Cane Juice
 - 1. Fermentation products, e.g. alcohol, vinegar, dextrans, flavour enhancers
 - 2. Alcoholic and non-alcoholic drinks
- VII. Based on the Sugar Cane Plant
 - 1. Animal feeds for ruminants
 - 2. Board and building materials.

(It should be noted that a by-product of great promise – ethanol – is not included in this list).

Source: Demas (1987).

APPENDIX 2: Flow Chart for Banana Industry Diversification



Source: Demas (1987)

* Not presented here.

**Theoretical and Analytical Issues in
Diversification Strategy Formulation**