

PLAN OF JOINT ACTION FOR AGRICULTURAL REACTIVATION IN LATIN AMERICA AND THE CARIBBEAN

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STRATEGY OF ACTION FOR REACTIVATION OF AGRICULTURE IN THE CARIBBEAN COUNTRIES

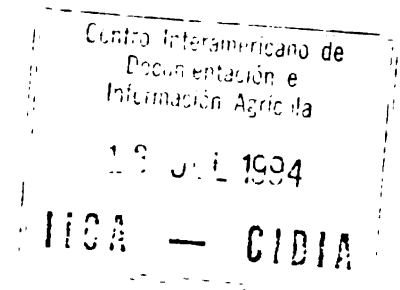
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SECTION I

OVERVIEW

1.1 Introduction

This document contains proposals for the Caribbean component of the strategic plan currently being developed by the Inter-American Institute for Cooperation on Agriculture (IICA) for the modernization and revitalization of agriculture in Latin America and the Caribbean 1/. It is presented in response to a mandate given by the ninth Inter-American Conference of Ministers of Agriculture held in Ottawa, Canada in August 1987. The proposals were developed against a background of several regional and subregional initiatives underway with respect to agriculture in the Caribbean. These include: the Food and Agricultural Organization of the United Nations (FAO) "Plan of Action: Potential for Rural and Agricultural Development in Latin America and the Caribbean"; the Caribbean Community (CARICOM)2/ Secretariat's "Caribbean Development to the Year 2000: Challenges, Prospects and Policies"; the CARICOM Secretariat's Caribbean Community Programme for Agricultural Development: the Organization of the Eastern Caribbean States (OECS) Agricultural Diversification Programme; IICA has been a major contributor to some of these initiatives, and as such, its own strategy supports and complements these initiatives.

1.2 Method of Approach, Operating Principles and Data Sources

In order to provide a general framework for the development of the Caribbean component of Strategic Action Plan, IICA, through its technical officers, developed a series of position papers for the individual countries that it serves. These country papers, together with reviews of the studies listed above and consultations with IICA's technical officers and other experienced agriculturalists in the region, provided the basic source of information used in developing the proposals contained in this document. These sources were also supplemented with careful analysis of other available empirical data on the region's agricultural sector.

* This document relies heavily on a previous version prepared by John Spence (UWI) and Lloyd Rankine (UWI), that was presented to the SCMA Extraordinary Meeting, Guyana, September 1988.

1/ IICA's member countries in the Caribbean Area include Antigua & Barbuda, Barbados, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Lucia, St. Vincent & the Grenadines, Suriname and Trinidad and Tobago.

2/ CARICOM consists of IICA member countries referred to above except Haiti and Suriname and including Belize, Montserrat, St. Christopher and Nevis. Haiti and Suriname although not members of CARICOM, are associate members of CARICOM's Standing Committee of Ministers responsible for Agriculture.

Given the fact that the supportive studies set out above contain considerable empirical data as well as comprehensive proposals for the development of the agricultural sector, the strategy adopted in this exercise is to focus on those critical areas that offer the greatest scope for sustained revitalization of the sector from both the short and long term perspectives. These areas include: Latin American and Caribbean linkages; macroeconomic policies, planning and management; farmer and farm development; youth involvement in agriculture; inter-sectoral linkages: technology generation and transfer; biotechnology and information systems; plant and animal protection; and services to agriculture. A case is made for special focus on the farmer's role in the revitalization process, especially as high levels of technology will be required to increase the competitiveness of Caribbean agriculture. As a necessary support mechanism, institutions will take on a prominent role in ensuring that sector activities are more effectively managed. Linkages, both internal and external to the sector and on a regional and sub-regional basis are also stressed, emphasizing where possible bilateral or multilateral relationships with Latin American countries. Specific links may take the form of networks or in some cases joint activities. In order to effect the revitalization process, a number of targeted projects have been developed to address the critical areas of concern.

The proposals set out below, therefore, are intended to support and strengthen the initiatives outlined in the documents referred to above and particularly the more recent CARICOM and OECS initiatives.

1.3 Organization of the Document

The presentation of the proposal is organized into five sections. The foregoing Section I introduces the document, outlining the methodology and summarizing the salient features of the proposal. Section II describes the political background, main characteristics of the region's economic structure and resource base, and reviews the economic performance.

Section III begins with a review of initiatives undertaken at the regional level to promote agricultural development and this is supplemented with national level examples. The most recent of these, the CARICOM Programme for Agricultural Development and the OECS Agricultural Diversification Programme are presented in summary form in view of the key role these programmes are expected to play in future development of the region's agriculture. Further, the programmes provide the overall framework within which the IICA strategy is to be implemented.

Section IV consists of two parts, the first of which discusses some complementary issues related to rationalization of policy options for the agricultural sector. Included among these are the scale of production within the context of small states, import substitution, land tenure, the impact of macroeconomic policies, and the role of the state in the agricultural reactivation programme. The second part identifies some key areas of action for the modernization and revitalization process, and discusses the prospects for closer

integration and cooperation between the Latin America and Caribbean (LAC) countries. Linkages between agriculture and other sectors are also identified, particularly in agro/industry, marketing, tourism and services. Further, it discusses the pivotal role of the farmer and institutional arrangements and placed these in the context of technology generation and transfer, biotechnology and information, research and development and effective resource management.

The final section outlines the principles that guide the implementation strategy, and concludes with profiles of the proposed projects.

SECTION II

BACKGROUND

2.1 Political Setting

The Caribbean region, with the exception of Guyana and Suriname, comprises a number of small island states. Because of their unique geographical location, spanning the entry to the Gulf of Mexico and the Caribbean Sea, these islands have maintained an important position in geopolitics since their settlement nearly 500 years ago. As a consequence, the region's economic, political, and social developments have been largely determined by geopolitical interests of Spain, Holland, England, France and the USA, at different points in time.

Variously described as "micro-states" or "mini-states", the territories of the Caribbean are extremely susceptible to changes in external political and economic activity. This vulnerability is enhanced by regional geography in which nine of the eleven IICA member states are islands, the largest of which is Haiti (27,749 square kilometres). The population in the respective states is quite small, ranging from 97,000 in Grenada to 5.5 million in Haiti. Despite the relatively small size of each country's population, it places a serious burden on land in nearly all the states (Table 1). Considered as a whole, however, the region has economically manageable levels of both land (428,169 square kilometres) and population (11.4 million).

Most states in the region share a common British colonial heritage of language, traditions, and tastes. They are politically independent and the majority has a Westminster parliamentary system with a Prime Minister as the Head of Government. In addition to the political ties to Europe, the close proximity of the United States has resulted in an active American role in the development of the region, particularly since de-colonization in the years following World War II. The connection between the metropolises and the Caribbean is strongest in trade, financial arrangements (aid), migration, education, and cultural and political influences. Because of traditional involvement and current economic needs, the Caribbean is very closely connected to the USA, Canada and the UK.

Various initiatives have been taken in the region during the last three decades towards formation of a regional political and economic group. In 1958, while most of the English-speaking Caribbean states were still under colonial rule, they formed a Federation of the West Indies. But this initiative collapsed after a few years, when Jamaica withdrew in 1962 and was soon followed by Trinidad and Tobago. After this abortive experience in federation, the twelve territories formed the Caribbean Free Trade Association (CARIFTA) in 1968 to promote trade and stimulate economic growth. Subsequently, these states moved to a higher stage of integration in 1973 by replacing CARIFTA with the Caribbean Community and Common Market (CARICOM). Seeking a larger voice in regional affairs, the smaller states which comprised the Windward and Leeward Islands formed the Organization of Eastern

TABLE 1: STRUCTURAL CHARACTERISTICS OF IICA MEMBER COUNTRIES IN THE CARIBBEAN AREA

COUNTRY, YEAR OF RECORD	AREA (km ²)	POPULATION ('000)	POPULATION (per km ²)	UNEMPLOYMENT (%)	AGR. POP. (%)	YEAR OF INDEPENDENCE, POLITICAL STATUS
Barbados, 1967	430	253	588	18.0%	8.4%	1966, Parliamentary State
Guyana, 1965	214,970	795	4	16.0%	26.9%	1966, Republic
Haiti, 1966	27,749	5,500	198	..	70.0%	1804, Republic
Jamaica, 1966	10,992	2,326	212	23.6%	27.4%	1962, Parliamentary State
Suriname, 1966	163,820	400	2	..	..	1975, Republic
Trinidad & Tobago, 1966	5,128	1,200	234	17.2%	9.5%	1962, Republic
O.E.C.S.	2,540	412	162	19.8%	18.9%	
Antigua & Barbuda, 1987	440	81	184	10.0%	9.4%	1981, Parliamentary State
Dominica, 1987	751	85	113	19.0%	30.8%	1978, Republic
Grenada, 1987	344	97	282	20.0%	25.0%	1974, Parliamentary State
St. Lucia, 1987	616	142	231	25.0%	29.5%	1979, Parliamentary State
St. Vincent & the Grenadines, 1987	399	311	290	25.0%	..	1979, Parliamentary State
TOTAL	428,169	11,412	27	18.3%	27.3%	

Note: For the O.E.C.S., Area and Population figures are totals and all other categories are averages.

Source: United Nations Commission for Latin American and the Caribbean; Economist Intelligence Unit; and World Bank Region Report 1988

Caribbean States (OECS) in 1981; these states have since come the closest to economic and political unification since the Federation of 1958.

The increased efforts toward regionalization in the early 1970's were accompanied by a change in the political philosophy of some countries. Leftist leaders in Jamaica, Guyana, and subsequently Grenada, challenged the region to become self-sufficient and independent of extra-regional political and economic relations. Their governments took an active role in their respective economies enacting legislation for land reform, state ownership of farms, and promotion of cooperatives. This approach to a political economy was new to the Anglophone Caribbean, and it presented an alternative approach to the rest of the region. Jamaica and Grenada have since moved back to more centrist or conservative policies, but their experiences have influenced political thinking and economic practices to some extent throughout the region.

The many vexing problems faced by the Caribbean countries are derived partly from their small size, partly from economic fragmentation, and partly from the fact that they have been unsuccessful at coordination strategies for their economic development. The countries of the region have found it difficult to reconcile their aspirations towards economic and political independence with their marginally viable economies. As a result, each country has evolved as a separate political, economic and social entity and this provides a serious challenge to the current efforts of enhancing economic integration.

2.2 Resource Base

2.2.1 Land

Nine of the states under study are volcanic or limestone-based islands. They are extremely small, with Haiti and Jamaica being the only islands over 10,000 square kilometers in size. In contrast to the islands, Guyana and Suriname are located in continental South America and are almost ten times as large as Haiti, the largest island. The topography of all the states is extremely variable, and the majority of the islands have hilly to mountainous terrain over most of their respective land areas.

With the exception of Guyana and Suriname, the region has a narrow land resource base, a small portion of which is arable without restrictions. For the nine islands, this places severe constraints on the technological options that may be adopted. Given the level of technology being used in agriculture, significant increases in population in the island states pose a threat to sustained food production and hence food security. However, there is still some potential for bringing additional land under production, though at tremendous economic cost.

The continental countries (Guyana and Suriname) on the other hand have larger land areas relative to their population size, as well as a more favourable topography for agricultural activities, although soil

fertility and susceptibility to flooding present significant problems. But they are able to sustain a higher population density and allow for relatively greater possibilities for the application of technologies.

2.2.2 Human Resource

Whereas limited natural resources represent a constraint to development, human resources in the region represent a significant asset. Life expectancy, infant mortality, and literacy rates compare favourably to many developing countries. Moreover, because a premium is placed on education, the region has a comparatively high level of formal education, technical training, and expertise.

Population growth in the region has varied considerably from country to country, ranging from real declines in Guyana to increases of nearly 4% in St. Lucia (where 30% of all births are to teenage mothers) 3/. Overall population growth has remained quite low by developing country standards, predominantly because of high migration mainly to North America and the UK. While migration has compensated for the high birth rate, it has depleted employable human resources, reduced availability of skilled labour and created a population heavily skewed toward dependent minors. It is worth noting that without emigration, country populations would have been 18% higher in Barbados and between 35-48% in the other CARICOM countries 4/.

Despite low population growth and contractions in the population of working age in some countries, its changing structure and the problem of unemployment pose serious economic and social concerns. All the countries have a high dependency ratio where a large proportion (ranging from 40% to 60%) of the population is below 25 years of age. This high rate of dependency and the low rate of employment among young adults is a drain on resources, and represents an impediment to overall development and equitable distribution of benefits.

Since 1980, when the regional unemployment average was estimated at 10 to 15%, overall unemployment rates have risen by 5 to 10%. Even increased employment generated by the tourism sector has failed to offset declines in manufacturing, agriculture, and in some cases the public sector. The percentage of unemployed women continues to be higher than that of men, but the most acutely affected group is young adults. In Trinidad & Tobago for example, this group has an unemployment rate of 62%, and comprises nearly 57% of all unemployed adults. The scenario is nearly the same in Jamaica and Barbados where young adults account for 56% and 68% of those unemployed, respectively.

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- 3/ See the Economic Intelligence Unit's Country Profile: Guyana, Barbados, Windward and Leeward Islands 1988-89.
- 4/ "Regional Agriculture Sector Program, 1987-91", CARICOM Secretariat, 1988.

Overcoming the unemployment problem will depend to a large measure on education, training and a rapid expansion of job opportunities. Provided the financial resources are available, the strong educational and training infrastructure could be expanded in a reasonably short space of time for a large proportion of the population to acquire any necessary skills. In addition, the audiovisual media (television and radio) are extensively used throughout these countries and this provides an excellent vehicle for disseminating adult education programmes. Past experiences indicate that farmers respond rapidly to informal training programmes and adopt new technologies with little resistance when these are to their economic advantage. This augers well both for the region's youth and for the agricultural sector in particular.

2.2.3 Institutions

There is a strong institutional base in the region to support regional economic development generally and agriculture specifically. In education, agricultural science is part of the curriculum at secondary schools throughout the region. At the college level, three schools, one each in Trinidad & Tobago, Jamaica and Guyana, are devoted to the study of agriculture. Strong technological institutes have been developed particularly in Jamaica, Trinidad and Tobago and Barbados and similar institutions are now being developed in St. Lucia and some of the other countries. At the university level, the University of the West Indies (UWI), with its campuses in Jamaica, Trinidad and Tobago, and Barbados, and the University of Guyana (UG) have continually expanded their training programmes in economics and agriculture, and currently offer degrees in most areas of agricultural science.

Strong financial and technological agencies also exist in support of regional and national initiatives. These include the Caribbean Development Bank (CDB) in finance; the Caribbean Agricultural Research and Development Institute (CARDI) in technological generation and transfer; the Caribbean Food Corporation (CFC) in finance and joint venture participation, and its subsidiary the Caribbean Trading Company (CATCO) in marketing; and of course, the CARICOM and OECS Secretariats in coordination and planning. These are just a few of the numerous bodies designed to provide resources and technical support to the states of the region. Despite the number of regional institutions, regional initiatives historically have been difficult to implement in the individual countries, particularly in the area of agriculture. Most of this can be attributed to the planning and administrative capabilities within the agricultural sector which are at varying levels of development, and which have largely been unable to provide the necessary technical support. This critical aspect of agricultural policy needs extensive review and harmonization.

2.3 Economic Performance

2.3.1 General Economic Overview

The structure of the regional economy is characterized by limited natural resources and vulnerability to adverse weather conditions, small domestic markets, dependency on external trade, and high foreign debt. Positive economic performance is therefore predicated on favourable developments in the terms of trade, demand for the region's products (including services), and favourable weather conditions. These factors are largely exogenous, and have generally hindered rather than supported economic growth in the past two decades. Compounding this vulnerability, the domestic policy responses to volatility in these areas have been in some instances inadequate and in others counter-productive.

Reliance on a few traditional exports (sugar, bananas, coffee, cocoa, tobacco, bauxite, alumina) has contributed to the region's vulnerability to external economic impacts. Some countries, however, have undertaken significant steps to adapt their economies to changing external circumstances. They have done so by supporting a variety of sector-level reforms, provided added incentives to export, improved resource allocation, increased savings and investment, and re-directed public investment priorities. Countries which have introduced these policy reforms (Jamaica, Dominica, St. Vincent and the Grenadines) have increased their returns on external financing, thereby avoiding the debt pressures suffered by many states.

With respect to external policies, emphasis in strengthening the outward orientation through export promotion, elimination of the anti-export bias, and import liberalization have expanded non-traditional exports and rendered production more efficient. On the domestic policy front, better price signals were essential for the supply response, together with development of the requisite infrastructure, institutional support and information channels.

Overall, when compared to other regions of the world, and despite the inherent vulnerability which characterizes small economies, the Caribbean countries' economic performance over the last ten years (1978-1987) may be categorized as fair, but good during 1986 and 1987. Table 2 shows that between 1977 and 1987, of the six largest economies, Barbados and Haiti (except for 1981 and 1982) maintained five consecutive years of real growth; Jamaica and Guyana experienced some fluctuations in outputs, while Suriname and Trinidad and Tobago recorded dramatic declines in output. In the OECS sub-grouping, the growth trend between 1977 and 1987 is decidedly more favourable, ranging from a low average annual growth rate of 2.7% in Grenada to a high of 6.9% in Antigua and Barbuda.

Table 2: Caribbean Countries - Growth of GDP, 1977-87 (Constant market prices)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Antigua a/	7.5	9.1	7.8	8.7	4.7	1.5	7.4	7.1	7.8	8.0	p/ 7.0
Barbados	3.7	6.1	7.7	4.7	-3.2	-5.0	0.2	3.4	0.5	4.7	2.0
Dominica	3.4	12.3	-16.9	10.5	10.1	4.1	3.0	6.9	1.5	6.8	4.6
Grenada	5.8	5.1	2.1	-1.5	8.0	0.6	-2.9	2.0	3.7	5.6	4.4
Guyana	-2.7	-1.8	-1.8	1.7	1.5	-13.2	-6.8	0.3	0.9	1.4	0.0
Haiti	0.5	4.7	3.6	6.4	-2.7	-3.4	0.8	0.3	1.1	0.6	0.5
Jamaica	-2.5	0.5	-1.5	-5.8	2.5	1.1	2.3	-0.9	-4.5	2.1	4.1
St. Lucia b/	..	12.9	3.7	-0.8	1.2	3.0	4.1	5.0	6.0	5.8	2.1
St. Vincent	3.5	10.6	3.7	2.7	7.4	8.5	5.7	5.9	6.0	4.1	1.3
Suriname	8.5	7.9	-7.7	-6.6	6.9	-3.8	-4.1	-1.9	-2.3	-2.0	-6.6
Trinidad a/	7.7	7.6	7.3	6.8	5.2	1.7	-7.3	-12.8	-2.9	-6.4	-2.3

a/ 1986 and 1987 at factor cost

b/ At factor cost

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

The late 1970's and early 1980's represented periods of social and economic difficulties for the region as a whole, and highlighted the structural weaknesses of its economies. The world recession and unfavourable weather conditions adversely affected agricultural output and the overall economic performance of Caribbean countries. Manufacturing suffered from an overall decline in global demand; world natural resource prices fell dramatically, depressing the bauxite and aluminum industries in Guyana, Jamaica and Suriname, and the petroleum industry in Trinidad and Tobago (Table 3). Real decreases in world prices of primary agricultural commodities such as sugar and bananas were also experienced.

The high degree of product concentration in external trade for individual countries is shown in Table 4. The ratio of the largest export commodity to total exports ranges from 26% in Grenada for nutmeg and mace, to 61% for sugar in Barbados. Manufactured products account for most of the remaining exports in Barbados (87%), St. Lucia (46%), Antigua (78%), and Dominica (43%), while foods and raw materials comprise 71% to 96% of the rest of merchandise exports in the other CARICOM countries.

Table 3: World Price Indices for Select Commodities (1981 = 100)

Year	Aluminum	Bauxite	Petroleum	Bananas	Sugar	Coffes
1981	100	100	100	100	100	100
1982	54	86	80	105	33	112
1983	129	39	63	117	37	119
1984	98	15	64	105	8	129
1985	63	14	72	-	-	-

Source: IMF International Financial Statistics; and FAO Commodity Review and Outlook 1984-85, Appendix 1.

Table 4: Export Concentration Indices Showing Ratio of Leading Commodity Export to Total Export

Country	Largest Commodity		2 Largest Commodity		3 Largest Commodity	
	Ratio	1st Commodity	Ratio	2nd Commodity	Ratio	3rd Commodity
Antigua/Barbuda (82)	45.6	Clothing	48.2	Rum	48.8	Lobsters
Barbados (87)	61.2	Sugar	71.3	Electronic	80.3	Clothing
Dominica (86)	43.7	Bananas	81.3	Soaps	86.7	NA
Grenada (87)	26.1	Nutmeg & Mace	45.3	Cocoa	62.4	Bananas
Guyana (87)	47.7	Sugar	79.7	Bauxite	85.1	Rica
Jamaica (86)	37.3	Alumina	50.9	Bauxite	59.7	Sugar
St. Lucia (86)	41.5	Bananas	55.4	Paper products	66.3	Clothing
St. Vincent (85)	42.8	Bananas	56.6	Flour	65.3	Rootcrops
Trinidad & Tobago (87)	48.3	Mineral fuels	82	Chemicals	89.9	Sugar

Source: Economist Intelligence Unit 2 (Trinidad & Tobago, Barbados, Guyana, and the primary exports for Dominica, Grenada, St. Kitts, St. Lucia, and St. Vincent); and CARICOM 2 (all other statistics)

The region's heavy reliance on a few primary products for much of its national income and foreign exchange, together with adverse conditions in the world economy resulted in the economies experiencing a rapid deterioration in their balances on current account (Table 5). Individual countries were affected differently. For example, the main sugar-exporting countries suffered from a decline in their sugar output as well as additional cutbacks in their export quotas to the US market. Between 1980 and 1987, there were substantial reductions in quota shipments amounting to 26% for Haiti, 73% for Trinidad and Tobago, 81% for Guyana, 84% for Jamaica and 86% for Barbados 5/. The data indicates that the external balance situation was relatively more favourable in those countries where bananas was the major export product, largely because of an appreciation of the pound sterling. The countries benefiting from the currency appreciation were mainly St. Lucia, St. Vincent & the Grenadines and Dominica.

Table 5: Caribbean Countries - Balance of Payment Current Account, 1977-87

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
	(US\$ Million)										
Antigua	-9.6	-3.7	-17.4	-25.4	-40.0	-38.9	-9.6	-2.0	-24.8	-137.2	-84.2
Barbados	-60.8	-25.9	-47.6	-23.9	-115.7	-44.5	-50.6	17.5	53.8	-3.4	-2.6
Dominica	-5.5	-6.6	-14.3	-33.1	-23.4	-14.6	-10.4	-18.5	-20.7	-8.9	..
Grenada	5.3	-0.5	-5.2	-13.3	-25.2	-33.8	-29.4	-27.6	-27.5	-34.9	-25.9
Guyana	-98.8	-31.7	-78.9	-109.2	-189.2	-152.4	-165.3	-115.4	-156.0	-152.3	-138.9
Haiti	-37.5	-35.4	-48.9	-107.9	-108.7	-48.9	-82.4	-139.0	-133.7	-96.4	-132.5
Jamaica	-65.5	-123.4	-180.6	-208.9	-373.2	-453.7	-506.2	-382.6	-421.3	-214.4	-207.8
St. Lucia	-18.0	-29.6	-36.1	-40.7	-50.0	-35.6	-12.4	-23.8	-18.0	-5.4	-27.4
St. Vincent	-6.5	0.0	-6.3	-13.4	-8.0	-15.3	-6.6	-4.5	3.3	-3.0	-7.6
Suriname	-81.1	-46.0	-37.0	-58.2	-122.5	-153.4	-176.3	-93.6	-53.0	-33.8	..
Trinidad	214.8	35.9	-29.2	334.7	455.0	-644.9	-1002.9	-522.5	-92.2	-603.7	-371.1
	(As percent of GDP)										
Antigua	-15.2	-5.2	-20.1	-23.3	-32.6	-28.6	-6.4	-1.2	-12.5	-59.6	-32.5
Barbados	-12.3	-3.8	-5.7	-2.5	-11.7	-4.2	-4.8	1.5	4.5	-0.3	-0.2
Dominica	-15.1	-14.6	-31.6	-56.2	-35.4	-20.3	-13.1	-20.7	-21.0	-8.1	..
Grenada	10.7	-1.1	-9.0	-21.2	-33.9	-38.0	-31.3	-27.1	-23.7	-27.0	-17.8
Guyana	-22.4	-6.4	-15.2	-18.5	-33.3	-31.6	-33.4	-26.0	-32.8	-29.3	-39.6
Haiti	-3.8	-3.4	-4.4	-7.8	-7.4	-3.3	-5.0	-7.7	-6.9	-4.3	-5.9
Jamaica b/	-2.0	-4.7	-7.5	-7.8	-12.6	-13.8	-14.0	-16.2	-20.9	-8.8	-7.0
St. Lucia	-26.4	-36.4	-36.4	-36.1	-39.0	-27.4	-8.9	-15.6	-10.6	-2.9	-13.7
St. Vincent	-18.7	0.0	-12.3	-22.9	-11.2	-18.4	-7.2	-4.5	3.0	-2.5	-6.4
Suriname	-11.3	-5.6	-4.2	-6.5	-12.1	-14.8	-17.6	-9.6	-5.4	-3.5	..
Trinidad	6.9	1.0	-1.0	5.3	6.0	-8.1	-12.6	-6.6	-1.2	-12.1	-8.7

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda

The problem of current account deficits was compounded by high and increasing debt servicing costs which burdened the capital account budgets of most Caribbean countries. As Table 6 demonstrates all the

5/ "Caribbean Exports: Preferential Markets and Performance", World Bank, Report No. 7207-CRG, May 1988.

countries have debt to GDP ratios of over 25%, with Guyana and Jamaica recording well over 100%. Debt service ratios are somewhat less imposing because many of the foreign debts have been rescheduled and some have been contracted at concessionary rates.

Table 6: Balance of Foreign Debt (US\$ Million)

Country (Year of record)	Total Debt	Total Debt/ GDP	Debt Service/ Exports (goods)	Debt Service/ Exports (goods & services)
Barbados (1987)	353.4	28%	31.8%	17.1%
Guyana (1986)	679.0	213%	11.0%	23.4%
Jamaica (1986)	3518.7	162%	100.1%	42.5%
Trinidad & Tobago	1856.7	54%	16.6%	14.6%
OECS				
Antigua & Barbuda (1988)	240.0	80%	-	9.0%
Dominica (1987)	66.0	51%	11.0%	5.5%
Grenada (1986)	52.8	42%	-	9.1%
St. Lucia (1986)	48.2	28%	2.6%	0.5%
St. Vincent (1986)	28.9	25%	4.9%	3.7%

Source: Own estimates based on Central Bank of Barbados, Annual Statistical Report 1988; Bank of Jamaica, Annual Report 1986; Economist Intelligence Unit, Country Profile 1988-89; CDB 1988 and IDB Annual Report 1988.

The persistent debt problems which began to mushroom in the early 1980's have resulted in widespread adoption of stabilization and structural adjustments programmes in many Caribbean countries especially the More Developed Countries (MDC). One of the major effects of these programmes has been a reduction in the size of the public sector, and this has contributed to higher unemployment levels in those countries. Many of the specialist institutions such as Agricultural Development Corporations (ADCs) that were created to accelerate growth and development in the agricultural sector have rationalized their activities. In addition to impositions on fiscal balances, the adjustment programmes have impacted aggregate consumption, availability of capital and public sector investment, ability to import capital goods, exchange rates and capital flows. It was the expansion in the tourist industry and associated sectors that supported most Caribbean countries by providing dynamic increases in output, employment generation and foreign exchange earnings.

Since 1985, some favourable external developments have enhanced export and overall performance in a large number of the countries including Antigua and Barbuda, Dominica, Grenada, Jamaica, St. Lucia and St. Vincent and the Grenadines. These include the improved economic performance of the OECS countries, particularly in 1987, and depreciation of the US dollar vis-vis the currencies of the USA's major trading partners. In particular, real increases in the world prices of bananas, bauxite and alumina and to a lesser extent sugar, together with the drop in world prices of petroleum and coal contributed to an improvement of the region's overall terms of trade between 1985 and 1987. However, falling oil prices continue to

contribute to significant income and output losses in Trinidad and Tobago, the only oil exporter in the region.

Countries with a viable macro-economic framework in place or those which were undertaking or commencing adjustment of their economies, mostly through more restrictive fiscal and monetary policies were able to: (a) maintain adequate public sector savings or even to increase them (Dominica, Jamaica and St. Vincent and the Grenadines); (b) reduce the current account deficit of the balance of payments to a level commensurate with net external flows; (c) maintain domestic inflation largely in line with that of their major trading partners; and (d) take advantage of favourable external developments to expand their exports. In countries where the use of the exchange rate as a policy instrument changed relative prices through a real depreciation of the currency, a decrease in protection (Jamaica) or a stimulated free trade regime (export processing zones in Jamaica), non-traditional manufactured exports to non-regional markets expanded sharply. In Trinidad and Tobago, the real depreciation of its currency, combined with improved world market conditions for its petrochemical exports, expanded these exports to OECS countries.

Problems related to public sector management continue to affect Guyana and more recently Trinidad and Tobago. The external debt remains an area of concern in the heavily indebted countries of the region (Antigua and Barbuda, Guyana, Jamaica), and arrears have increased in some cases. Debt re-scheduling has become an issue which needs to be tackled urgently in some of the countries (Guyana and Trinidad and Tobago). With respect to public finances, its management has improved in a large number of countries as reflected by higher public sector savings as a percentage of GDP (Table 7). But in some countries, there were further increases in real wages and salaries in 1986-87 and this remains a critical area where restraint is necessary. Unemployment continues to be a critical issue also, and this needs to be urgently addressed in all Caribbean countries.

Table 7: Caribbean Countries - Public sector Savings, 1977-87 a/

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
	(US\$ Million)										
Antigua	-2.2	-0.6	0.4	1.3	2.9	0.7	3.9	8.2	17.0	32.4	p/ 5.7
Barbados a/	14.9	36.8	39.1	37.8	27.3	39.7	58.9	44.4	34.2	25.1	1.5
Dominica a/	-1.6	-1.9	-12.8	-9.7	-2.5	-1.3	1.3	2.3	6.0	10.1	1.5
Grenada	2.7	1.6	0.5	-0.2	-0.6	1.8	3.4	3.5	3.5	-1.3	-5.0
Guyana	-3.8	28.9	21.4	12.7	-104.7	-105.4	-157.2	-131.5	-204.5	-137.8	-12.2
Haiti	29.0	29.4	19.9	3.3	-13.8	9.4	19.1	11.3	20.2	10.7	-6.7
Jamaica b/	-202.2	-74.1	-101.8	-207.2	-119.6	-118.9	-312.3	-35.5	-19.7	98.4	158.9
St. Lucia	2.5	3.9	1.7	5.1	1.3	0.1	4.0	6.5	10.7	19.7	21.9
St. Vincent	0.1	-0.1	-0.7	0.1	-0.8	0.7	-0.9	4.4	10.2	9.5	9.7
Suriname	-26.8	12.9	4.9	7.5	-22.4	-47.0	-125.3	-131.6	-176.0	-245.2	..
Trinidad	755.3	653.8	743.3	1188.3	1496.7	525.1	197.5	150.6	233.5	-67.8	..
	(As percent of GDP)										
Antigua	-3.6	-0.8	0.5	1.2	2.4	0.5	2.6	4.8	8.6	14.1	2.2
Barbados a/	3.0	6.7	5.8	4.5	2.9	4.0	5.6	3.9	2.8	1.9	0.1
Dominica a/	-4.4	-4.2	-28.3	-16.5	-3.8	-1.8	1.6	2.4	5.7	8.5	..
Grenada	5.5	2.5	0.6	-0.2	-0.6	2.0	3.6	3.4	3.0	-1.0	-3.4
Guyana	-0.9	5.8	4.1	2.1	-18.0	-21.4	-37.0	-29.4	-46.8	-26.7	-19.9
Haiti	3.0	2.9	1.8	0.2	-0.8	0.6	1.2	0.6	1.0	0.5	-0.3
Jamaica b/	-6.2	-2.8	-4.2	-7.8	-4.0	-3.6	-8.6	-1.5	-1.0	4.0	5.4
St. Kitts b/	11.2	5.0	4.7	4.3	-5.0	-3.4	-2.7	-1.0	-4.1	2.6	4.2
St. Lucia	3.7	4.8	1.7	4.5	1.0	-0.3	0.1	4.2	6.3	8.9	11.0
St. Vincent	0.2	-0.2	-1.4	0.2	1.1	0.8	-1.0	4.4	9.4	8.1	8.1
Suriname	-3.7	1.6	0.6	0.8	-2.2	-4.6	-12.5	-13.5	-18.1	-25.1	..
Trinidad	23.9	18.6	25.2	18.1	20.3	6.6	2.5	1.9	3.0	-1.4	..

a/ Fiscal year

b/ Central Government

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda

2.3.2 Leading Sectors

Although it is recognized that the bauxite and petrochemical industries have played leading economic roles in some Caribbean countries, especially the MDCs, agriculture, tourism and to a lesser extent manufacturing also have made substantial contributions to the economic development of individual countries.

Presented in Table 8 are the GDP contributions of the three sectors to national outputs. Agriculture is a major sector in Guyana and countries of the Windward Islands; manufacturing is important to Jamaica and Guyana; and tourism is a major sector in all the countries except Guyana and Trinidad and Tobago. This section will look at the economic performance of these sectors in individual countries.

Table 8: Gross Domestic Product by Sector at Current Prices (US\$ Million)

Country (Year of record)	Agriculture (%)		Manufacturing (%)		Tourism a/ (%)		Total
Barbados (1987)	85.7	7%	111.8	9%	135.0	11%	1249.1
Guyana (1986)	127.0	40%	44.0	14%	n.a.	..	318.0
Jamaica (1985)	121.2	6%	417.8	21%	404.5	20%	1979.8
Trinidad & Tobago (1987)	183.4	4%	191.6	4%	n.a.	..	4360.0
OECS							
Antigua & Barbuda (1987)	9.7	5%	8.2	4%	53.0	26%	205.3
Dominica (1987)	30.7	30%	6.7	7%	15.6	15%	102.5
Grenada (1986)	18.9	17%	4.9	5%	21.3	20%	108.7
St. Lucia (1987)	23.7	14%	13.0	7%	27.7	16%	173.6
St. Vincent (1987)	23.4	20%	9.3	8%	16.8	14%	117.5

a/ Because of varied accounting practices, the tourism industry is calculated using the sum of Hotels and Transport (individual countries may rely more or less than this figure indicates).

.. not available

Source: Own estimates based on references

2.3.2.1 Agriculture

The agricultural potential of the economies of Caribbean countries is quite small except for Guyana, Suriname and Haiti. The land resources which can be used for agricultural development are limited, and most of the good agricultural lands are already under cultivation of mainly traditional export crops. In addition to the small land resource base, the other major constraint to agricultural development is poor market prospects for the traditional products. Domestic markets are too small to absorb significant increases in production and export markets are highly competitive for the high-cost Caribbean producers. Despite these limitations, agriculture remains the most important of the productive sectors in most countries, accounting for about 10 percent of the region's output and 30 percent of its employment.

Over the last two decades the agricultural sector has performed unsatisfactorily and has not been realizing its full potential for contributing to economic development. The most important contribution

by agriculture to growth in the region has been the production of mainly bananas and sugar, which are exported primarily to the preferential UK market (bananas and sugar), and to the USA (sugar). In Barbados, Guyana, Jamaica and Trinidad and Tobago exports of sugar have averaged between 50%-95% of total agricultural exports, while in Dominica, Grenada, St. Lucia and St. Vincent and the Grenadines bananas contribute to between 22-88% of total agricultural exports.

In many countries production and exports of both commodities have been declining (Tables 9 to 12) while food imports have rapidly expanded. This has turned a sizable positive balance of trade in agricultural products in the late 1960's into a large and widening deficit today, and contributed to the deterioration of the balance-of-payments situation. The sector's poor performance has resulted in outward migration from the rural areas, which has greatly aggravated the unemployment situation and urban congestion.

Table 9: Caribbean Countries - Value of Sugar Exports, 1977-87 (US\$ Million)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Barbados	37.5	32.7	36.8	57.8	31.7	35.5	26.8	32.1	31.5	31.0	..
Guyana	92.8	91.8	90.4	120.6	108.8	87.7	71.5	70.9	66.4	83.4	79.8
Haiti	..	2.3	..	6.4	..	..	1.7	6.4	4.3	4.1	2.6
Jamaica	63.4	59.5	56.9	54.7	46.5	49.3	57.3	66.0	49.8	62.2	62.6
Trinidad	34.8	22.4	35.2	28.0	27.1	21.9	25.8	28.7	22.0	23.3	21.0

a/ Includes sugar, and molasses

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

Table 10: Caribbean Countries - Volume of Sugar Exports, 1977-87 ('000 long tons)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Barbados	108.3	88.1	101.2	119.6	63.0	89.0	73.5	85.9	83.4	98.6	..
Guyana	207.7	280.4	264.0	248.1	264.6	250.2	212.2	205.9	213.5	214.3	205.0
Haiti b/	-	5.3	-	19.2	-	-	7.1	15.2	10.8	11.0	6.5
Jamaica	209.8	193.0	187.7	131.8	121.3	138.3	136.7	157.1	152.0	143.3	142.0
St. Kitts	...	36.3	36.8	31.5	29.1	32.7	22.8	28.0	24.0	25.6	22.6
Trinidad	141.7	102.9	88.1	64.0	66.8	50.2	62.5	73.3	68.2	57.5	49.6

a/ Includes sugar, and molasses

b/ Metric tons

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

Table 11: Caribbean Countries - Value of Banana Exports, 1977-87 (US\$ Million)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Dominica	6.9	9.2	4.4	3.0	9.1	10.0	11.2	11.1	13.3	25.3	31.8
Grenada	3.2	3.4	3.7	4.1	3.7	3.7	3.2	3.4	3.7	4.9	6.5
Jamaica	13.9	17.3	18.2	9.2	4.3	4.7	6.8	1.5	4.2	9.2	23.0
St. Lucia	9.5	12.1	13.5	10.5	14.7	14.6	20.4	22.8	31.7	52.7	44.8
St. Vincent	5.6	7.3	5.9	6.3	10.1	9.0	11.0	11.8	16.9	19.7	..
Suriname	3.4	3.7	4.3	5.7	6.8	7.4	7.4	8.9	10.2	11.1	..

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

Table 12: Caribbean Countries - Volume of Banana Exports, 1977-87 ('000 tons)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Dominica	30.4	37.0	16.0	8.1	27.1	27.5	29.3	32.6	33.9	53.2	60.6
Grenada	14.0	14.2	14.1	12.5	11.5	11.9	10.5	10.3	9.9	8.1	8.7
Jamaica	74.9	72.7	63.9	33.1	18.1	21.2	23.0	11.0	13.0	14.0	30.0
St. Lucia	41.4	47.8	48.2	32.8	42.9	41.9	55.2	65.7	82.2	112.8	83.1
St. Vincent	26.2	31.0	22.3	18.8	29.8	25.0	27.1	31.5	40.6	41.2	..
Suriname	27.3	28	27.3	33.2	36.5	37.5	32.2	34.9	37.3	36	..

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

Sluggish growth has been a feature of both traditional exports and to a lesser extent domestic food production, and in both cases, the major constraints have been on the side of production rather than on demand. With respect to the demand for traditional exports, prospects for the continued expansion of markets are not good. As discussed above, there has been a consecutive lowering of sugar quotas in the US market, and there is likely to be increasing pressure for price reduction for bananas in the UK market, due to an expected oversupply. In addition, considerable uncertainty exists concerning the future of Caribbean banana exports to the UK market when the current LOME Convention (under which banana exports from the Region receive preferential treatment) expires, and when the unification of the EEC market occurs in 1992. The uncertain future for the region's traditional exports and increasing food imports, together provide sufficient conditions for diversification of its agriculture sector.

There are several reasons for the poor performance of the agricultural sector of the region. Solution to some of the problems require implementation of policy measures at the national level that provide greater incentives to the sector. Domestic policies which have an important bearing on agricultural performance are pricing of farm products, marketing, land tenure, the priority given to the agricultural sector in public capital expenditure, macroeconomic policies and sectoral planning. Regional policies also have a substantial role in supporting and complementing domestic policies. The scope for import substitution on a regional basis remains large in agriculture with very little progress being made in exploiting it. A preferential agricultural trading regime needs to be established and this must be supported by regional trade infrastructure such as transportation, organized marketing and market information systems.

2.3.2.2 Tourism

Tourism has been an increasingly important industry for the Caribbean countries since the 1960's, contributing significantly to GDP and providing valuable foreign exchange earnings and employment opportunities. The past decade has seen the tourism sector surpassing agriculture in most countries in terms of contribution to GDP. This has ranged from a low of 11% of GDP in Barbados to a high of 26% in Antigua and Barbuda (Table 8).

Although reliable figures on employment are unavailable for the region, tourism contributes significantly to employment generation both directly through hotels, restaurants and transportation, and indirectly through retail operations and construction. The foreign exchange generated by this sector is extremely valuable especially when placed within the context of the sector's contribution to these countries balance of payments deficits. For most countries of the region, the amount of foreign exchange earned by the sector is equivalent to that earned from the sale of all exported goods.

Since 1986, the Caribbean region has witnessed a boom in tourist arrivals and receipts (Tables 13 & 14). This expansion supported the diversification efforts away from traditional export crops in many countries. In 1986, tourist arrivals exceeded one million in Jamaica, thanks in part to the rapidly expanding hotel capacity and greater promotional efforts. Total arrivals and receipts also rose sharply in Antigua and Barbuda, Barbados, Belize, Grenada, St. Lucia, St. Vincent and the Grenadines and in Trinidad and Tobago.

The sector has been beset by a number of problems, which include relatively restricted air access, rising air transport costs, increased competition from other destinations, and social and political unrest in some of the countries. As a result, there has been persistent extra capacity in the industry; while the sector continues to grow there has not been a commensurate growth in receipts and profitability. Factors which also affect the industry are prevailing economic conditions in the industrial countries and exchange rate movements of their currencies. In fact, higher incomes in the industrial countries coupled with a relative appreciation of European currencies in the last five years have significantly affected the industry's boom in the region.

Table 13: Caribbean Countries - Tourism Arrivals, 1977-87 (thousands)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Antigua a/	104.1	128.8	169.8	205.0	209.1	173.9	174.8	216.1	260.6	293.2	334.1
Barbados	373.1	442.9	481.0	526.4	488.3	414.5	430.8	466.8	481.4	515.1	588.6
Dominica	31.0	35.6	28.1	24.8	22.8	22.1	28.5	27.0	28.6	36.3	..
Grenada	137.0	148.7	170.9	175.0	110.6	93.3	82.7	73.8	142.7	171.2	242.4
Haiti	291.1	301.8	341.9	306.5	281.1	219.9	227.3	214.6	210.3	202.1	200.6
Jamaica	386.5	532.9	593.7	543.0	552.0	670.2	781.1	859.7	854.2	1013.7	1100.0
St. Lucia	149.0	145.7	140.5	140.3	89.6	106.1	112.9	126.0	151.4	174.2	..
St. Vincent	32.3	48.8	56.2	78.0	71.5	69.0	74.3	92.2	78.5	83.6	..
Trinidad	202.0	208.4	170.8	205.9	215.5	198.3	207.3	198.1	187.0	191.0	214.0

a/ Series revised beginning 1982

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

Table 14: Caribbean Countries - Tourism Receipts, 1977-87 (US\$ Million)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 p/
Antigua a/	24.7	29.5	38.7	38.6	44.9	73.2	89.4	117.9	134.4	151.3	169.2
Barbados	111.5	138.6	201.5	251.0	261.9	251.1	251.6	284.2	309.1	338.5	354.0
Dominica	3.0	3.8	2.6	2.9	3.3	6.6	8.2	10.8	9.8	10.4	..
Grenada	8.0	14.6	19.5	20.1	15.1	14.0	14.6	17.8	24.4	26.7	27.6
Haiti	36.7	42.0	60.6	76.5	74.9	81.2	72.7	68.0	68.0	56.1	60.0
Jamaica	105.6	146.8	195.4	240.5	284.3	337.8	369.0	421.0	436.8	545.0	615.9
St. Lucia	17.8	24.3	33.4	32.9	29.4	29.5	36.2	39.9	44.3	52.9	..
St. Vincent	5.9	11.1	12.8	16.7	14.2	14.4	15.9	16.1	17.5	19.3	..
Trinidad	91.2	109.2	119.7	151.1	63.3	197.0	87.0	98.5	99.2	83.3	111.2

a/ Series revised beginning 1982

p/ Preliminary

.. Not available

Source: IBRD Economic Memoranda, April 1988

The prospects however, for continued growth of the tourism industry remains promising. It is the general opinion that tourism will continue to be a leading sector and a key area of growth. Large hotel expansion in Jamaica places it in a position to capture a significant share of the rapidly growing tourist market. Ongoing hotel capacity expansion in Antigua and Barbuda and St. Lucia may enable these countries also to take advantage of the current boom, provided produced quality is maintained and even enhanced. Caribbean tourism officials have warned, however, that the industry already has too many unprofitable hotels, and they have urged governments not to concentrate excessively on increasing the number of arrivals, but rather on longer stays and increased spending from existing tourist levels. There is also need to ensure that a significant portion of the tourist's expenditure remains in the region, by reducing the high import content of the goods and services which tourists consume.

2.3.2.3 Manufacturing

Manufacturing plays a relatively large role in the MDCs of the region - Barbados, Guyana, Jamaica, and Trinidad and Tobago, but its performance in these countries ranges from lackluster to poor. The sector's contribution to GDP as well as real output have fallen in recent years. Production centres on light manufacturing, processed agricultural commodities and assembly of consumer goods. In order to attract both local and foreign investment, new industries are presented with incentives ranging from tax holidays and duty free imports of materials and equipment, to subsidized production.

Despite these incentives, the Caribbean is a comparatively high cost producing region for manufactured goods for the international market. For instance, using Jamaica and Trinidad and Tobago as representative of the region, it can be seen that labour costs are substantially higher compared to other developing nations (Table 15). Since this is an extremely price sensitive factor of production and one of the few not subsidized, the region's ability to effectively compete with other countries is therefore very limited.

Changes in the manufacture and trade in processed products are also factors likely to affect the region's competitive position. The world market has been moving away from low cost, low value-added, and labour intensive goods in favour of high cost, high value-added, synthetic, capital and knowledge intensive goods. This change has been partly responsible for the large increase in trade among the industrialized countries and the stagnation of traditional north-south trade. A second important factor affecting traditional trade flows has been the rise in protectionism in the developed countries. These could significantly alter trade flows in an out of the Caribbean.

Table 15: Comparative Labour Costs (US\$)

Country	Year	Agricult.	Manufact.	Overall
Jamaica	1978	0.268	0.194	0.230
	1980	0.286	0.222	0.262
	1984	0.230	0.169	0.207
Trinidad	1978	0.123	0.150	0.188
	1980	0.170	0.223	0.243
	1985	0.367	0.363	0.413
Venezuela	1978	0.069	0.066	0.065
	1980	0.100	0.088	0.087
	1982	0.110	0.104	0.102
Columbia	1978	0.006	0.007	0.005
	1980	0.009	0.012	0.007
	1983	0.010	0.009	0.008
South Korea	1978	0.001	0.000	0.001
	1980	0.001	0.000	0.001
	1982	0.001	0.000	0.001

Note: Unit Labour Costs are in US\$ = (Employee Compensation in Local Currency/ Constant Price GDP (1980=100)/ US\$ exchange rate.

Source: United Nations Yearbook of National Account Statistics

SECTION III

ELEMENTS FOR AN AGRICULTURAL REACTIVATION PLAN: REVIEW OF PAST AND CURRENT INITIATIVES

3.1 Introduction

A review of various initiatives with respect to agricultural development in the Caribbean is considered of importance in order to learn from these experiences, and to provide some perspective of the framework within which IICA is discharging its mandate to develop the Plan of Joint Action for Reactivation of Agriculture for the region. An appreciation of these circumstances is also important because of the differences between countries of Latin America and those of the Caribbean.

One of the major differences between the Caribbean and Latin America is the fact that the Caribbean countries, with the exception of Suriname and Guyana, are small island states. As such, they have a narrow range of agricultural activities which often overlap in product type and seasonality, and domestic markets which are extremely small.

One of the salient characteristics of the Caribbean is the variable importance of agriculture to the different countries. Agriculture plays an important role as a source of income and employment in the smaller Eastern Caribbean islands, Guyana, Jamaica and Suriname, but it is of less significance in Trinidad and Tobago and Barbados. Certain countries such as Jamaica, Suriname and Guyana although largely agricultural, also have large deposits of bauxite, which until recently provided a significant share of capital inflows to finance economic development activities. In the case of Trinidad and Tobago, petroleum and its derivatives have been the mainstay of economic growth and development.

Some Caribbean countries have been exploring alternative paths of development. In Guyana, Grenada and to some extent Jamaica, attempts were made to bring about different degrees of social and economic reform. An example is the establishment of state farms and cooperatives as major production units, using previously owned or recently acquired lands by the state to help resolve the problem of land tenure in agriculture. These explorations reflect an attempt to deal with institutional rigidities that continue to constrain the process of agricultural transformation and development in the region.

3.2 Regional Initiatives in Agricultural Development

Traditionally, Caribbean agriculture was geared to supply primary products to metropolitan markets. Very little processing was done within the region and most of the food consumed was imported. There was therefore very little linkage between domestic demand and agricultural resource use. Since the late sixties, the Caribbean countries as a group have embarked on several initiatives to strengthen this linkage through diversification of agricultural

production. These initiatives were also directed at reducing economic vulnerability due to overdependence on primary commodities, and at reducing the foreign exchange burden due to food imports, while restoring agriculture to its previous position as a major source of economic growth and development of the region.

During the 1960's, there was the conviction among academicians, certain practitioners and administrators that a greater degree of specialization based on the comparative advantage principle would solve some of the agricultural development problems that were surfacing. Such attempts were unsuccessful due to several factors, some of which include similarities in production regimes with respect to both season and product type, the wide disparity in resource endowment between the larger and smaller states, and perhaps most important, the lack of a common approach and consensus to agricultural development on a regional basis. This led then to the development of several initiatives that are discussed below.

3.2.1 Formation of a Regional Economic Association

In 1968, the Caribbean Free Trade Association (CARIFTA) and the Eastern Caribbean Common Market (ECCM) were formed along with the creation of the Caribbean Development Bank (CDB). CARIFTA in particular was seen as an important initiative to accelerate production in member countries by increasing intra-regional trade. A major instrument used to facilitate production and trade was the Agricultural Marketing Protocol (AMP).

The AMP however had very limited success. While intra-regional trade did increase, its impact and benefits were disproportional. The larger countries (MDCs) such as Guyana, Trinidad and Tobago, and Jamaica were able to substantially increase their share in trade vis-a-vis the smaller ECCM countries. With respect to agricultural diversification, the impact was minimal mainly because trade in agricultural products did not increase as much as that of industrial products. This was due to similarity in range of agricultural commodities produced and to the much stronger integration efforts in promotion of manufacturing than agriculture. Rice, which represented one third of the total value of agricultural exports from the MOC's was the major item of agricultural trade.

3.2.2 Formation of a Common Market

In 1973, CARIFTA was replaced by the Caribbean Community and Common Market (CARICOM). In 1981, a sub-regional grouping -the Organization of Eastern Caribbean States (OECS) was formed by the Windward and Leeward Island member countries of CARICOM. These integration efforts were aimed at functional cooperation and coordination in a number of policy areas, including foreign policy.

To accelerate production and trade within the Community, a Common External Tariff (CET) was implemented. The CET reduced and in some cases removed tariffs on goods traded intra-regionally, while a higher tariff was imposed on imports from extra-regional sources. Due to the

lack of success of the AMP, a Guaranteed Market Scheme (GMS) was initiated whereby the MDCs would purchase a specified quantity of products from the LDCs.

Both the CET and the GMS were also unsuccessful. The CET did not resolve the problem of disproportionate benefits from trade going to the MDCs. With respect to the GMS, the number of commodities covered was too small and like the AMP, it did not attempt to remedy the basic structural problem of agriculture in each country.

3.2.2.1 Regional Food Plan and Regional Food and Nutrition Strategy

In response to the failures of previous efforts to accelerate agricultural development and continued deterioration of the regional agricultural sector, an attempt was made in 1975 to develop and implement the Regional Food Plan (RFP). The RFP was the first comprehensive initiative to be mandated by the Heads of Government of CARICOM in which a coherent regional strategy was proposed for supporting national efforts for agricultural development.

The RFP was designed specifically to accelerate food production and reduce the food import bill, especially of those imports which commanded the bulk of foreign exchange expenditures. Its main objectives included achievement of a significant level of self-sufficiency in meat products by 1985, food production projects to be undertaken by the newly created Caribbean Food Corporation (CFC), and regional marketing and distribution of agricultural inputs. Since meat, meat products, cereals and grains were the primary food imports, the RFP targeted increased production of these items. The proposed regional livestock programme and the Corn-Soya project jointly financed by a number of governments were examples of RFP's initiatives.

The RFP was soon replaced by the Regional Food and Nutrition Strategy (RFNS), which was a broader multidisciplinary approach incorporating nutrition and health concerns, and complementary areas of education and communication. The RFNS had as its goals economic self-sufficiency and self-reliance, and the improved health status of the region's population. Specifically, it was hoped that the RFNS would reduce the incidence of malnutrition, reduce dependence on imported food, and accelerate human resource development in technical and management areas of agriculture, nutrition and health. The RFNS concentrated on identification and development of projects in each food commodity sub-sector for implementation in Member States.

The RFP/RFNS represented the first regional approach to mathematical programming of agricultural development. Food production and distribution targets were calculated using a model specifying resource allocation and production activities, and the demand for various food groups for selected years up to the 1990's were forecasted. The model's preliminary findings indicated that the region was capable of producing enough food to meet its demands with very little additional resources.

A number of studies were undertaken in general to support the RFNS. These included production and marketing of fruits and vegetables and development of a strategy for the oils and fats subsector.

In order to promote intra-regional trade in edible oils, an Oils and Fats Agreement (OFA) was reached. The OFA arrangement, however, had limited success in reducing extra-regional imports. The problems were first that intra-regional trade was confined to coconut products whereas extra-regional imports consisted mostly of substitute products. Second, the regional deficit widened as consumption increased because regional production of copra was sluggish. Third, that the OFA did not provide appropriate measures to protect the domestic industry because the price levels used exceeded world prices and this stimulated extraregional imports of oils and fat substitutes. Fourth, the shortage of capital precluded full implementation of the Plan's proposed projects. In addition to these problems, some projects implemented under the RFP/RFNS were not successful (e.g. Corn-Soya and livestock projects).

The more comprehensive RFNS also failed to make a substantial impact on the region's food supply and agriculture. One of the major reasons for failure of the RFNS was that it lacked specific implementation mechanisms, such as projects and specific actions. At the national level, governments failed to integrate various aspects of the RFNS into their overall planning and policy framework. The failure of the RFNS was also assisted at that time by rapid changes in the international economic environment which had adverse effects on the national economies. Many countries in the region experienced an economic downturn, and this was accompanied by a continuous decline in food production since the late 1970's. The consequence of low food production has been a progressive decline in intra-regional food trade.

3.2.3 Regional Initiatives in the 1980's

A number of initiatives have been adopted in the 1980's to support national efforts in the thrust for developing the region's agriculture. Two of these are project-based and they include the Caribbean Agricultural Extension Project (CAEP) and the Caribbean Agricultural Rural and Development Advisory and Training Service (CARDATS). These projects aim at among other goals institutional building, strengthening of extension and farming systems, training, and improvement in communication skills and facilities.

With respect to policies, two new measures were adopted in 1988 to reverse the downward trend in food production and intra-regional trade. These are the New Marketing Arrangement (NMA) which provide for an increased Common External Tariff (CET) on extra-regional imports so as to stimulate free movement of a wider range of commodities; and the removal of all tariffs (with the exception of some products from the LDCs) on goods produced and traded within the region. These measures are to be implemented on a phased basis.

Two major initiatives in Caribbean agriculture were also developed in 1988. The first which is regional in scope is CARICOM's Regional Agricultural Sector Programme; the second, of sub-regional scope is the Agricultural Diversification Programme for the OECS.

3.2.3.1 Regional Agricultural Sector Programme

The Regional Agricultural Sector Programme (RASP) was developed in response to a mandate given to the CARICOM Secretariat by the Standing Committee of Ministers responsible for Agriculture (SCMA). The mandate requested preparation of a comprehensive programme for the development of the agricultural sector and an implementation plan for various projects specified therein. It is the view of this mandate that an integrated approach to the mounting problems of the region's agriculture offered the best prospects for retrieving the situation. As a component of RASP, a Regional Action Plan (RAP) was developed. The main elements of the RAP are discussed below.

1. Six objectives were identified and they include: regional food and market security for consumers, producers and traders; greater diversification of production and markets (taking into consideration the need to preserve employment, and foreign exchange contribution by the sector); increased linkages with the agricultural sector and between agriculture and other sectors of the economy; increased resource productivity (human, physical and financial); increased levels of technology use; improved inflow, distributions and use of resources in agriculture as well as preservation of environmental and ecological balance and stability.
2. Three major policy areas were developed as the foundation for development of specific programmes and projects for implementation:
 - a. The first was directed to traditional exports, non-traditional exports and domestic agriculture. These specific policies call for:
 - i. non-abandonment of the traditional export sub-sector despite its declining attractiveness;
 - ii. the allocation of resources to improve efficiency in production and marketing of the sub-sector in view of the critical role it is expected to play in future development of agriculture;
 - iii. a commercial approach to diversification of activities within the subsector taking into consideration the need to avoid "excessive" dislocation of labour and capital.

With respect to non-traditional exports the policies call for: i) market-led approach to development of the subsector both in terms of regional and export markets; ii) exploitation of special programmes such as the Caribbean Basin Initiative, LOME and CARIBCAN.

In the case of domestic agriculture, the policies specify a general framework that provides for: i) food security and nutrition stability, reductions in rural poverty and reductions in foreign exchange expenditure on food; ii) enhancement of the ability of the small-farm sector to increase output and productivity by focusing on such issues as land fragmentation, security of tenure, praedial larceny and financial resources.

- b. The second policy area relates to the framework of existing CARICOM integration arrangements. Here emphasis is given to the promotion of policies to enhance inter-regional flow of capital and payment of claims, promotion of standards, and removal of barriers to inter-regional trade.
 - c. The third area emphasized strengthening of the institutional capability to manage national technology and natural resource development. Specific policy areas relate to: i) harmonization of macroeconomic policies as they affect agriculture; ii) improve management of resources; iii) conservation of the environment; iv) technology development and adoptions; v) improve efficiency in the utilization of research and development resources; vi) new product developments and; vii) strengthening the planning and administrative capabilities of agricultural sector institutions.
3. Three broad categories of programmes, each containing a number of projects, were developed to give effect to the policy themes listed above.
- i. Policy Review and Adjustment Programme - this was designed to assess the impact of macroeconomic policies on the agricultural sector. Results of this analysis are expected to provide the foundation for the harmonization of policies for the sector.
 - ii. Commodity Based Programmes - these contain projects designed to address both technical and economic aspects of traditional and non-traditional export crops as well as domestic livestock; fisheries and forestry are also included in this category. The list contains some 22 projects.
 - iii. Support Programmes and Projects - while 24 projects are designed to provide support to the commodity-based crop and livestock projects in the first instance, they are also designed to address on a long term basis, some of the factors that constrain the revitalization and transformation of Caribbean agriculture. The project list include areas such as finance, planning and administration, quarantine and surveillance systems, marketing, nutrition, technology generation and transfer and human resource development.

4. Implementation Strategy for projects: the Plan also provides a framework for implementation of the projects identified. This framework utilizes the existing CARICOM's institutional arrangements, and regional and international agencies to give effect to various project components. Provisions are also made for monitoring and evaluation of these projects. Appendix II gives a summary of the CARICOM projects.

3.2.3.2 OECS Agricultural Diversification Programme

In March 1988, a meeting of the Heads of Government of the OECS was convened to analyse the future of agriculture in those countries, particularly in view of the proposed European Market unification for 1992. At that meeting a decision was made to develop a work programme for the diversification of the agricultural sector of OECS States. The objective of the programme is to increase the contribution of non-traditional export commodities to foreign exchange earnings, and to reduce the food import bill through the promotion and increased utilization of locally produced food.

The strategy devised for achieving the stated objectives comprises a short-term and a medium- to long-term plan. The short-term plan incorporates those elements which, if implemented could lead to increases in export earnings during the calendar years of 1989 and 1990. Also included in the short term action are elements that, whilst not producing immediate results, are nevertheless needed if the medium and long-term objectives are to be achieved. The medium- to long-term plan incorporates commodities that need further research if successful commercial production is to be encouraged.

The programme is oriented towards immediate implementation with well identified projects and a programme of work. It is divided into three components: productive, supportive and coordination (or monitoring and evaluation).

a. Productive Component

This component aims at promoting mainly the commercial production of crops through the introduction of varieties and cultivars, which are appropriate for the ecological conditions of the OECS and which meet the particular demands of the targeted markets.

b. Supportive Component

This addresses the support needs of institutions and infrastructure that are either inefficient, insufficient or non-existent, but are nevertheless important for success of the production-marketing component.

c. Coordinating Component

A Coordinating Unit is to be created with the responsibility for implementing the programme at the sub-regional level, and monitoring of activities at the respective national levels. This

Unit is in the process of being established in the OECS Secretariat.

One of the principal features of this programme is its practical orientation and the fact that it was conceived to be implemented with resources already available to the sub-region. As such, much time and effort usually devoted to seeking funds will be saved, and the programme can move directly into the implementation stage.

3.3 National Initiatives

There have also been several initiatives at the national level aimed at removing the constraints to agricultural development. While some of these pre-dated and others were simultaneously implemented with the regional efforts, their impact has so far been minimal.

One of the principal concerns was related to unequal land distribution and foreign ownership and control of land resources. Some of the national initiatives attempted to resolve this problem through direct acquisition of lands and complementary forms of cooperation by governments. These include direct state participation and control in Guyana in various agricultural production activities; Land Settlement Schemes in Jamaica where land previously mined for bauxite was restored and made available to farmers under various types of lease arrangements; Sugar Workers Cooperative Council in Jamaica, a project in which large sugar plantations were transferred to workers for cooperative ventures; state land projects in both Trinidad and Tobago and Guyana in which farmers were settled on small holdings and provided limited services in an effort to transform agriculture; and the Black Bay Farmers Association in St. Lucia, a project in which a group of farmers cultivate one general area and are supplied with common services or the Model Farm Project as an example of public-private sector cooperation.

In addition to the above, a large number of efforts mainly through projects of varying sizes have been made in the last decade to boost performance of the agriculture sector. Some of these include establishment and strengthening of marketing boards, rehabilitation and development of new infrastructure such as roads, transport and irrigation facilities, training at various levels both within and outside the region to improve skills and capabilities, strengthening of information systems for agricultural planning, implementation of tariffs and provision of subsidies to protect and accelerate agricultural production.

3.4 Evaluation

None of the national and regional initiatives discussed above (with the exception of RASP and OECS Diversification Programme which are relatively new) have achieved the expected success in terms of removing constraints to regional agricultural development. At the national level, the historic problems associated with the structure of agriculture together with technical and institutional weaknesses have not been effectively addressed. Very often, these problems have been

exacerbated by governmental policies. Major efforts in land reform and appropriate land policies have yet to be seriously implemented and the distribution of land holdings continue to be a major obstacle to development. The difficulties of governments to address this issue has resulted in rising rural unemployment, fragmentation of holdings, declining productivity, land degradation, a growing number of landless farmers and rural poverty.

At the policy level, initiatives by governments have sometimes lacked cohesion and consistency. The increased integration of agriculture and the rural economy into the national economic framework has not been accompanied by similar efforts at planning and policy making levels. It is not surprising, for instance, that a large number of policy decisions which are taken outside of agriculture have serious direct and indirect impacts on the sector's performance. A large number of these decisions, particularly in recent years have not considered the probable consequences on and indicate very little concern for agriculture. Relevant examples are the impacts of macroeconomic and trade policies and structural adjustment programmes on the agricultural sector. The failure to integrate such policies into the overall economic policy framework, taking into consideration sectoral consequences, has been the major weakness of planning at both sectoral and national levels.

At the regional level, common approaches to resolve problems suffered from the same weaknesses which exist at the national level. In fact, it can be said that the lack of effectiveness of regional programmes and mechanisms merely reflected the lack of effectiveness at the national level. A close examination of the evolution of regional approaches would indicate that each was designed to address specific weaknesses of previous efforts, and no account was taken of the dramatic economic, political and social changes occurring in the individual countries and in the world economy. Some of the weaknesses of the regional approaches also include the following:

- a. lack of clearly defined policy objectives to guide the development and implementation of programmes and projects;
- b. exclusive dependence on the public sector which at the time had limited experience with large scale agricultural projects and programmes;
- c. lack of political commitment to provide the necessary support: economic, financial and other;
- d. absence of a clearly defined institutional framework or mechanism to implement and monitor projects;
- e. poor utilization of the technological base which was required to ensure project success;
- f. lack of a clearly defined role for agriculture in view of the differences in agricultural resource base, and the fundamental

shifts and emphases placed on other economic activities by individual governments;

- g. very slow progress in deepening of the integration process which often resulted in policy decisions at the national level being inconsistent with regional initiatives.
- h. lack of effective implementing mechanisms for projects and specific policies.

Deterioration of the agricultural performance calls for new policy directions and guidelines which can provide an overall increase in incentives to the sector. The latest initiatives, the Regional Action Plan and the OECS Diversification Programme represent a major effort in this direction. They both suggest strategies to simultaneously address the large number of constraints impeding development of the region's agriculture, taking into account national, regional and global perspectives. They also provide a strategy that incorporates the roles of complementary institutions at various levels in the execution of respective programmes of action.

SECTION IV

POLICY OPTIONS AND AREAS OF ACTION: COMPLEMENTARY PROPOSALS

4.1 Introduction

This section discusses -based on issues examined above- policy options in the strategy for reactivation of agriculture that are complementary to those raised in CARICOM and OECS initiatives. The first part highlights certain policy issues that must be addressed at the highest level of decision-making in order to provide the policy framework and support for activities identified under the Joint Plan of Action. This support is considered critical to the revitalization and modernization of the agricultural sector in the Caribbean. These issues are not exhaustive and they include: the role and importance of the agricultural sector in the development process; macroeconomic policy issues in support of the sector; import substitution; employment generation; scale of production; producer security; natural resource management; and the role of the State.

The second part identifies some key complementary areas of action for development of the region's agriculture. Some of these include trade and cooperation between the Caribbean and Latin America, strengthening linkages between agriculture and other sectors and institutional development.

4.2 Rationalization of Policy Options

4.2.1 Agricultural and Economic Development

Despite the poor performance of the agricultural sector over the last 20 years, the sector remains the major platform from which to arrest the general slowdown in growth and development of Caribbean economies. This is so because, with the exception of bauxite in Jamaica and Guyana, and oil and natural gas in Trinidad and Tobago, the only sustainable resources available are the land and the people. The situation therefore demands policies that ensure that the land is used in such a manner as to achieve the highest levels of productivity on a sustainable basis. Such an approach should lead to high levels of food security (regional and national), maximization of foreign exchange savings through import substitution and earnings through expansion of agricultural exports.

It has been argued elsewhere ^{6/} that the declining attractiveness of traditional export crops should not result in widespread abandonment of these commodities, but instead efforts should be made to improve efficiency within that particular sector, given its strategic

6/ See Caribbean Community Programme for Agricultural Development - Regional Action Plan, Caricom Secretariat, Georgetown, Guyana, 1988.

importance in terms of the generation of foreign exchange and employment. What is required therefore, is a commitment of resources to encourage the rehabilitation of existing production systems while at the same time promoting diversification of the traditional sector. In this regard, special mention must be made of the agricultural diversification thrust currently underway in the Eastern Caribbean States.

In general, export diversification (production and markets) may provide a partial solution to the problem especially if emphasis is placed on high-priced 'non-traditional' exports. However, since most of the Central American and other Caribbean countries are planning to produce many of the same commodities, unless extreme care is taken, the non-traditional commodities may suffer the same decline in prices as occurred with traditional export commodities. Such a strategy therefore, calls for efficient market intelligence, and a well structured research and development system that allows for new commodities to be continually assessed and offered in the market place, as well as quality assurance.

It is also indicated that greater reliance be placed on short and medium term crops rather than long-term tree crops, and the application of new technologies for shortening the life cycle of tree crops through the use of growth regulators and high density planting. Indeed, a great deal of flexibility should be encouraged as part of the strategy.

Since it is proposed to develop organic linkages between mainstream LAC countries, through joint ventures and networks, it is important that institutional barriers to the development of such linkages be removed so as to ensure the success of these ventures. Policies to promote and facilitate these processes should be developed and implemented through a series of bilateral and perhaps multilateral arrangements for which precedent already exists.

4.2.2 Effect of Macroeconomic Policies on Sector Activities

Macroeconomic policies are of major importance to the development of agriculture particularly in the Caribbean. This arises from the special characteristics of the sector and its role in the overall economy. A large share of national output and employment is accounted for by the sector. It is also the most important source of foreign exchange earnings and savings, and a large proportion of personal income is spent on food.

The inter-dependence of agriculture and other sectors of the economy requires a more comprehensive approach to sectoral policy formulation. Agricultural input and output price changes for example have a profound impact on other dimensions and sectors of the economy and vice-versa. Some of the multiplier effects of these include changes in cropping patterns, farm incomes and rural welfare, budgetary allocations, food imports, foreign exchange earnings/ savings, and balance of payments. Policy actions directed to other parts of the economy also have repercussions on agriculture. The priority given to

manufacturing and tertiary activities in the development strategies through price policy, investment policy, trade and exchange rate policies have often reduced the competitiveness of domestic agriculture.

It is widely believed that macro-economic policy decisions that affect the agricultural sector are not taken within the sector and with few exceptions show very little sensitivity to peculiarities of the sector. Classical examples are the widespread adoption of exchange rate policies and other stabilization and structural adjustment mechanisms without careful evaluation of their impact on the sector. In addition, the allocation of financial resources to the sector has very little relationship to real and expected contributions of the sector to national and regional development. Such a situation must be reversed and the sector should be provided with adequate resources: technical, managerial, financial and other, to ensure maximum contribution to its development and transformation. In this regard policies must be developed to mobilize both public and private sector resources for sector activities.

Given the fact that farmers will be expected to increase production both for the domestic and export markets, it is essential that policy measures be adopted to increase the competitiveness on the export market and at the same time offer some guarantee of access to the domestic markets. Such measures should be sensitive to the possibility of retaliation. The emergence of protectionist policies in both developed and developing countries emphasizes the need for enlightened strategies in this regard. For example, tariffs on imported items from third countries and suitable exchange rate adjustments may increase the competitiveness of locally produced food at both the national and regional levels. Such measures are to be preferred to quantitative restrictions, since in the latter case there is a greater likelihood of retaliation.

Fiscal policy measures also need to be re-examined; efforts need to be directed toward the removal of biases against agriculture while at the same time minimizing the economic and social costs of such policies. The development and application of creative incentive programmes (including subsidies) represent one critical area of policy. Previous subsidy programmes suffered inherent weaknesses and have achieved only modest success largely because they have often been provided to support production processes which are difficult to monitor, rather than to support market price. A realistic market price allows the farming enterprise to be planned as an efficient business operation whereas subsidies on production processes frequently lead to inefficiencies, leakages and misuse of funds as well as being a substantial drain on public resources.

Tax policies may also need to be rethought. The development of innovative tax concessions e.g. waiver of duty and purchase tax (or value added tax) on inputs for agriculture coupled with tax holidays on profits could provide incentives for investment in agriculture. It should however be noted that some of these measures are in place in different Caribbean countries with varying degrees of success. There

is therefore, the need to review them in light of past experience, and make them more attractive to potential investors.

The question of interest rate policy also should be addressed. The debate continues with respect to concessionary rates and as to whether such funds could be better applied to increasing the market price. Interest rates however, are not the only issue with respect to the availability of capital for the sector. There needs to be a re-emergence of close linkages between the financial community and the farming community as had been the case during the era of the plantation system. Not only will additional financial resources become available to the sector but novel savings-investment linked programmes could be developed for the sector.

4.2.3 Import Substitution

As discussed under national and regional initiatives, import substitution was, and continues to be, a major guiding principle for increasing regional food production and intra-regional trade in food. The RFNS placed heavy emphasis on this. The failure of the RFNS and other initiatives give rise to three critical issues which need to be addressed.

The first is related to the methods of identifying opportunities for import substitution. The standard method used in the past has been to scrutinize the food import bill in order to derive a list of products to be targeted for increased production. This approach has proven to be very limited. The main items targeted for import substitution such as cereals, grains, meat and other livestock products require specific resources (e.g. a large expanse of land) and an ecology which in most cases does not exist in the island-countries.

It is therefore necessary to undertake not only an in-depth study of product groups from a regional perspective, but also to attempt, as it has been done before, to regionalize production in order to maximize natural and economic comparative advantages within the region.

The second issue, which is somewhat related, is concerned with resource and market constraints. One of the questions still to be answered is, to what extent can the countries individually or collectively succeed with an import substitution strategy of the magnitude attempted before? The RFNS indicated (under some questionable assumptions) that the region could meet its food needs in the 1990's with marginal resource increases. The resource endowment reality, however, with the exception of Guyana and Suriname, indicates that availability of good quality land is limited and concentrated in a few countries. The "best" arable land is currently under intensive mono-crop production and will likely be so for some time. A very high proportion of land available to agriculture can be considered marginal and is seriously constrained by climatic, topographic and fertility factors.

The small size of the regional market has posed a serious demand problem for the economic operation of large scale units of

productions, particularly for cereals, grain and livestock products. Previous studies (such as the RFNS) which advocated import substitution have not always considered the effects of local raw materials or transport costs on estimates of regional viability.

The above factors suggest that the costs of import substitution may be much higher than previously anticipated. Furthermore, the distinction should be drawn between import substitution, (local production of previously imported products), and import replacement, (for example replacing wheat flour with cassava flour). In the latter respect, there is much potential for local production and processing of fruits and vegetables to replace imports.

Central to the issue of import substitution is the trade-off that exists between that goal and keeping cost of living in the Caribbean within control. It is a fact that, because of the difficulty of achieving economies of scale both at the production and at the distribution level, most locally produced food is costlier than imported substitutes. This issue becomes even more critical if policy continues to focus on "substitution" rather than on "replacement". The trade-off needs to be explicitly addressed in order to define realistic and very specific programmes.

The third issue relates to the ineffectiveness of the mechanisms (e.g., the Common External Tariff) used to implement the strategy of import substitution. Previous experiences indicate that they are not sufficient for the strategy to succeed. Complementary programmes and greater government commitment are needed both at the national and regional levels. These include increased real expenditures on research and development, extension, training, infrastructure, intensification of land reform efforts and appropriate pricing and marketing policies.

4.2.4 Employment

The main elements of the employment problem in the Caribbean are quite evident. Population and labour force have grown rapidly relative to the natural resource base and although in the Caribbean as a whole capital has risen even faster, it has generally not been deployed in ways that absorb as much labour as might be possible. It was once thought that industrialization would solve the employment problem in most Caribbean countries. Certain this was the premise for the "Puerto Rican Model" of Industrialization in the Caribbean in the 1960's. In contrast actual labour absorption by the industrial sector has been disappointing.

In principle the employment problem could be attacked on either the supply or the demand side. In practice, however, little can be done to bring about a supply-side adjustment. The only real supply-side potential is to reduce the growth of labour supply in the long run by reducing population growth.

Since the potential for correcting the labour market disequilibrium by working on the supply side is quite limited, policy must

concentrate on the demand side of the equation. Many different kinds of policy affect the economy's ability to create jobs for a growing labour force: wage; investment promotion; fiscal, foreign trade, education, and population policies -all have important implications for employment.

The agricultural sector is expected to contribute significantly to the alleviation of unemployment problems in the Caribbean (unemployment rates are as high as 25% in some countries). In fact, employment generation constitutes a major issue in the development strategy for the sector. One set of policy instrument needs to be directed at stimulating output, especially in relatively high-income, high-productivity and high-wage sub-sectors of agriculture. Another strategy is to try to promote the adoption of more labour-intensive production techniques. Two major approaches have been suggested. One is to alter relative prices and thus create incentives for businesses to substitute labour for capital. The other is to develop technologies more appropriate to the factor proportions prevailing in the Caribbean.

4.2.5 Scale of Production

Of significance in the revitalization process will be the size or scale of the production unit which will be largely influenced by land ownership patterns. In most of the CARICOM countries a large percentage of the land is owned by a small percentage of farmers, the greater number of small farmers occupying relatively small plot sizes. However, of more recent development in the region is the fact that the State is the major land owner, which opens up new possibilities for enhanced land redistribution programmes. Perhaps, there needs to be a re-examination of the technological aspects of the so-called plantation system in which there were frequently large central production units (linked to processing in the case of sugar) and "satellite" small farms. Under this system technology transfer to the small farmers may indeed be easier and less costly.

Alternatively, small farm and large farm sectors can be developed in such a way that the small farmers are encouraged to pursue a fair degree of specialization and produce high priced crops such as vegetables, fruit, spices and ornamentals while the large farmers produce the meat, dairy products, carbohydrates and vegetable protein which can be produced in a mechanized system in order to provide these items at low cost to the urban population.

It is important to note that the small-scale operators have, in the past, been denied access to resources on a scale that would increase their viability. Such trends should be reversed as these operators, as they have proven, have a critical role to play in the modernization process.

4.2.6 Producer Security

The issue of market security has already been discussed. However, it has been reported that loss experienced by farmers through praedial

larceny has reached epidemic proportions. It has become a Caribbean-wide problem. Policies should therefore be developed to eradicate this menace to the farming community. The laws governing such activities are either obsolete or ineffective in dealing with this problem and therefore warrant comprehensive review. Such a review should, where possible, lead to a common approach to the solution of this problem. The existence of this menace (risk) has often led to frustration among existing farmers as well as acting as a constraint to investment within the sector.

4.2.7 Natural Resource

Natural Resource management and conservation is probably one of the most critical areas affecting sustainable agricultural development in the Caribbean. The natural resource base in the Caribbean is very fragile largely because it is scarce and subject to various pressures from population growth, effects of tourism, etc.

With respect to agriculture, soil and water are the fundamental resources that enable and sustain production. Much of the land for agriculture, however, is marginal. In addition, land fragmentation is fast becoming an increasing problem, particularly, in the smaller islands. These factors limit the extent to which land can be intensively cultivated. As such, the policies pursued for agricultural development need to carefully evaluate the trade offs between increased production and environmental degradation.

4.2.8 Role of the State

An issue that is often overlooked or at least not explicitly dealt with in strategies for agricultural development is that of the role of Government. To a large extent, previous experience in the Caribbean of the State's role in the sector, particularly in production and marketing aspects has not been positive. A key issue is related to provision of incentives and price controls. State intervention in both the input and output markets have often adversely affected the structure of incentives, thereby sending inappropriate signals to producers, consumers and investors in sector. In light of such experience, the public sector's role need to be re-examined and new policy options need to be developed.

Some of the alternatives that have to be explored include reducing the level of direct participation in production and distribution; rational use of large land areas already in the hands of Government; increased partnership with private sector in critical areas; intensification of its role in facilitating production and distribution through provision of infrastructure, and revision of obsolete legislation which adversely affect agricultural production.

4.3 Areas of Action

4.3.1 Caribbean-Latin American Trade and Cooperation

As discussed earlier, extra-regional trade of the CARICOM countries has been traditionally with Europe and North America and is negligible with Latin America. This, to some extent is due to lack of communication and transport. If the Latin American countries are considered as a whole, the range of climatic and other environmental conditions are such that almost all of the agricultural commodities produced in the Caribbean could be produced in Latin America, and at lower costs due to economies of scale and lower wage rates. However, it is highly likely that given the vast size of the Latin American market, and the relatively small volume produced particularly in the Caribbean island states, market niches may be found for Caribbean products in individual Latin American countries.

Further, the Caribbean countries have access to the USA market through the Caribbean Basin Initiative (CBI) and this offers opportunities for joint-venture investments in the Caribbean with Latin American countries. So that for example, certain raw materials for agro-industry may be supplied by Latin America for processing in the Caribbean, provided the CARICOM rules of origin can be successfully addressed 7/. In this regard however, it should be recognized that Central American countries also enjoy benefits under the Caribbean Basin Initiative (CBI). Of greater importance therefore may be the access of Caribbean countries to the Canadian market under CARIBCAN and the European Common Market under the LOME convention. Special consideration should be given to the planned integration of the Canadian and the US markets on one hand, and the European Economic Community (EEC) market on the other, and the implications these developments hold for the Caribbean. Other possibilities may be the supply of agricultural inputs such as machinery from Latin America to the Caribbean and the development of fertilizers for example, with Trinidad and Tobago, which produces nitrogenous fertilizer but does not have commercial deposits of phosphate.

But, it is in the field of technical cooperation that the most significant Latin America-Caribbean linkages are likely to be developed. IICA is pivotally positioned to foster the development of such links by drawing on its long experience and association with the Latin American institutions involved in research and development. Latin American institutions have made considerable progress in research and adaptation of technology in agriculture relative to Caribbean countries. Technical cooperation between the two regions in functional areas need to be further explored and strengthened. Further, IICA can be of considerable assistance in removing the language barrier and in facilitating the flow of information and

7/ It has been reported that Brazilian processed products currently enter certain Caribbean countries with a fair degree of regularity.

technical personnel in both directions, as indeed it has been doing since its presence and membership have developed in the Caribbean.

In the area of biotechnology particularly, which is likely to have significant impact on the agriculture of the Latin American and Caribbean countries in the future, IICA is well set to develop the linkages which are essential in this high cost field of research. The advances already made in Latin America in this field must be linked with the strong science base which has been established at the University of the West Indies over the last 40 years. Opportunities must also be provided for commercialization of research results, e.g. provision of inexpensive disease-free planting material for certain crops.

Further consideration must be given to collaboration in negotiations at the international level in trade e.g. General Agreement of Tariffs and Trade (GATT) and Commodity agreements (banana, cocoa, coffee, sugar, and new crops that may emerge in the future).

4.3.2 Some Issues in Agricultural Reactivation

4.3.2.1 Agro-industry

Perhaps of greatest significance in the linkage between agriculture and other sectors of the economy is agro-industry. Historically, the processing of raw material for export has only been to the minimal stage to ensure convenient and safe transport to metropolitan countries. For example, sugarcane plant was processed to the form of raw sugar, further refinement being carried out in the importing country, with the producer country frequently re-importing the refined product. Similarly in the case of cocoa, fermenting and drying of cocoa beans were carried out in the producing country whereas further processing and final use in the manufacture of chocolate products were carried out in the metropolitan country. Opportunities for further domestic processing of local products must be exploited in order to ensure greater benefits from the increased value added obtained in producing countries.

Conversely, where agro-industries for processing of food products have been established in the Caribbean these have been based largely on importation of raw material from the developed countries. So that the canning of carrots, peas or corn or the bottling of jams, has required the importation of the raw material and frequently of the container as well. The processing technology, which is also imported, is designed for handling the raw material in a form in which it has not traditionally been produced locally. Major issues on the local supply side therefore are quality and consistency of supply and the cost of the raw material relative to that of the imported product. Additional consideration should be given to an examination of the use-capacity of the existing processing plants in the region.

The development of local technology for the processing of indigenous food products is necessary to lessen dependence on imported foods. Thus, potato chips for the fast food industry might be replaced by

cassava or yam once the processing technology is available 8/. In some cases new technologies have been developed for the processing of local raw materials but commercialization has been a problem. Thus the instant yam developed at the Food Technology Department at the University of the West Indies in St. Augustine, Trinidad, is an excellent product but the single attempt by a public sector agency of commercial manufacture has failed.

Local food production is largely in the hands of small farmers who often obtain low yields resulting in high average production costs. These items have to compete with food imported from countries with large scale, highly mechanized production systems. In addition, these countries often subsidize their food exports to make them more competitive.

The issue of cheap food to the consumer (many of whom are urban dwellers) and reasonable returns to the farmer has to be resolved at the highest level of decision-making. Further, the low prices of food on the world market encourage importation even though this requires expenditure of foreign exchange. Rates of currency exchange, customs tariffs and subsidies, whether on local or imported food items, are central to these different issues.

New forms of food processing must be developed on a continuous basis for presentation of products to local and foreign markets. Thus pre-cooked foods in Caribbean styles as has recently been developed in Jamaica, will be important in penetrating new markets. These precooked meals are marketed in plastic bags which are ready for serving after the whole bag and its contents are heated by immersion in hot water.

4.3.2.2 Services

Supply of machinery, irrigation equipment, pesticides, fertilizers, repair and maintenance of machinery and other similar services tend to be more readily available in urban areas requiring the farmer to lose valuable time and to leave his farm for extended periods. The quality and timeliness of the services also leaves much to be desired. Availability of spare parts particularly when there is a shortage of foreign exchange has been a problem.

4.3.2.3 Chemical and Machinery Inputs

Currently, most chemical and machinery inputs are imported. These imports extend even to simple hand tools, many of which could be manufactured locally or regionally.

8/ Frozen cassava is currently available on the market in Trinidad and Tobago.

With respect to pesticides, the use of biological control measures, as part of an integrated pest management system, will reduce the dependence on imported chemical pesticides. Also, the development of pesticides from plants which can be grown locally will address both the environmental and the foreign exchange problems. Research is thus needed on integrated pest management (including biological control) and this can be achieved by reallocation of existing resources which are frequently used in traditional research (such as fertilizer trials) which will give only marginal increases in yield, where there is already background information on soil types and nutritional requirements of the crop plants.

Machinery manufacture suffers from the disadvantage of small market size and so this provides another area for development of Caribbean-Latin American Trade which has already started on a limited scale. Thus Brazilian made manual knapsack pesticide sprayers are available in Caribbean markets.

Plastic irrigation pipes are manufactured in the Caribbean but from imported raw materials even though the basic chemical feedstocks (sugar and petroleum products) are available locally.

4.3.2.4 Marketing

Markets, in terms of price and stability, provide the most important single factor in stimulating production. In the case of export commodities, markets have been developed largely by the private sector, with government support in price negotiations, whereas locally produced food is marketed either by small entrepreneurs or government supported marketing agencies. These agencies also promote regional trade and more recently trade to ethnic markets in the United Kingdom, the United States of America and Canada. These non-traditional export commodities are now also being marketed by private sector initiatives. In this latter case there is an important role for governments in ensuring quality and infrastructure such as transport where necessary. The role of the State in the marketing process needs to be clarified in order to bring some order into the system. The problems of marketing of agricultural commodities as a whole need to be addressed on a comprehensive basis at all levels from the highest level of policy making to operations at the farm level. Significant losses are experienced at the postharvest level. Reduction of such losses could go a far way in reducing the food problem.

4.3.2.5 Tourism

An important linkage which requires further development is with tourism. It has been suggested that some impediment to this may be associated with ownership of hotels and the development of the package tour system. Even if this is not of significance at present, such developments need to be closely monitored otherwise food for the tourist industry may be supplied from North America or elsewhere, thus considerably reducing the net foreign exchange earnings of tourism and reducing the stimulus to agricultural development. However, it should be observed that because the tourist or more appropriately the

hospitality sector is not given the same priority among member states, accord in this area may present some difficulties.

4.3.2.6 Technology Generation and Transfer

In the future technology must be based on a strong research and development system and extension services, that can identify appropriate and new technologies to assist farmers. This can provide producers with the competitive edge for both local and foreign markets. Such technologies should also be aimed at maximizing linkages to input supply, agro-industry and in production of suitable food for the tourist industry.

With respect to technology transfer systems, new technologies in communication (audio visual, use of satellites) will not only increase the impact of technologies, but also will allow available expertise to service a larger number of farmers. The extension system should provide for Subject Matter Specialists working out of the research and development sections, with the district extension officer being a Farm Management Specialist well trained in Agribusiness. It is this latter agent who must work with the farmer to ensure greater business orientation and enterprise profitability by making the best use of the resources of land, labor, technical skill and access to capital and credit. The various extension models being used in the agricultural sector need to be examined in terms of their sector-wide applications 9/.

4.3.2.7 Biotechnology and Information Systems

Developments in Biotechnology need to be closely monitored both in regard to possible negative impact and for potential benefit. Thus the possibility of producing coffee or cocoa flavour by plant cell culture in factories in developed countries could make cocoa and coffee growing redundant. Also, if artificially transferred genes become patentable, such that their presence in any crop variety makes such varieties also patentable then this could result in greater costs and continuing dependence on multinationals for seed supply. Further, environmental hazards exist if countries in Latin America and the Caribbean do not put into place legislation to control the release of genetically altered organisms.

The high cost of the research work emphasizes the need for greater collaboration between Caribbean and Latin American countries. The strong science base of the University of the West Indies enables it to

9/ A study "Monitoring and Evaluation of Investments in Agricultural Research" in the Department of Agricultural Economics and Farm Management, Faculty of Agriculture, University of the West Indies and IICA are investigating the role of input suppliers in the technology transfer process.

join in networks of Latin American institutions which have already launched programmes in biotechnology.

On the positive side the possible development of non-leguminous plants with the ability to fix atmospheric nitrogen could result in considerable savings in fertilizer use, while micro-propagation techniques may allow the rapid introduction of new varieties of vegetatively propagated plants. The application of such techniques could also lead to reduction in the cost of planting material for certain commodities. In the livestock industry, superovulation and embryo transplant techniques will allow the more rapid expansion of herd sizes, while maintaining quality. These techniques would also promote the exploitation of unique material, such as the buffalypso of Trinidad and Tobago and blackbelly sheep of Barbados. Increasing the animal population by conventional methods is costly and slow hence one reason for the dependence on foreign sources for meat and meat products. With regard to buffalo development, the milking of these animals for the production of mozzarella cheese for which there is a good market in the U.S.A., offers new export possibilities.

The resource base for the technology generation and transfer systems must include computerized data bases which can be accessed readily by the Caribbean countries. In this regard IICA and CAB International (formerly the Commonwealth Agricultural Bureaux) can be of particular assistance and these two institutions are themselves collaborating in information systems.

4.3.2.8 Traditional Technology

While the introduction of new and improved technology is essential, also of importance is the need to draw on the vast reservoir of experience and traditional technology generated and acquired by farmers over the years. Thus, the study of existing farming systems is a pre-requisite to the introduction of new technologies.

4.3.2.9 Research and Development

Substantial investments have been made particularly by the public sector in the technological aspects of agricultural research. Frequently the research organizations have given low priority to socio-economic research and this must be corrected by giving greater emphasis on the behavioural aspects of small farmers. These investigations are critical to development of incentive programmes for the sector. Also, in spite of extensive research, agricultural production and productivity has fallen in many instances (cocoa, coffee, sugarcane). Thus the need to evaluate the impact of research is essential. Further, the need for additional resources to be put into new areas of research, particularly biotechnology, cannot be over-emphasized.

4.3.2.10 Land Utilization

An important aspect of land utilization is the development of agro-forestry. In this regard there can be linkages to food production, whereby land clearing is carried out by small farmers, who then tend the forest trees which they interplant with food crops until they move to a new area. Thus a systematic shifting cultivation system for food production is set up along with the establishment of commercial forests which can be an important raw material for the manufacture of furniture for export.

Two other aspects of land utilization will have to be considered and these are:

- i. unused or under-utilized land both state and privately owned, and
- ii. proper land use and the protection of the ecological balance and environment.

With respect to privately owned land, special taxation regimes may have to be devised in order to encourage improved use or to reduce the price of land on sale, so that potential but landless farmers and entrepreneurs may acquire land at a reasonable cost for agricultural purposes.

Environmental protection must be given special attention as land use intensifies. Environmental protection efforts should include soil conservation and antipollution measures, and maintenance of the ecological balance.

4.3.2.11 Irrigation and Drainage

In order to extend the growing season, particularly when diversification is taking place away from and around sugarcane and tree crops to annual crops it is essential that the infrastructure for irrigation be put in place. This will require provision of a water supply during the dry months of the year in most countries and developing a year-round supply in the drier countries such as Barbados and Antigua and Barbuda.

On heavy clay soils new drainage systems need to be developed if cultivation during the rainy season is to be carried out. Such infrastructure for drainage, particularly in the wetter areas, was not considered essential to the cultivation of sugarcane and tree crops since land preparation was concentrated in the dry season. In the case of irrigation, in the dry season, these crops are at ripening stage and so in many situations do not require irrigation.

4.3.2.12 The Farmer

Most of the planning for agricultural development in the past has been concerned with project or programme formulation and less with the main entity in the system, namely the farmer. There are many examples of farmers being successful in the region. Such examples indicate that farmers have rapidly adopted new technologies and expanded production of particular commodities, especially when these are complemented with

stable market conditions and an acceptable price. Motivation of farmers through attitudinal changes and increased confidence is critical to the agricultural reactivation process.

Substantial improvement in the educational level of farmers represents an area of critical importance. Although several technical schools have been developed and a University Agricultural Faculty of high standard exists, very few of these graduates ever become "farmers". It is important that this trend be reversed so that there be an inflow of skilled people into farming. Many of the services now provided by Government could be developed by farmers themselves, if they had the appropriate educational background and entrepreneurial orientation. For example, much of the development in the ornamental industry including the marketing, is taking place without direct Government assistance; this appears to be very much a function of the educational background of the entrepreneurs entering the industry.

With relevant training and motivation, the farmer of the future for example, may be capable of introducing integrated pest management activities including biological control into his production system so as to meet market requirements e.g. reduced levels of pesticide residue in fruits and vegetables.

Given the aging population of Caribbean farmers this would seem to be an appropriate period for a major thrust in developing the farming population to a more highly trained group. In this regard the importance of farm and agribusiness management in both the formal and informal educational systems for the farmers must be emphasized.

Finally, the strengthening of farmers organizations is also critical if farmers as a group are to be successful. A strong farmers' organization can be an effective vehicle for providing services to the farming community, as well as a forum for articulating their needs and support.

4.3.3 Institutional Aspects

Institutional involvement will need to be assessed in some detail at two levels. First at the level of the individual institutions in a system of networking. The institutions thus to be considered are national (Ministries of Agriculture, Research and Development institutions, Farmers Organizations); regional (University, Caribbean Research and Development Institute); and international (Aid Agencies). A network system of coordination needs to be developed between these institutions at national level and similar institutions at regional level. There already exists examples of successful cooperative programme models in Latin America (PROCISUR and PROCIANDINO) and these experiences can inform proposed developments in the Caribbean. In the areas of animal health and plant protection, there have already been effective collaborative programmes in Latin America and the Caribbean and these must be expanded.

Many of the institutions referred to above are seriously understaffed and lack adequate infrastructure. Even those that have adequate

manpower, lack training and experience at levels required to effectively plan for and manage sector activities. Serious consideration needs to be given to the strengthening of these institutions to correct this situation.

SECTION V

THE ACTION PLAN AND ITS IMPLEMENTATION STRATEGY

5.1 Introduction

The Caribbean component of the strategic plan currently being developed by the Inter-American Institute for Cooperation on Agriculture (IICA) for the modernization and revitalization of agriculture in Latin America and the Caribbean has been developed on the basis of a detailed analysis (of the needs) of the agricultural sector of the region. The analysis has produced a comprehensive inventory of strengths, weaknesses, constraints, and actions required for addressing the key problems facing the sector. The most important of these have been presented previously in sections III and IV.

The scope of the proposed activities has been limited to a subset of priority actions which can feasibly be implemented by IICA given its available human and financial resources. The Strategic Action Plan takes as its point of departure the Caribbean Community Programme for Agricultural Development and the OECS Agricultural Diversification Programme and therefore must be seen as complementary to provisions contained therein. The three Plans (CARICOM, OECS and IICA) together form the basis of an overall Caribbean strategy for the modernization and reactivation of the agricultural sector through the 1990's and beyond. A summary of the projects by programme area under this overall Caribbean Plan is presented in Appendix 1.

5.2 IICA's Plan of Action for the Caribbean Region

5.2.1 Nature of the Plan

IICA's strategic Plan of Action for the reactivation of agriculture in the Caribbean region may be defined as a compendium of priority projects as well as a framework for their implementation. The activities will be undertaken on a joint basis in support of both sub-regional (OECS) and regional (CARICOM) plans and programmes, and are therefore complementary to both initiatives. The Plan should not then be perceived as one which would, by itself, solve the agricultural development problems of the region, but one which seeks to rationalize and maximize its contribution to regional development efforts. In order to provide this additional dimension to national, subregional and regional plans and programmes IICA will base its Strategic Action Plan on the following:

- a. strengthening of linkages between Latin America and the Caribbean, specifically in the areas of marketing opportunities, sourcing supply of inputs and capital for investment activities, and technology development and transfer;
- b. exploiting opportunities with respect to the agricultural sector through the development and fuller utilization of regional trade and production integration mechanisms of the Caribbean community;

- c. strengthening of national and regional institutions and institutional arrangements for the provision of support services to both the public and private sector in strategic areas such as policy analysis, planning and management, technology generation and/or acquisition and transfer, investment and investment incentive policy, joint marketing, animal health and plant disease
- d. strengthening farmers organizations to improve agricultural production and marketing; and motivating and promoting the participation of youth in agricultural transformation and rural development in the Caribbean.
- e. upgrading the region's institutional capability for the development, production and marketing of non-traditional crops such as fruits, food crops and vegetables;

The Latin American/Caribbean linkages proposed may be achieved through the development of joint ventures, technical cooperation networks or through direct technical assistance programmes. In this regards IICA's presence in member states perhaps represents the first strategic step in the implementation process. Further this organization has already signed collaborative agreements with several regional agencies e.g. The University of the West Indies, CARDI, and the CARICOM Secretariat. It should be emphasized, however, that these agreements only provide the general framework for operationalization of projects. Strategies will have to be developed to bring the action plan closer to reality by interacting with planners, producers, traders and consumers, if the revitalization process is to succeed. This interaction, must recognize that, because of the heterogeneous nature of the region's agricultural sector, a broad strategy cannot be applied to programme of activities in Jamaica, for example, in very much the same way as in the Leeward Islands or the Windward Islands. Further, the fact that the Windward Islands have cooperated in the production, and to a lesser extent, marketing of bananas, the success achieved in this approach does not imply that Leeward island farmers producing vegetables can be so organized. The important consideration is to identify common constraints and opportunities and to develop strategies that can respectively, remove and exploit them on a joint basis.

5.2.2 Projects

5.2.2.1 Project Identification

The fourteen (14) projects proposed for action by IICA and described below were selected on the basis of the expected high impact they would, individually and collectively have on the Caribbean community as a whole. Some of the projects have been identified within the CARICOM's Regional Agricultural Sector Plan and the OECS Diversification Programme, while others were developed by IICA based on identified and expressed needs of the farming community in the region. This latter group of projects is considered complementary to CARICOM and OECS initiatives.

IICA is expected to play a supportive role with respect to the projects identified under the CARICOM and OECS initiatives. For some of these projects CARICOM has requested that IICA play the leading role in their implementation, while for others, the Community has requested that IICA play a minor role in concert with other national, regional and international agencies in their implementation.

Projects are therefore categorized and presented as supportive (major, minor) and complementary according to the role that IICA will play in the implementation process within the proposed reactivation plan.

5.2.2.2 Supportive Projects

5.2.2.2.1 Projects to receive major support from IICA

a. Policy Analysis, Planning and Management in Support of Agricultural Development

This project encompasses two areas identified in the RASP and in the present plan. They are treated under two separate sub-projects which are presented below.

a.1 Evaluation of the Impact of Macro-Economic Policies in Support of Decision-making in the Agricultural Sector

Objective: To evaluate the impact of macro-economic policies on the performance of the agricultural sector.

Outputs: a) An evaluation of the role of agriculture within a given macro-economic framework;
b) An assessment of the impact of selected macro-economic policy measures on agriculture; c) A comprehensive set of policy recommendations as the basis of an incentive structure to enhance agriculture's role in the economy over the medium and long term; d) A series of publications with findings and recommendations as a basis for future actions; e) A group of technicians trained in policy analysis.

a.2 Strengthening Agricultural Planning and Management Systems in the Caribbean

Objectives: To improve the advisory capacity of Agricultural Planning Systems in the Administration and Management of the Agricultural Development Process.

Outputs: a. A group of technicians from the Agricultural Planning Units (APU's) trained in programming and monitoring systems.

- b. Information systems for decision making developed and operating.
- c. Specific manuals and procedures for better administration and management.
- d. Annual programming and monitoring systems operational in selected countries.

b. Supporting the Development of Tropical Fruit Crops

Objectives: To upgrade institutional capability for the development, production and marketing of fruits in the Caribbean region.

Outputs: a. Adequate nursery infrastructure and equipment established to guarantee an efficient propagation process.

- b. A common regional germplasm bank of outstanding tropical fruits species and cultivars established and maintained.
- c. Efficient and low cost system for distributing planting material from the regional germplasm bank established.
- d. Managerial capacity of nursery and germplasm bank developed.
- e. Technology in support of fruit production generated and transferred in the Caribbean.
- f. Strengthened technical capability in post harvest handling and marketing of fruits.
- g. Grades and standards for selected fruit commodities developed and a Caribbean code system developed and in use.
- h. Existing priority fruit crop orchards rehabilitated and improved.

c. Institutional Support for the Establishment and Operation of the Caribbean Co-operative Agricultural Research Network

The Standing Committee of Ministers responsible for Agriculture (SCMA) has approved the project for the establishment and management of a Cooperative Agricultural Research Network. The Caribbean Agricultural and Research Development Institute (CARDI) has been designated as the implementing agency with support from IICA.

d. Survey and Monitoring of Animal and Plant Diseases and Pests to Facilitate Increased Production Efficiency

Objective: To strengthen national and regional capability to monitor and assess the economic impact of diseases and pests which restrict agricultural trade and/or production in the Caribbean.

Outputs: a. A 14 country animal and plant health information network will feature:

- quarterly updates on the occurrence of selected diseases/pests of trade concern
- quarterly newsletter
- annual workshops
- selected survey and production impact studies on priority topics as regional models and training case studies.

b. Personnel from 14 countries trained in:

- use of microcomputers
- animal and plant disease reporting procedures
- epidemiology

c. A center of expertise established to support the network from one of the regional organizations (CARDI, UWI) based in Trinidad and Tobago.

d. Information on selected diseases or pests in the region as a basis for decisions on:

- import and export of agricultural animals, plants and their products.
- what, if any, prevention, treatment, control or eradication measures should be taken.

e. Personnel from selected countries trained in one or more of the following supportive activities:

- slaughter house inspection and disease surveillance
- management of laboratory and equipment (procurement, use and maintenance)
- laboratory diagnosis of animal disease

5.2.2.2.2 Projects to receive minor support from IICA

a. Supporting the Development of Food and Vegetable Crops

Objective: To assist with the technological development of food and vegetable crops and improved production/marketing in the Caribbean.

- Outputs:**
- a. Production and utilization of improved planting materials.
 - b. Strengthening technical capability for food and vegetable crop production/marketing.
 - c. Financial and technical external support to food and vegetable crop production/marketing.

b. Development of the Institutional Framework for the Production and Marketing of High Quality Planting Material

Objective: To increase the institutional ability for developing a sustainable seed industry in the Caribbean.

- Outputs:**
- a. Regional capacity for producing and utilizing planting materials of priority crops appraised.
 - b. Upgraded institutional capability to support seed industry development.
 - c. Investment projects for seed technology development identified, formulated and implemented.

c. Support to the Development of the Livestock Sub-sector

Objective: To develop the production and marketing capabilities of the livestock sub-sector in Caribbean countries.

- Outputs:**
- a. Improved data base on production and marketing of livestock in the region.
 - Validated demonstration units showing biological and economic management systems.
 - Technological packages developed for economic livestock production and marketing.
 - b. Plans of action for the development of the livestock sub-sector considering:
 - Supply of feed and other farms inputs
 - Materials and equipment for improved production
 - Facilities for slaughter, processing, storage and marketing of livestock and livestock products.
 - Livestock credit support programme.

- Policy recommendations for methods of effective control of praedial larceny.
 - Recommendations for health and sanitation control.
 - Clearly defined strategy for financing and implementation of national plans of action.
- c. Effective mechanism established for networking between regional projects dealing with:
- Animal health information and monitoring
 - Improved genetic material
 - Training at different levels
 - Demonstration models of livestock production
 - Improved pastures and grasses
 - Improved animal nutrition, and
 - Laboratory diagnostic facilities

d. Strengthening of National Animal and Plant Quarantine Capability

Objective: To strengthen national and regional institutional structures for the delivery of animal health and plant protection services to the agricultural sector in the Caribbean.

- Outputs:**
- a. Personnel trained in the techniques of plant quarantine.
 - b. Personnel trained in the management of animal and plant quarantine systems.
 - c. Updated plant and animal quarantine legislation.
 - d. Harmonization of animal and plant quarantine legislation.
 - e. Improved infrastructure and facilities for plant and animal inspection and quarantine.
 - f. Improved methods of screening plant material and animal products prior to entry into the region.
 - g. Establishment of public awareness programmes on animal and plant quarantine.
 - h. Establishment of a regional Plant and Animal Quarantine Advisory Council.

- i. Establishment of the Emergency Response Task Force or capability.
- j. Establishment of a Regional Diagnostic Laboratory for Plant Pests and Diseases.

5.2.2.3 Complementary Projects

a. **Facilitating the Transfer of Technology for Agricultural Development**

Objective: To support the development of the agricultural sector of the Caribbean countries while strengthening the regional integration process by facilitating reciprocal technical cooperation within the Caribbean region and between Latin America and the Caribbean.

- Outputs:**
- a. A computerized inventory of institutions and expertise from interested Latin American countries that are potentially beneficial to the region.
 - b. Appropriate technology transferred in support of at least three carefully identified regional or subregional projects.
 - c. Personnel trained in appropriate technology in Latin American countries, particularly in regard to the project areas identified.
 - d. Enhanced Latin American - Caribbean linkages

b. **Support to the Design of Rural Development Strategies**

Objective: Improvement of the quality of life in rural communities in the Caribbean by supporting regional and national efforts in the formulation and implementation of rural development strategies.

- Outputs:**
- a. National capacity for formulating rural development strategies will be improved.
 - Information base containing socio-economic parameters established to facilitate rural development planning and policy decisions at the national level.
 - Inventory and characterization of institutional and human resource base available.
 - Mechanism established for formulation of rural development policy and plans of action.
 - b. National plans of action identified and formulated

- c. Sustained mechanism to effectively coordinate regional rural development efforts and support regional networking in place.

c. Support to the Development of Communications System

Objective: To support the major thrust in regional agricultural development by the utilization of the mass media (i) in the deepening of public awareness of the urgent need and demand for food security for the Caribbean region; and (ii) as an instructional medium aimed at providing information and knowledge on improved technologies and alternative organizational strategies that will benefit farmers.

- Outputs:**
- a. Technical and managerial capabilities of communication units of Ministries of Agriculture and other relevant media houses strengthened.
 - b. Relevant media messages for radio, television and bill board with regards to the enhancements of food security in the region designed and produced.
 - c. A series of video programmes on (i) group dynamics applicable to farmers situation in the Caribbean, and (ii) production and marketing issues related to the major thrusts identified for high priced crops, designed and produced.
 - d. Seminars and workshops for farmer groups at national and sub-regional levels utilizing various media and video recording of actual workshop participation, organized and conducted.

d. Strengthening Farmers Organizations to Improve Agricultural Production and Marketing

Objective: To improve the quality of life in rural communities of the Caribbean by developing effective production and marketing support services channeled through farmers organizations.

- Outputs:**
- a. Information base on farmer organizations for effective decision making.
 - Baseline documents showing existing situation, positive and negative experiences in production and marketing, priority needs and available resources.
 - Documentation of resources available from national, regional, bilateral, international and other organizations interested in the development of farmers organizations.

- Documentation of government positions, policies and institutional structure relevant to the strengthening of farmers organizations in each country.
- b. National action plans designed and approved by farmers organizations, addressing the following areas:
- Development of the managerial abilities to supply effective production and marketing services.
 - Establishment of the relevant systems to provide the necessary information for effective production and marketing decision making.
 - Development of efficient channels of communication between farmer organizations and their members.
 - Development of necessary infrastructure for satisfactory production and marketing of selected commodities.
 - Supply of timely and efficient support services such as input supply, technical assistance, credit and marketing.
 - Clearly defined strategy for the financing and implementation of national plans of action.
- c. National, sub-regional and regional networks for farmer organizations.
- Networks established with steering committee made up of representatives of farmers organizations.
 - Active participation of farmers in the design and execution of actions, projects and programmes to strengthen farmers organization for production and marketing activities.
 - Mechanisms established to facilitate inter-institutional integration of development activities to strengthen farmers organizations.
 - Established means of communication, newspaper and radio programmes.
 - Coordinated efforts between farmers organizations in the use of available technical assistance, training opportunities, input supply, facilitating access to credit, joint marketing, identification of sources of funding, and other developmental activities.

e. To Promote the Involvement of Youth in the Agricultural and Rural Development Process

Objective: To motivate and promote the participation of youth in agricultural transformation and rural development in the Caribbean, in order to create youth employment, and to achieve progressive improvements in the standard of living in urban and rural areas.

- Outputs:**
- a. Youth from the countries trained in: Leadership qualities, Agri-business management, and Technical areas of agriculture and agri-business
 - b. Supportive systems created to provide the necessary incentives, economic opportunities, and access to needed resources and input to enable young farmers to expand their output and raise their productivities.
 - c. Youth population sensitized to the possibilities and opportunities within the agricultural sector and thus a pro-agriculture bias fostered.
 - d. Revolving National Youth Development Fund established in each country to provide needed venture capital for youth development activities
 - e. Institutional mechanism established to attract and nurture young entrepreneurs in small business ventures.

5.2.3 Implementation Strategy

5.2.3.1 Introduction

As indicated above, IICA's Strategic Plan of Action is just one component of the overall Caribbean Plan of Action for the modernization and reactivation of agriculture in the region, and as such the implementation strategy developed herein is an integral part of a fairly complex regional implementation network.

The major consideration in devising the implementation strategy has been the need to bring about a fuller utilization of the existing capabilities within the existing regional institutional infrastructure through the rationalization of activities and allocation of responsibilities. In addition, the need to stimulate a higher degree of cooperation at the operational level has been recognized as one of the key imperatives of the overall Caribbean Strategic Plan of Action -hence the need for the creation of stronger linkages between regional institutions and national agricultural agencies.

5.2.3.2 Policy Making

The institutional arrangements provide for the effective translation of key policy decisions into action, and for the feedback of crucial information from the operation level to the policy level. At the

regional and hemispheric levels the projects and proposals will be supported by the General Directorate of IICA in San Jose and the network of Offices in the various countries of the hemisphere. These initiatives will be subjected to analysis and review in the various bodies of the Institute, particularly the meetings of the Executive Committee and the Inter-American Board of Agriculture. In addition, policy making and review imply a focus on regional bodies such as (i) the Standing Committee of Ministers responsible for Agriculture (SCMA); (ii) the Common Market Council (CMC); and (iii) the Conference of Heads of Government (CGH).

5.2.3.3 Coordination and Implementation

The Directorate of Operations - Caribbean Area will be delegated the responsibility of ensuring the expeditious implementation of IICA's Strategic Plan of Action in the region. It is this unit, supported by the IICA's projects unit in the Caribbean Area, and the five IICA Programmes, which will be assigned the major functions of coordination and implementation along with the appropriate implementation mechanisms (e.g. technical cooperation networks, regional services, etc.) of the Plan of Action.

For effective coordination of all activities under the overall Caribbean Action Plan, IICA will interface with the other strategic initiatives through the proposed Regional Agricultural Coordinating Committee (RACC). Such a Committee would be composed of the following bodies and/or representations -as has already been stated by the SCMA-:

- a. A Ministerial Sub-Committee of the SCMA;
- b. Heads of regional agencies which have been allocated responsibilities for implementing the overall Caribbean Action Plan projects;
- c. The OECS Secretariat;
- d. the Caribbean Association of Industry and Commerce (CAIC) whose Agro-industry Task Force is expected to play a key role in promoting linkages between primary production and agro-industry;
- e. the Inter-American Institute for Cooperation on Agriculture (IICA) and the Food and Agriculture Organization (FAO) of the United Nations, both of which will be requested to provide technical support to a wide range of Action Plan projects; and
- f. donors and other relevant agencies and individuals providing technical and financial inputs to the Action Plan projects, and who will be invited to meetings of the RACC, where necessary.

Meetings of the RACC would be chaired by the Ministerial Sub-Committee Chairman, and the CARICOM Secretariat would be responsible for convening and servicing the meetings.

The major functions of the RACC would be to:

- a. oversee the execution of the Overall Caribbean Action Plan;
- b. promote the integration of the various Caribbean initiatives and activities into the work programmes and budgets of national and regional agencies; and
- c. facilitate the mobilization of financial and technical assistance for specific projects identified under the overall Caribbean Action Plan.

At the regional level, through a series of ongoing and established agreements, IICA will be able to participate and promote these projects and programmes in concert with Regional Institutions. These include the CARICOM Secretariat with whom IICA has a Memorandum of Understanding and where IICA participates in meetings of the Standing Committee of Ministers of Agriculture (SCMA), the Caribbean Agricultural Research Institute (CARDI) with whom IICA has recently finalized an agreement to provide core financing, and participate in meetings of the Board and with the University of the West Indies, Faculty of Agriculture with whom IICA has signed a Memorandum of Understanding in 1986. In addition, the National Office in St. Lucia has been working very closely with the OECS Secretariat in the development of the OECS diversification plan.

At the National level, the IICA national offices will work closely with Ministries of Agriculture and other national institutions and project teams will be formed where necessary to implement the proposed actions.

APPENDIX - Table 1
 SUMMARY OF PROJECTS BY PROGRAMME AREA UNDER THE CARIBBEAN PLAN
 OF ACTION TO REACTIVATE AGRICULTURE IN THE REGION

PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
A. POLICY REVIEW AND ADJUSTMENT PROGRAMME						
1. Macro-Economic Policies						
- Evaluation of the Macro-economic and Major Policies on the the Agricultural Sector.	Profile	Regional Service	IICA	Jan. 1989	Dec. 1991	CARICOM RASP
2. National Policy						
- Agricultural zoning	Concept	OECS	OECS	Jan. 1990		OECS
B. COMMODITY PROGRAMMES AND PROJECTS						
1. Bananas						
- Production and Distribution of Improved Genetic Material for Bananas and Plantains	Concept	Technical Cooperation Network	CCS	1989		
- Moko Disease Control	Pipeline	Regional Service	MINAGRI (Grenada)	Aug. 1988		
- Development of the Regional Market for Bananas	Concept	Regional Service	CFC/CAICO			CARICOM RASP
- Promotion of Banana Sales in Non-traditional Extraregional Markets	Concept	Regional Service	CCS			CARICOM RASP
2. Sugar						
- Increased Intraregional Trade in Sugar	Pipeline	Regional Service	CCS/SAC	Jan. 1989	Sept 1989	CARICOM RASP
- Development of New Alternative Products and By-Products from Sugar Cane and Rum	Concept	Technical Cooperation Network	CCS/Sugar Bodies	Jan. 1989	Dec. 1989	CARICOM RASP

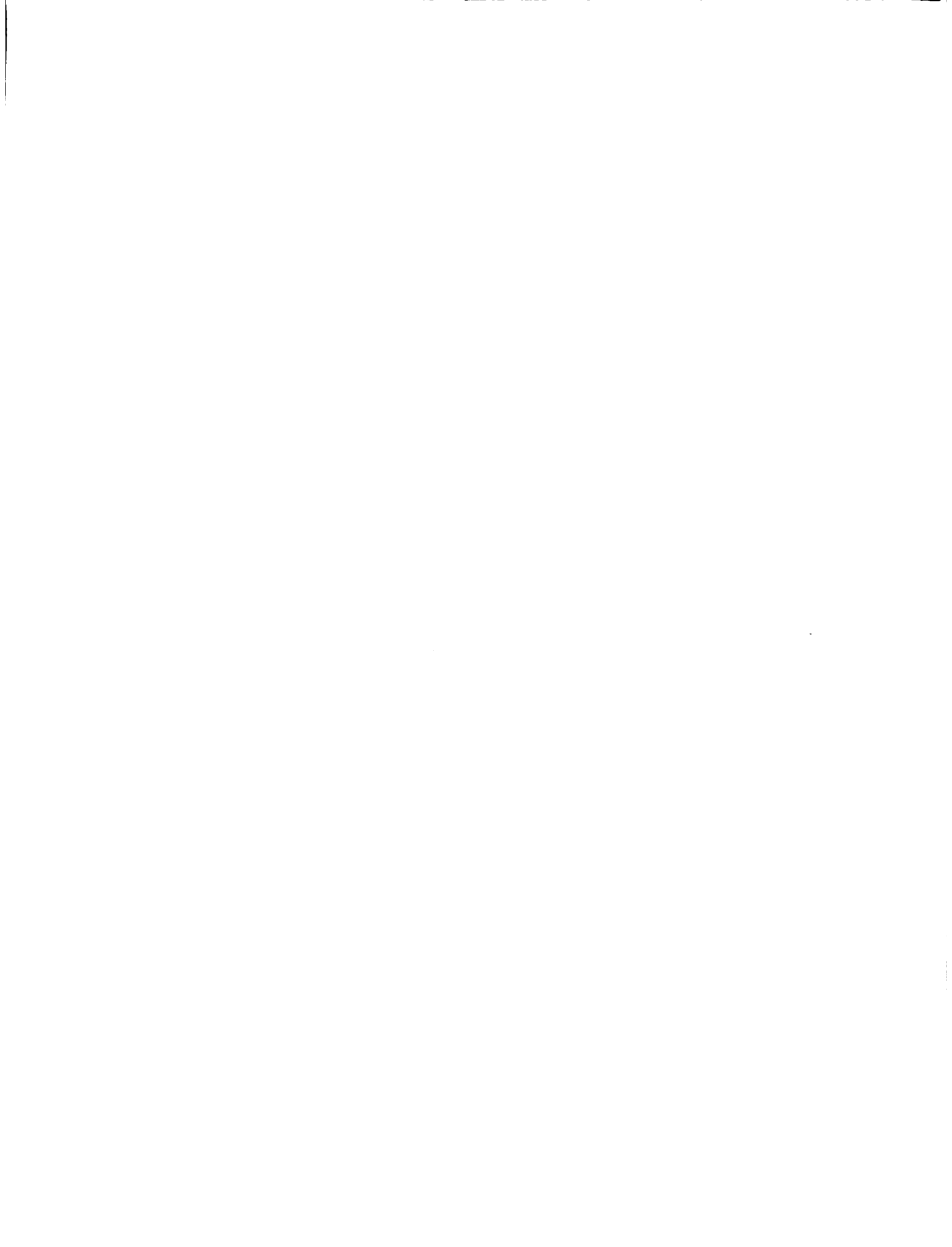
PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
3. Spices						
- Spice Development and Expansion	Concept	Regional Service	CCS	Jun. 1989	Dec. 1989	CARICOM RASP
4. Sea-Island Cotton						
5. Cereals						
- Integrated Production Processing and Marketing of Rice	Concept	Production Market Integration	CPC	Oct. 1988	Dec. 1988	CARICOM RASP
- Integrated Production Processing and Marketing of Corn	Concept	Tech. Coop. Network/ Production Market Integration	CCS/IICA/CPC	Jun. 1989	Dec. 1989	CARICOM RASP
6. Supporting the development of Tropical Fruit Crops						
6. Supporting the development of Tropical Fruit Crops	Profile	Regional Service	IICA	Ongoing	Dec. 1992	CARICOM RASP/OECS IICA
7. Support to the Development of Food and Vegetable Crops in the Caribbean						
7. Support to the Development of Food and Vegetable Crops in the Caribbean	Concept	Regional Service	IICA/CARDI	Jan. 1990	Dec. 1993	CARICOM RASP/OECS
8. Livestock						
- Production and Distribution of High Quality Breeding Stock for Cattle, Sheep and Goats.	Concept	Regional Service	CCS/CARDI	1989	1991	CARICOM RASP
- Improvement and Maintenance of Nutritional Status of Livestock and Reduction in Cost of Animal Feed	Concept	Technical Cooperation Network	CARDI	Mar. 1989	1994	
- Regional Animal Health Information and Monitoring System	Pipeline	Regional Service	IICA	First half 1989		
- Expansion of the Regional Education Programme for Animal Health Assistants (REPAHA)	Pipeline	Regional Service	CCS	Jan. 1989		
- Regional Amblyomma Tick Eradication Programme	Pipeline	Regional Service	CCS IICA/FAO	To be determined		CARICOM RASP

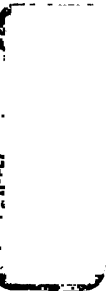
PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
- Integrated Regional Production and Marketing of Beef	Concept	Production Market Integration	CFC	Sept. 1988		
- Improving Livestock Production and Marketing in the Caribbean	Concept	Regional Service	IICA	Jan. 1990	Dec. 1992	CARICOM RASP/IICA
9. Fisheries						
- CARICOM Living Marine Resource Survey	Approved	Regional Service	CCS/OECS	Aug. 1989	Dec. 1994	
- Access to Territorial Seas and Exclusive Economic Zones (EEZs)	Approved	Regional Service	CCS/OECS	Aug. 1988	Jul. 1989	
- Exploratory/Experimental Fishing	Concept	Regional Service	CCS/OECS/FAO	To be determined		CARICOM RASP
- Establishment of a Caribbean Regional Aquaculture Development Centre	Concept	Regional Service	UWI/UG	Oct. 1989	Oct. 1992	
10. Forestry						
- Forestry Training Programme	Concept	Regional Service	CCS/FAO	Jun/Jul 1989	Jun/Jul 1994	
- Preparation of Forest Land Utilization Manual	Concept	Regional Service	FAO/CCS	Jun. 1989	Dec. 1991	
C. SUPPORT PROGRAMMES AND PROJECTS						
1. Finance						
- Resource Mobilization in Support of the Regional Action Plan	Concept	Regional Service	CCS/OECS	Nov. 1988		CARICOM RASP
- Credit for Production and Export	Concept	OECS	OECS	Jan. 1990		OECS

PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
2. Planning and Administration						
- Upgrading of Skills of Planners and Project Managers for the Agricultural Sector	Concept	Regional Service	CCS/OECS	Oct. 1988	Sept. 1989	CARICOM RASP/OECS
- Strengthening Institutional Capabilities in Policy Analysis, Planning and Management for Agricultural Development	Profile	Regional Service	IICA	Jun. 1989	Jun. 1992	CARICOM RASP/IICA
- Strengthening the Commercial Capabilities of Embassies/ Consulates in Major Importing Countries	Project Concept	OECS	OECS	Jan. 1990		OECS
3. Legal Framework						
- Review of Legislation and Legal Issues Affecting Agriculture	Concept	Regional Service	CCS/UWI/UG	1989	1991	
4. Quarantine and Surveillance Systems						
- Strengthening of National Plant and Animal Quarantine Systems	Profile	Regional Service	IICA	Jan. 1989		IICA
5. Marketing						
- Bulk Procurement and Distribution of Inputs for Primary Production and Processing	Concept	Regional Service	CFC/CAICO	Apr. 1989	Dec. 1989	CARICOM RASP/OECS
- Post-Harvest Technology Transfer	Approved	Technical Cooperation Network	CARDI/UWI	Oct. 1988	Jun. 1989	CARICOM RASP
- Caribbean Agricultural Marketing Information System (CAMIS)	Approved	Regional Service	CCS	Apr. 1989		CARICOM RASP/OECS
- Market Development	Concept	OECS	OECS	Jan. 1990		OECS
- Identification of Non-Tariff Barriers to Intraregional Trade in Agricultural Commodities	Pipeline	Regional Service	CCS	Dec. 1988	Oct. 1989	

PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
6. Nutrition						
- Promotion of Increased Utilization of Caribbean Foods	Pipeline	Regional Service	CCS/CPNI	Oct. 1988	Jun. 1989	CARICOM RASP
7. Agro Industry						
- Strengthening of Linkages Between Primary Production and Processing Industries	Pipeline	Regional Service	CAIC/CCS	Dec. 1988	Jun. 1990	
- Agro Product Development Programme for Traditional Export and Domestic Food Crops	Pipeline	Regional Service/ Tech. Coop. Network	CCS/IICA	Oct. 1988	Dec. 1988	CARICOM RASP
8. Technology Generation and Transfer						
- Production and Distribution of Vegetative Planting Material	Concept	Tech. Coop. Network	CARDI/UWI/CPC	1989		CARICOM RASP
- Developing the Institutional Framework for the Production/Marketing of High Quality Planting Material	Concept	Regional Service	IICA	Jan. 1991	Dec. 1994	IICA
- Strengthening of Audio-Visual Training Capabilities	Concept	Regional Service	UWI/CAEP/PAO	Jun. 1989	Oct. 1989	CARICOM RASP
- Agricultural Research, Extension and Development Project (AREDD)	Pipeline	Regional Service	UWI/CARDI	Apr. 1989	Apr. 1994	
- Caribbean Agricultural Technology Information System (CATIS)	Approved	Regional Service	CARDI	Dec. 1988		
- Facilitating Latin America/Caribbean Linkages and the Transfer of Technology for Agricultural Development	Profile in Development Stage	Hemispheric	IICA	Jan. 1990	Dec. 1993	IICA
- Institutional Support for the Establishment and Operation of the Caribbean Cooperation Agricultural Research Network	Profile	Regional Service	IICA/CARDI	Jan. 1989	1992	CARICOM RASP/IICA
9. Plant Health Services						
- Plant Health Information and Monitoring System	Ongoing	Regional Service	IICA	Sept. 1988	Dec. 1992	CARICOM RASP/IICA

PROGRAMME AREA AND PROJECT TITLE	STATUS	IMPLEMENTATION MECHANISM	IMPLEMENTING AGENCY	START-UP DATE	TERMINATION DATE	ORIGIN OF PROJECT
D. HUMAN RESOURCE DEVELOPMENT						
1. Survey of Agricultural Training Needs and the Development of an Accreditation System for Tertiary Institutions	Ongoing	Regional Service	CCS/UWI	Oct. 1986	Dec. 1988	CARICOM RASP
2. Strengthening Farmers' Organizations to Improve Agricultural Production and Marketing	Ongoing	Regional Service	IICA		Dec. 1993	SECS/IICA
E. COMMUNICATIONS						
- Support to the Development of Communications Systems	Concept	Regional Service	IICA/UWI/ Radio Netherland	Jan. 1990	Dec. 1993	IICA
F. RURAL DEVELOPMENT						
1. Support to the Design of Rural Development Strategies	Concept	Regional Service	IICA	Jan. 1990	Dec. 1993	IICA
2. To Promote the Involvement of Youth in Agricultural Transformation and Rural Development	Profile	Regional Service	IICA	Jan. 1990	Dec. 1994	IICA





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