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A PROFILE OF

CARIBBEAN AGRICULTURE

IN THE 1990s

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Preface

*For the Caribbean Region, while much information on the general economy and the agricultural sector exists in one form or another, it is usually spread over a range of national, regional and other international publications and databases. In some cases these documents are of limited circulation and the databases not always accessible. Therefore obtaining information on the agricultural sector of many Caribbean countries becomes a difficult and often, arduous task. The availability of a document which provides baseline comparative information on the characteristics and performance indicators of agriculture in Latin America and the Caribbean is critical for the region. This publication, entitled "**A Profile of Caribbean Agriculture in the 1990s**", is intended to document critical existing information on the agricultural sector in the region.*

Country-specific information was facilitated by the IICA Technical Cooperation Agencies (TCA) in the countries. This was complemented with information obtained from publications of regional and international organisations. These include the Eastern Caribbean Central Bank (ECCB), the Economic Affairs Secretariat of the Organsiation of Eastern Caribbean States (OECS/EAS), the CARICOM Secretariat (CARISEC), the Caribbean Development Bank (CDB), the World Bank, International Monetary Funds, Food and Agriculture Organisation (FAO), the Inter-American Development Bank (IDB), the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the Economic Intelligence Unit (EIU), the United States Department of Agriculture (USDA) as well as relevant information published in economic magazines.

This report was prepared by Diana E. Francis and edited by Dr. Patrick A. Antoine. Special acknowledgment must be made regarding the full commitment and support of the IICA Director General, Dr. Carlos Aquino and the Caribbean Regional Director, Dr. H. Arlington Chesney towards this effort. The assistance of Mr. Michael Henry in the preparation of national reports and the useful comments of Mr. Irwin Titus on the first draft are appreciated.

Acronyms

ACP	African Caribbean and Pacific States of the British Commonwealth
ADCU	Agricultural Diversification Co-ordinating Unit of the OECS
AGRIFORUM	EU Forum of the English, French and Dutch Speaking Caribbean countries
AMS	Aggregate Measures of Support
BACT	Barbados Agricultural Credit Trust
BAMC	Barbados Agricultural Management Company
BDD	British Development Division
CaRC	Caribbean Regional Centre of the IICA
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community Common Market
CARISEC	CARICOM Secretariat
CARIBCAN	Caribbean-Canadian Agreement
CBAG	Caribbean Basin Administrative Group
CBE	Cocoa Butter Equivalents
CBI	Caribbean Basin Initiative
CDB	Caribbean Development Bank
CET	Common External Tariff
CFSNSU	Caribbean Rood and Nutritional Security Network and Technical Support Unit
CTV	Citrus Tristezia Virus
DR	the Dominican Republic
ECEDA	Eastern Caribbean Export Development Agency
ECLAC	Economic Commission for Latin America and the Caribbean
ECU	European Currency Units
ECCB	Eastern Caribbean Central Bank
EEC	European Economic Commission
EIU	Economic Intelligence Unit
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FMTC	French Mission for Technical Coorperation
FSU	Former Soviet Union
GATT	General Agreements on Trade and Tariffs
GDP	Gross Domestic Product
JAD	Junta Agroempresarial Dominicana (Agro-Industrial Board of the DR)
IDB	Inter-American Development Bank
IFAD	International Fund for Agricultural Development
ITC	International Trade Centre
LDCs	Least/Least Developed Countries
MoA	Ministry (s) of Agriculture
MMF	Man made fibre
NBR	New Banana Regime of the UK
NFIDCs	Net Food Importing Developing Countries
NTB	Non-Tariff Barriers
NDDP	National Dairy Development Programme of Guyana
OCT	Overseas Countries and Territories arrangement of the Lomé Convention
OECS	Organisation of Eastern Caribbean States
OECS/EAS	Organisation of Eastern Caribbean States Economic Affairs Secretariat
PBAG	Pacific Basin Administrative Group

Acronyms continued

PMB	Pink Mealy Bug
R&D	Research and Development
RTP	Regional Transformation Programme for Agriculture
SCMA	Standing Committee of Ministers Responsible for Agriculture of CARICOM
SLDP	State Lands Development Project of Trinidad & Tobago
SLDC	St.Lucia Livestock Development Corporation
SPS	Special Preferential Sugars facility of the Lomé Convention
SPS	Sanitary and Phyto-Sanitary Agreement of the WTO
STRV	short ton, raw value
TCA	IICA Technical Corporation Agencies
T&T	Trinidad and Tobago
TC/ha	ton cane per hectare
TC/TS	ton cane per ton sugar
TROPRO	Tropical Produce Support Programme of the USAID
UK	United Kingdom
UR	Uruguay Round
US	United States
USAID	Unites States Aid for International Development
USDA	United States Department of Agriculture
WTO	World Trade Organisation

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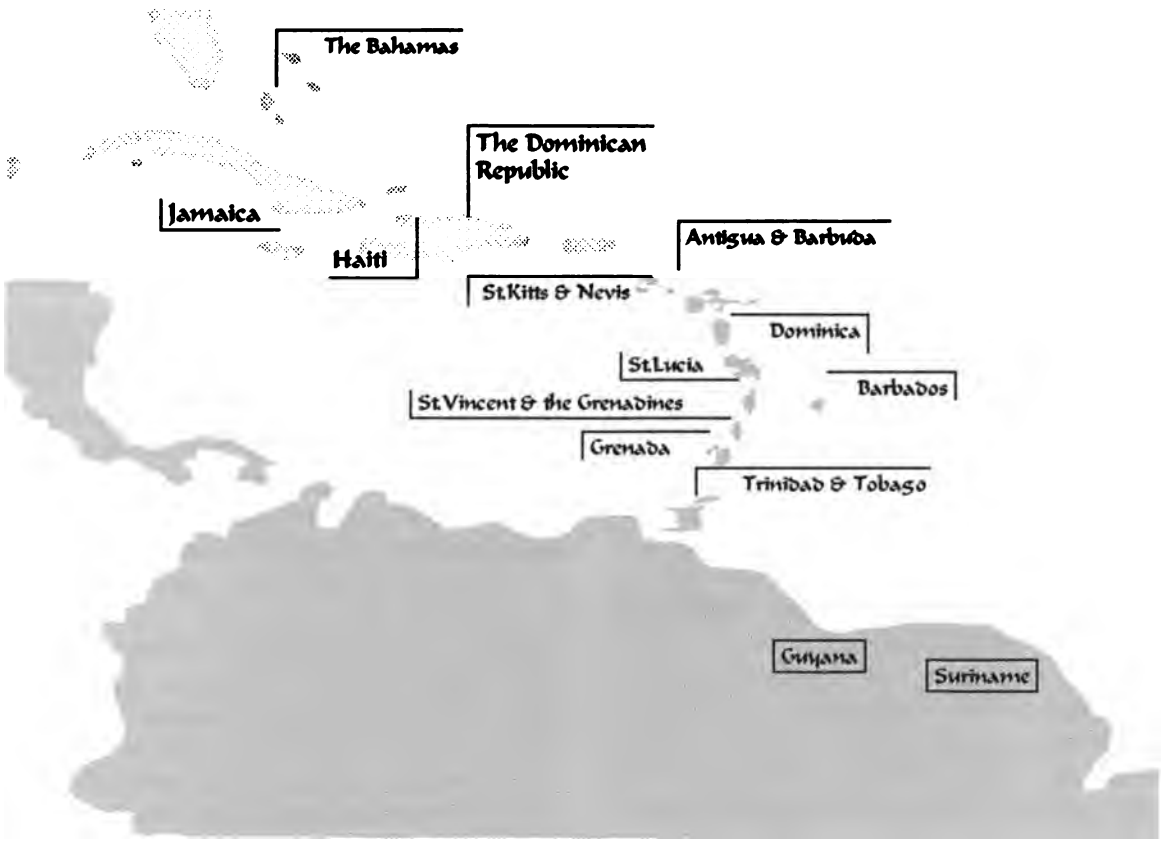
Caribbean Region ~ Membership

For the purpose of this report, the Caribbean region is defined as the countries which comprise IICA's Caribbean Region. These are Guyana and Suriname on the South American Mainland, the twin island Republic of Trinidad and Tobago, Barbados, six of the seven members of the OECS, namely, Grenada, St.Vincent and the Grenadines, St.Lucia, Dominica, Antigua and Barbuda, St.Kitts and Nevis, the Dominican Republic and Haiti, Jamaica and the Bahamas.

These 14 member countries of the Caribbean region occupy a combined land area of roughly 488 thousand sq. km. Of this total, 78% is shared between Guyana and Suriname, with the six-country OECS sub-grouping and Barbados accounting for less than 1% of the total. The balance is relatively evenly shared among the remaining countries (see Appendix Table 1-Land Distribution by Country). In 1996, the combined population of the 14 Caribbean countries was an estimated 21.5 million, representing an increase of 8% over 1991 estimates. Of this total, 38% was located in the Dominican Republic, 34% in Haiti, 12% in Jamaica and 6% in Trinidad and Tobago. Guyana and Suriname (which account for less than 6% of the total Caribbean population) are ranked as the countries with the lowest population density ratios in the Caribbean region.



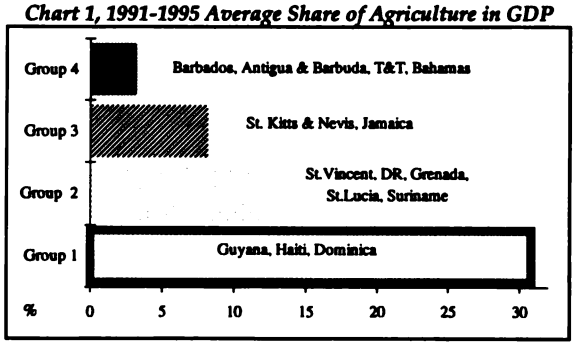
Caribbean Agriculture ~ Performance

Socio-Economic Performance

The assessment of the performance of the agricultural sector in general and of its sub-sectors and specific industries in particular over the 1991-1996 period is based on data obtained from national statistics and regional and international reports.

This assessment also recognises that the economic importance of the agricultural sector as well as the relative importance of its sub-sectors vary among and within Caribbean countries. This is illustrated in chart 1, which groups member countries according to the agricultural sector's average share in real gross domestic product (GDP) for the 1991-1995 period.

Chart 1, 1991-1995 Average Share of Agriculture in GDP



Most countries of the region reported lack-lustre performance of their agriculture sectors during the 1991-1995 period. The countries most seriously impacted were Haiti, Grenada, and Barbados (Table 1). The situation in Haiti was largely associated with the adverse economic effects of the US trade embargo. Excluding Guyana, Jamaica and to a lesser extent Suriname and Trinidad & Tobago, the other countries exhibited a similar pattern of growth and decline in their agriculture sectors between 1991-1995. Such annual variation was more pronounced in the OECS countries of St.Lucia, St.Vincent, St. Kitts & Nevis and Antigua & Barbuda. For the Dominican Republic (hereafter referred to as the DR) and Dominica, the agriculture sector declined steadily between 1993-1995.

The fall-off in the performance of the agricultural sector over the 1991-1995 period was due, in large measure to the problems experienced in the main export crop industries and general stagnation in the other sub-sectors. While output from the fish, livestock and forestry sub-sectors have increased in most instances, this has been insufficient to compensate for the decline in crop production. For those countries reporting favourable, albeit low average growth rates, this was attributable to improved production techniques in the major export crop industries and strong performance in domestic food production. In terms of real annual growth, the agriculture sector in Guyana and Jamaica performed the best among the Caribbean countries.

Table 1

Agricultural Sector Real Growth by Country

% Growth	1991	1992	1993	1994	199 5
Jamaica	-0.2	13.0	10.1	7.5	2.2
Trinidad &Tobago	6.5	4.9	-10.7	13.1	-0.1
Barbados	-3.4	-9.7	-4.1	-0.9	0.0
Guyana	12.1	24.6	5.9	12.2	8.4
DR	17.6	2.5	0.0	-9.8	-5.4
Haiti	-0.2	-1.0	-2.5	-1.7	-7.3
Suriname	3.2	6.1	0.7	-1.8	5.9
St.Lucia	-16.0	21.3	-5.9	-12.4	9.52
Dominica	1.7	2.2	-1.6	-2.7	-8.1
St.Vincent	-5.9	4.1	-11.1	-27.1	37.2
Grenada	-1.9	-2.6	-3.7	-6.6	6.6
St.Kitts &Nevis	16.7	-0.6	7.6	-5.33	2.41
Antigua &Barbuda	-0.8	7.6	4.3	-2.0	-5.6

Sources: Economic & Social Progress in Latin America, 1996
National Country Statistics

The declining share of agriculture in gross domestic products for some Caribbean countries reflects the reduced dependence on agriculture. A few countries have achieved some success in transforming their economy from agriculture to a service and/or industry-led economy. This structural transformation process was stimulated by rapid growth of the agricultural sector, not its demise.[1] This was the case during the mid-

1 Agricultural Diversification Policies and Issues from East Asian Experiences; Policy Research and External Affairs, The World Bank. (1990).

1970s to mid-1980s, when the agricultural sector in most countries experienced rapid growth. The slowdown in the rate of growth from the late-1980s may be closely linked with a general lack of re-investment in the agricultural sector, a pre-condition for the generation of internal dynamism. Other factors which may account for this slowdown include macro-economic instability which impacted the sector and increasing uncertainties with the preferential market regime, particularly for bananas.

Although the provision of appropriate macroeconomic policies and incentives to encourage private sector initiative has been articulated in the various development strategies in the region, compared to other sectors (tourism and manufacturing), the incentive system for the agricultural sector in most member states remained far too general, in some instances, mis-conceived and in practically all Caribbean countries, improperly administered.✦

Policy Environment

Among the Caribbean region, the national policy objectives for the agricultural sector may be conveniently summarised according to four broad objectives:

1. to increase competitiveness of fresh traditional and non-traditional exports and processed products;
2. to enhance the food security and nutritional status of the population through "efficiency based" import replacement programmes;
3. to strengthen inter-sectoral linkages and increase value-added to the sector; and
4. to foster equitable income distribution and sustainable agricultural development.

These national objectives are reflective of the objectives for the regional agricultural sector as outlined in CARICOM's Regional Transformation Programme (RTP) for agriculture. Notwithstanding the differences in national emphasis, the underlying objective continues to be the transformation and re-organisation of the sector in order to increase the returns to investment, improve agricultural trade balances and ultimately, encourage increased activity in the agricultural enterprise. Among the myraid of strategies employed to effect this transformation, the most common have been efforts aimed at:

1. institutional restructuring and strengthening of the policy planning, decision-making and programming framework;
2. provision of incentives to export crop and domestic food production and food processing;
3. introduction of productivity-enhancing production methods and techniques as well as the provision of infrastructure (roads, water management and irrigation etc) and other requisite infrastructural support;
4. agricultural diversification;
5. land reform and redistribution;
6. support services and incentives systems
   and
7. the provision of an environment conducive to greater private sector participation.

In countries experiencing problems of foreign exchange instability, such as, Guyana, Suriname, Jamaica and Trinidad & Tobago, a key element of their agricultural development strategy has been the pursuit of stabilisation in the prices and exchange rates. In the DR and Haiti, the objectives of agricultural policy are similar to those for the CARICOM region. High priority is accorded to the agriculture sector regarding its role in enhancing food security and poverty reduction. Institutional modernisation and strengthening and reform in the land tenure and distribution system are deemed critical to the recovery of the agriculture sector in Haiti and the DR.

Role of Government

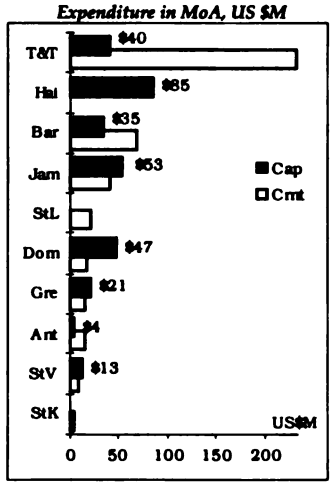
Public sector support continues to be critical in the provision of basic services, incentives

and infrastructure to facilitate production, distribution and marketing. However, the bulk of public sector resources tends to be absorbed in institutional costs aimed at maintaining the Ministries capacity to manage agricultural developmental activities.

Generally, for most Caribbean countries, the share of agriculture ministries budget in total public sector current expenditures ranged from 2.5-3.5% per annum between 1991-1995. However, in St.Vincent and St.Lucia, the comparative percentage averaged 4% and 5%, respectively and in Suriname, 2%. Public sector support spans the range from subsidised services and inputs, to fiscal incentives in the form of duty and tax exemptions and/or concessions on inputs, vehicles and equipment. Among the more developed Caribbean countries (Jamaica, Trinidad & Tobago, the DR and Barbados), price supports to "sensitive" commodities are granted on the rationale that producers would be faced with severe difficulties in meeting input costs in the absence of government intervention.

Chart 2 provides an indication of the level of current and capital expenditures (values indicated for capital expenditure) in agriculture in selected countries over the 1991-1995 period.[2] Its is important to note that while the country totals represent the bulk of capital expenditure in agriculture, some indirect public-sector spending not reported as MoA expenditure may be unaccounted for. The level of capital expenditure is indicative of the relative emphasis placed on agricultural development and on the individual country's ability to attract donor financing for development activities based on varied criteria.

Chart .2: 1991-95 Total Public Expenditure in MoA, US $M



During the 1980s, the Caribbean Region continued to be very reliant on external donor financing to undertake agricultural development projects. In the 1990s, the level of external financial support declined drastically due to a reduction in concessional financing. This, coupled with the deteriorating fiscal balances, contributed to a general reduction in financing to the agricultural sector.

Against this backdrop, the level of private sector investment in agriculture registered little increases. Historically, private sector direct investment in agriculture has been relatively low, due in part, to the high associated risks, unfavourable terms of commercial credit and the limited capacity of development banks in administering agricultural loans. Since the late 1980s, many of these development banks have been required to increase their efficiency and to become increasingly self-financing. The result has been a gradual convergence of lending interest rates to market rates. This trend has essentially increased the borrowing rate to small farmers further reducing their access to credit.

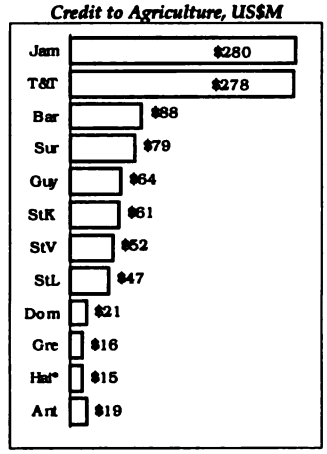
In the OECS countries, Barbados, Trinidad & Tobago, Jamaica and Haiti, agriculture's share in total commercial bank credit averaged under 8% between 1991-1995.[3] For Guyana and Suriname the comparative shares were 12% and 16%, respectively. Chart 3 shows the total commercial bank credit to agriculture (includes credit to the public sector) for selected countries over the 1991-1995 period. Although comparative data for the DR were not available, it was reported that inspite of the expansion in the financial

[2] At the time of preparation of this report, lack of and/or incomplete data for some countries precluded their inclusion.

[3] Information on credit for Haiti in chart 3 excludes loans under G$75,000.

system in recent years, the agricultural sector received roughly 17% of the total credit portfolio of the commercial banking sector.

Chart . 3; 1991-95 Commercial Bank Credit to Agriculture, US$M

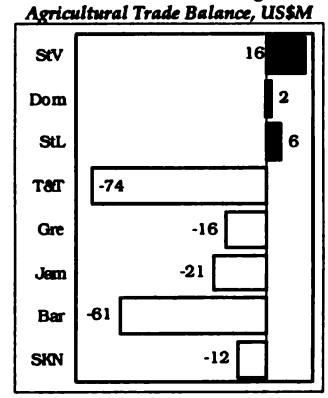


The relatively low level of public and private sector investment in agriculture has adversely affected its role in the economy, both in terms of foreign exchange earnings and as an employer. The increase in urbanisation, the rising levels of unemployment and the increasing incidence of poverty (both rural and urban) in the region suggests a continuing inability of the sector to compete for labour and to stimulate rural-based economic linkages. These limitations derive in large measure from anti-agricultural biases as well as administrative interventions which create distortions in the product and factor markets. These distortions have not been conducive to labour-demanding growth.

Most countries in the Caribbean Region are net-food importers. It is estimated that among the other sub-regional grouping in the Americas, the Caribbean region has the highest ratio of total food imports as a percentage of total consumption, with a ratio of just over 40%, compared to 10% for the entire Latin American and Caribbean Region. Food availability statistics for Caribbean countries in the 1990s, estimated kilocalories of energy of 2700 and protein of 60g, which were over the international benchmark levels of 2250 kilocalories and 43g of protein.[4] Despite the increased food availability, many Caribbean countries continue to incur deficits on agricultural trade which point to an increasing demand for a range of food products, particularly processed products, not currently produced in the Caribbean.

For traditional net food-exporting countries such as St.Lucia, Dominica and St.Vincent, the 1990s witnessed an erosion of the agricultural trade surpluses. Chart 4 illustrates the annual average agricultural trade balance for selected countries over the 1991-1995 period. The deteriorating agricultural trade balances was led by declines in the volume and value of agricultural exports. This situation has been exacerbated by the fact that the increasing demands for food are being met from imports, particularly of processed and "ready-to-eat" products.◆

Chart .4 1991-95 Average. Agricultural Trade Balance, US$M



Diversification

Diversification of Production

Virtually all Caribbean countries implemented agricultural diversification programmes in the 1980s. The shared objectives of these programmes were to reduce the economic dependence on a narrow range of agricultural exports, enhance domestic food production capabilities and reduce the food import bill.

Jamaica and Trinidad & Tobago presented slightly different situations since the range of agricultural production and exports is more diverse. The agricultural sector in Jamaica has also benefited from a strong sector programming process and the implementation of projects aimed at consolidating traditional crop production as well as expanding the area under cultivation of non-traditional commodities. Consequently, Jamaica has gradually strengthened its agricultural sector's capacity

[4] FAO/Government Cooperation Project of CARICOM "Establishment of a Regional Caribbean Food and Nutrition Security Network and Technical Support Unit (CFSRSU).

to respond to changing market conditions. Even in Jamaica and Trinidad & Tobago, there remains a need for the intensification of the agricultural diversification strategy, particularly as it relates to market diversification.

Apart from their potential with regard to the generation of foreign exchange, another important criteria of the various diversification programmes has been the potential to generate linkages with the tourism and manufacturing sectors. In general, emphasis was placed on expanding cultivated area of improved varieties and improving the maintenance and post-harvest practices for local fruit varieties, particularly those found growing in the wild, such as, golden apple, tamarind etc. Since the mid-1980s, increased emphasis has been placed on developing the marketability, particularly of fresh fruit and processed commodities, juice, jams, jellies and candied fruit.

The expansion in productive capacity of meat and fish products featured prominently among the various programmes of agricultural diversification. The ability to offer a wide range of products was highlighted as being critical to achieving the objective of reducing the Region's food import bill. An important element of livestock "diversification" programmes was the increased application of modern science to livestock rearing. This took the form of the introduction of improved genetic stock as well as improved husbandry techniques, animal housing, feeding regimes and pasture management.

In spite of common objectives, the implementation strategy of agricultural diversification programmes have differed among Caribbean member countries. In most countries, however, agricultural diversification has been state-led, with private sector involvement focused in the areas of aquaculture and ornamental horticulture production (cut flowers).

In the OECS, diversification programmes benefited from donor financial assistance, such as, the British Development Division (BDD) for non-traditional fruit crop production in the Windwards and the International Fund for Agricultural Development (IFAD) for the integrated development of the rural areas. The establishment of the OECS Agricultural Diversification Coordinating Unit (ADCU) in 1989 strengthened the marketing component of the largely production-oriented programmes of the countries of the sub-region.

In spite the modest incentives accorded to the agricultural sector, most Caribbean countries have experienced fairly limited success in increasing agricultural production and exports. In general, the performance of the non-traditional sector continued to fluctuate, with a tendency towards low and in some cases, negative growth in recent years. In most countries, in spite of the overall deterioration in productivity and declining profit margins, the traditional crops (mainly banana, sugar, citrus, cocoa) continue to dominate the agricultural sector, in terms of contribution to national income, foreign exchange and employment.

Limitations to agricultural diversification include the inappropriate policy/regulatory environment, ineffective institutional support systems, the low rate of technological adaptation, high incidence of praedial larceny and the virtual non-existence of compensation programmes for revenue and income insurance and other social safety nets.

Diversification of Markets

Of the range of problems confronting agricultural diversification, marketing is the most frequently cited. Marketing infrastructure and information systems (including grading and commodity quality standards, appropriate packaging and transportation, processing facilities, market intelligence, advertising, penetration and maintenance of market shares) continue to be

identified as a critical constraint to the sustained development of the agricultural sector.

As regards market infrastructure, most Caribbean countries are aware of the problems created by inefficient distribution systems for the non-traditional fruits and domestic food commodities. Caribbean countries have instituted market improvement programmes, which include the upgrading (equipping) and/or construction of the marketing facilities in the rural and urban areas. In many Caribbean countries the operation of national marketing boards has been rationalised with a view to increasing efficiency (in some countries this has meant privatisation). These efforts have been supported by greater attention to grades and standards development, support to packaging and labeling with most Caribbean countries increasing their efforts at export promotion activities aimed at new markets penetration. Most of these initiatives were supported by sub-regional and regional export marketing programmes, such as the Eastern Caribbean Export Development Agency (ECEDA), the OECS/ADCU's Tropical Produce Support Project (TROPRO) and CARICOM's Caribbean Export Project.◆

Commodity Performance

Preferential access to the EU market via the Lomè Convention, to the US market via the Caribbean Basin Initiative (CBI) and to Canada via the CARIBCAN agreement, has allowed for the continued production of sugar, rum, rice and banana.

The Sugar Industry

The Regional sugar industry exhibited mixed performance during the first half of the 1990s. For most Caribbean producers, the downward trend in production and prices was characteristic of the industry's performance over the past decade. Industry restructuring programmes implemented between the late 1980s and early 1990s appeared to have had the greatest results in Guyana.

As indicated, gross value-added from the Guyana sugar industry averaged 13.8% per annum between 1991-1995 (Table 2). In addition to the negotiation of a management contract with the international sugar management company, Booker Tate, trade and exchange regimes reforms facilitated investments in the industry which were critical to the industry's recovery.

Table 2

Real Growth (%) of the Sugar Industry in GDP

Real Growth	1991	1992	1993	1994	1995
Jamaica	na	-5.59	2.57	-2.41	-7.30
Guyana	22.91	52.10	-0.26	4.10	-0.63
T&T	7.17	5.90	-7.29	12.87	0.75
Barbados	-5.08	-17.86	-9.13	6.22	-25.23
St.Kitts/Nevis	na	-1.96	8.45	-12.82	0.00

Source: National Statistics

In spite of a gradual improvement in the quality of cane cultivated, problems of low and declining yields persisted throughout the 1990s (Table 3). Unfavourable weather conditions, contraction in cultivated acreage, high incidences of cane fires (such as in Barbados) and industrial disputes (such as in Trinidad & Tobago and Jamaica) also had negative impacts on the industry. While there was increased mechanisation of cultivation and harvesting operations, the Caribbean sugar industry remains largely labour intensive and work stoppages adversely affected industry efficiency.

Table 3

Cane & Sugar Efficiency Ratios & Production

	1991	1992	1993	1994	1995
TC/ ha					
Jamaica	64.7	64.1	67.1	62.8	60.0
Guyana	61.6	74.5	74.5	75.6	68.8
T&T	54.6	58.4	52.6	63.6	na
Barbados	57.2	57.2	55.9	56.3	47.6
TC/TS					
Jamaica	11.9	11.3	12.4	11.3	10.9
Guyana	14.3	12.6	13.1	12.5	11.6
T&T	12.9	11.7	11.6	11.0	11.3
Barbados	8.9	9.8	9.1	8.5	9.3
Production,'000 mt					
Jamaica	228	223	215	217	210
Guyana	163	247	247	257	254
T&T	134	145	138	169	159
Barbados	66	54	49	52	39
St.Kitts/N	19	20	21	20	20
DR*	6,844	6,856	7,368	6,257	5,199

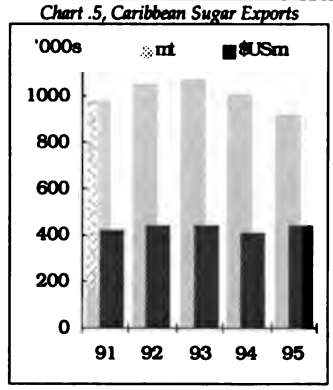
*refers to sugar cane production

Source : National Statistics

Most Caribbean sugar producers reported strong performance in 1996 as compared to the 1991-1995 period. The revival of the sugar industry in Barbados was evidenced by an increase in output by 59% during the first half of the year. Sugar remained the most significant agricultural sub-sector in Trinidad & Tobago, with harvested cane increasing by 5.9% over the 1995 harvest levels. The level of refined sugar produced in 1996 represented the highest level ever for the Trinidad & Tobago industry. Despite flooding, sugar output in Guyana was at the highest level in over a decade. In the DR, sugarcane production also increased by approximately 17% in 1996.

Over 95% of the sugar produced in Barbados, St.Kitts & Nevis and Guyana is exported. The comparative figures for Jamaica and Trinidad & Tobago was roughly 70% and 40%, respectively.[5] As indicated in Chart 5, total Caribbean sugar export values remained relatively constant despite some variability in export volumes. Caribbean sugar exports are dominated by exports from the DR. The DR accounted for 50% of export volumes and 35% export earnings over the 1991-1995 period. The comparative 1991-1995 average export shares for Guyana were 27% (volume) and 21% (earnings).

Chart .5, Caribbean Sugar Exports



The decline in export volumes from 1994 was led by a reduced level of output from the DR and declining production levels from the other Caribbean producers. In spite of the 10% decline in export volumes in 1995, total export earnings increased by 17%. This increase derived from a 10.4% increase in the average price of sugar on the UK market, from US$607 per ton in 1994 to US$670 per ton in 1995. The latter price compared favourably to the US$370 per ton on the open market. Guyana, however, appeared to be the only producer to experience real gains. The Guyanese sugar industry experienced a 10% increase in export earnings in 1995. It is noteworthy, however, that favourable movements in the exchange rate could have also been a contributing factor. Jamaica and Trinidad & Tobago also experienced an increase in export earnings in 1995. However, this was associated more with an increase in export volumes than with an increase in production efficiency.

From July 1st, 1995, additional access to the EU for ACP sugar producers was granted under the Special Preferential Sugars (SPS) facility. This SPS facility will run for a six year period and sugar exported under this arrangement will be subject to a reduced levy of 6.9 ECU per 100 kgs. During the first year of its operations, CARICOM producers shipped a total of 130,805 tons of sugar via this facility.

Caribbean producers export sugar to the US market through import quotas allocated under the sugar import tariff. The USDA administers the quota in order to ensure efficient sugar supplies domestically. After the quota was initially set at the WTO minimum, the USDA announced an increase in the 1995 quota of 330,693 short ton, raw value (STRV) and another increase of 440,924 STRV in January 1996. Over the next five year period (1997-2001), US imports of sugar are expected to increase slightly, (about 1/12th), or 10,000 STRV per year to meet the increase in demand not filled from domestic sources. Under this arrangement, the initial 1996/97 quota allocation for CARICOM US sugar quota holders was 85,146 mt.

[5] The information on marketing arrangements and developments extracted from the CARICOM document - Marketing Developments relating to the Major Commodities, 22 March, 1996. Information on the US and international sugar market draws from the "Agricultural Outlook Forum'96 Proceedings, USDA", February 21-22, 1996. Washington DC.

The Banana Industry:

Compared to other hemispheric producers, banana production in the Caribbean is characterised by relatively low efficiency and productivity levels.[6] Apart from ecological and topographical constraints, the relatively low efficiency in inputs use, general lack of technological application and farm capitalisation, as well as inefficient industry management continue to be critical constraints. The Windward islands, in particular, have earned a reputation as being high cost producers of variable quality bananas. The elimination of preferential market access in the UK and the attendant loss of confidence in the industry, were important factors contributing to the decline in the economic viability of many banana enterprises, particularly in the Windward islands.

St.Lucia and Jamaica are the region's two largest banana producers accounting for an average share of 30% and 20%, respectively, of total production for export. Dominica and St.Vincent and the Grenadines are also significant Windward islands producers and shortfalls in output from these countries significantly affects banana exports from the region (Table 4).

In terms of output, between 1991-1995, banana production either increased (Jamaica), was fairly constant (Suriname), or displayed high annual variability (Windward Islands). Banana production in the Windward islands was adversely affected by the 1994 drought (St.Vincent) and the hurricanes of 1995 (St.Lucia and Dominica). However, the depressed performance of the Grenada banana industry was due largely to the persistent moko disease and severe loss of soil fertility and disintegration of the umbrella industry association. Between 1984-1994, a total of 396 acres of moko-infected banana were destroyed out of a total of 1,400 acres. Rapidly declining yields in traditional banana fields, prolonged shortage of inputs, leaf spot and moko disease problems as well as depressed green market prices also had negative impacts on the viability of banana production in Grenada. In 1995, Grenada's contribution to total Windward islands banana exports output averaged just over 1%, down from 4% between 1985-1990. In St.Lucia and Dominica, banana export earnings on average, accounted for over 80% of total agricultural exports between 1991-1995. The share of banana exports in total earnings was approximately 60% in St.Vincent and less than 20% in Grenada and Jamaica. The comparative share for Suriname was 2.5%. The effect of declining production from the Windward islands (particularly from 1993), is clearly illustrated in chart 6.

Table 4

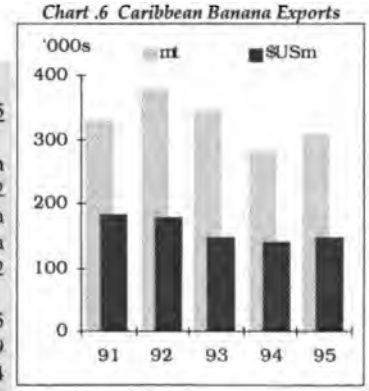
Banana: Cultivated Area and Production ('000 mt)

	1991	1992	1993	1994	1995
Acreage					
St.Lucia	13,993	13,995	na	na	na
Dominica	11,018	11,606	10,408	10,502	9,542
St.Vincent	11,000	12,000	12,000	10,000	na
Grenada	1,700	1,200	900	1,000	na
Suriname	5,475	5,265	5,312	5,310	5,312
Production					
St.Lucia	99.3	135.4	123.3	90.9	105.5
Dominica	56.2	60.9	57.1	43.0	33.9
St.Vincent	64.8	77.5	59.3	31.2	50.4
Grenada[1]	6.9	6.5	4.9	4.5	4.6
Jamaica[2]	75.3	76.7	76.8	78.6	85.2
Suriname	50.0	49.9	47.5	47.5	49.7
Guyana	12.8	13.3	13.6	16.1	16.2
Haiti[3]	50.9	51.9	50.8	36.2	31.9

1 - represent export data; 2 reflects export data; 3- includes plantains

Source: National Banana Associations

Chart .6 Caribbean Banana Exports



In spite of relatively positive performance from Jamaica and Suriname, the volume of Caribbean banana exports trended downwards. In Jamaica, however, production increased steadily between 1985-1995. Banana production increased from

[6] P.Antoine and D.Francis "Productivity Growth in the Windward Islands Banana Industry, 1965-1995" (working document), publication forthcoming 1998.

13,000 tons in 1985 to 85,000 tons in 1995, growing at a rate of 3.2% per annum between 1991-1995. For Suriname, with the exception of a slight decline in 1993, the volume of banana exports increased over the 1991-1995 period, moving from 28,200 tons in 1991 to 33,800 tons in 1995. However, banana exports from Caribbean producers continued to be below their respective market quota allocations, of 294,000 tons for the Windwards, 105,000 tons for Jamaica and 38,000 tons for Suriname.

The EU, particularly the UK, continued to be the most important market for regional banana exports. However the level of competition in these traditional markets increased in the 1990s due to the conclusion of new and increased quota arrangements to Latin American banana exporters. In spite of this, Jamaica, Dominica and St.Lucia were able to increase their 1996 export volumes by 8%, 22% and 1.7%, respectively, as compared to their 1995 export levels. This was attributed to generally favourable weather conditions and renewed attempts at revitalising the industry through fruit quality improvement programmes and the negotiation of new marketing arrangements for banana exports.

The ability of the Caribbean banana industry to maintain market share will continue to rest critically on increased industry efficiency, improving fruit quality and general industry restructuring aimed at enhancing export competitiveness. The timely achievement of these objectives will become even more urgent given the WTO Panel decision which ruled against the EU banana regime. The achievement of these objectives, either within or outside the framework of some arrangement for continued market preference to ACP producers should be the desired outcome.

The Rice Industry

Over the 1992-1995 period, the rice industry in Guyana and Suriname accounted for approximately 3% per annum of real growth in GDP. Moreover, there has been a steady increase in the contribution of the rice industry to real economic growth in Guyana over the 1991-1995 period. In Suriname the contribution of the rice industry to GDP has been relatively constant over the same period.

The favourable performance of Guyana's rice industry in the 1990s was facilitated by industry de-regulation, including government divestment of milling facilities. The removal of price controls also supported industry development by allowing rice producers to more directly observe market prices. Growth in rice production was also a factor of the expanding area under cultivation. Yields and productivity increases, from 3,491.5 in 1988 to 3,972.3 tons/ha in 1995, represented a gain in volume of rice harvested of 480.1 tons. The increase in rice output of 38% in 1995 also benefited from the opening of a new seed plant and from infrastructural repairs (Table 5). During the first half of 1996, rice production in Guyana increased by 3.6% to reach 152,189 tons, in spite of production problems caused by flooding and diseases. By year end, rice production in Guyana was estimated to have attained its highest level in over a decade.

Table 5

Rice: Cultivated Area, Efficiency Ratios and Production

'000s units	1991	1992	1993	1994	1995
Harvested ha					
Guyana	77.9	77.3	98.0	97.6	132.3
Suriname	80.1	68.8	58.6	60.0	61.4
Paddy prod. mt.					
Guyana	251.3	286.0	336.2	378.4	525.5
Suriname*	229.1	261.1	216.9	217.9	242.1
Rice equiv. mt.					
Guyana	150.8	171.0	201.7	233.1	315.3

* dry 14%

Source: Individual Country Statistics

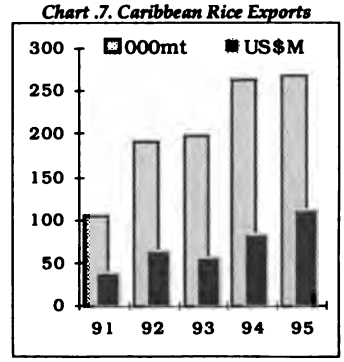
Rice production in Suriname experienced more moderate growth, averaging 4.6% per annum between 1991-1993. Output in 1993 was reported to be the lowest in 14 years and the share of rice in total crop production declined from 39% in 1988 to 28% in 1993. This decline was attributable to a lower sowing factor (or cropping intensity), which

declined from 1.8 to 1.4. Inadequate capacity of the main pumping station serving the main rice production area (Nickerie district), poor drainage and lack of regular field replanting contributed to the lower sowing factor.[7]

Preferential access to the EEC market under Lomé IV was ratified in August 1991 and will remain in effect until 2001.[8] Out of a total ACP quota of 125,000mt of rice and 20,000 of 'brokens', Guyana supplies approximately 40-45,000mt annually. This volume is fairly low in world rice trade. Guyana also supplies the EEC through the indirect route (via Curacao and Bonaire) provided under the Overseas Countries and Territories (OCT) arrangement. The price received by the OCT exporters averaged US$40 per ton above the price paid to ACP suppliers.

Caribbean rice exports increased over the 1991-1995 period (chart 7). This increase was led by growth in the Guyana rice industry. Rice exports from Guyana increased from 51,000 tons in 1990 to 200,542 tons in 1995, at a rate of almost 50% per annum. In contrast, rice exports from Suriname grew by a mere 8% per annum over the same period, registering slight declines in exports in both 1993 and 1995. The lacklustre performance of the rice industry in Suriname resulted from a number of limiting factors, including low government prices and a decline in the relevant physical infrastructure in the rice industry.

Chart .7. Caribbean Rice Exports



The CARICOM market (mainly Jamaica and Trinidad & Tobago) also represented an important outlet for rice from Guyana, which was the only regional supplier until July 1995. Guyana's share of the CARICOM market fluctuated between 10-19%. Guyana faces competition from relatively lower-priced rice imports of non-CARICOM origin, from the US and Asia, this despite the CARICOM Common External Tariff (CET) which imposes a tariff of 30% on rice imports from third countries. The competitiveness of Guyana's rice in CARICOM has been constrained by relatively high production and shipping costs (due to the absence of deep water facilities for bulk loading of rice). Between 1990-1995, Guyana suffered a significant loss of market share in Jamaica as a result of an influx of non-CARICOM rice imports, mainly under the US PL480 arrangement. US rice imports account for 75% of CARICOM's rice market.

These potential adverse effects from Jamaican PL480 imports were averted by disposal of the surplus rice to the EEC market via the OCT route. Guyana's rice export share to Jamaica increased to 46% in 1992 due largely to increased utilisation in that country. The corresponding share to the EU was 17%. This was a significant decline from the average 75% EEC per annum market share between 1989-1991.

During the first five years of its existence, the OCT arrangement was an important route for rice exports from Guyana and Suriname. In 1996, the combined rice exports from Guyana and Suriname through the OCTs was 280,000tons. The introduction of safeguard measures by the EU effective January 1997 (in respect of rice imports) via the OCT route placed severe restrictions on Guyana and Suriname's rice exports to that market. The four-month import quota of 42,650 clearly reflects the significance of this restriction, since the quota was exhausted from as early as the middle of February, forcing exporters to accumulate stock. In response to the limitation placed on the OCT route, Guyana and Suriname have begun developing strategies aimed at

[7] The sowing factor = actual planted acreage ÷ standing rice acreage. If all rice land is planted twice a year, then the optimum factor is 2. (IDB 1997).

[8] Information on EEC marketing arrangements obtained from the Caribbean Community Secretariat.

enhancing the competitiveness of their shipments through the direct route.

The Coconut Oil Industry

The coconut oils and fats industry has experienced mixed fortunes over the 1980s and 1990s. Since the 1980s, the industries in Trinidad & Tobago, Dominica and St.Lucia, in particular have been adversely affected by a combination of factors, including declining productivity, tree felling during hurricanes, pest and disease infestation. In spite of the implementation of various coconut rehabilitation programmes, recovery of the coconut industry has been hampered by low profitability. Low prices for copra compared to the price of water nut acted as a strong disincentive to copra production. The strong demand for coconut water has also increased the incidence of preadial larceny in virtually all producing countries. Table 6 provides performance indicators of the coconut industries for individual producers over the 1991-1994 period.

Table.6

Copra and Coconut Oil Production

	1991	1992	1993	1994
Copra, '000 mt				
St.Lucia	4,981	4,098	5,039	3,583
Dominica	2,035	2,532	2,661	3,209
St.Vincent	2,356	2,229	2,195	2,024
T&T	2,950	3,880	3,733	3,180
Guyana	na	3,317	3,927	2,845
Suriname	12,806	9,522	11,762	10,896
Jamaica	561	612	509	858
Coconut Oil, mt				
St.Lucia	2,197	1,034	2,462	3,500
Dominica	1,265	1,570	1,650	1,989
St.Vincent	1,460	1,382	1,361	1,255
T&T	1,829	2,410	2,314	1,972
Guyana	na	2,056	1,992	2,055
Jamaica	348	394	268	366

Source: National Statistics ; CARICOM Secretariat

The difficulties experienced by the Caribbean coconut-oil industry led to a suspension of operations of the Copra Manufacturers Limited in St.Lucia. The company went into receivership in 1995 due largely to low production levels and extreme excess capacity (at less than 4,000 tons). While the coconut-oil industries in Dominica, St.Vincent and Trinidad & Tobago experienced similar difficulties, they have managed to remain in operation. The copra industry in Trinidad & Tobago has been classified a "sunset" industry. The youngest coconut plantations in Trinidad & Tobago are between 70-120 years old and efforts at cultivating a new generation of trees have been of limited success. Besides praedial larceny of nuts, increasing costs of inputs and stagnant copra prices were also factors contributing to the industry's decline. Output in 1995 was estimated at 2,600 tons, 85% below the monthly requirement of 800 tons required for efficient oil processing in Trinidad & Tobago.

In contrast, the increase in coconut output in Jamaica between 1991-1995 may be attributable to the implementation of a field rehabilitation programme by the Coconut Industry Board, which emphasised productivity improvements as well as acreage expansion. Consumption data suggest that 95% of total coconut output was used dry or for water, with the remainder being used for copra and replanting.

In Guyana, following a brief period of declining output between 1986/1987, coconut production increased steadily. This was due in part, to the increasing regional demand for copra and improvements in the purchase price offered by the local vegetable oil refinery for copra.

Intra-regional trade in coconut oil is regulated by the CARICOM Oils and Fats Agreement, with the volume of oils traded determined by negotiation (through Schedule IX). Since the late 1980s, refined oil has dominated intra-regional trade in coconut oils. Jamaica is CARICOM's largest importer of refined coconut oil with Trinidad & Tobago being the leading importer of crude oil. However, the difficulties experienced by all regional producers have had an adverse impact on intra-regional trade in both crude and refined coconut oil in the 1990s.

The overall decline in the coconut-oil based industry is partly linked to the slowdown in the demand for coconut oil-based manufactured products (such as margarine, cooking oil etc.) since the mid-1980s. This resulted from the availability of relatively less expensive non-indigenous edible oils (sunflower, soya bean and other vegetable oils), which appeal to the increasingly health-conscious consumer market. There was also increased variability in intra-regional trade in coconut oils between 1991-1994. This decline in intra-regional trade was led by a significant fall-off in exports from Dominica, the main exporter to the regional market. Prior to 1992, Dominica's market share accounted for over 75% of all intra-regional trade in crude coconut oil. By 1992, Dominica's intra-regional market share declined to 62%. In the post-1991 period, intense price and non-price competition (linked to market liberalisation), as well as exchange rate instability in the Jamaican and Trinidad & Tobago markets were contributory factors to the deteriorating regional trade in coconut oils and constituent products.

In 1995, intra-regional trade in both crude and refined oil was estimated to have been at its lowest level even during existence of Oils and Fats Agreement. The inability of regional producers to satisfy regional demand resulted in an increased level of imports from extra-regional sources most of which was crude oil imports by Jamaica. While regional producers have not exported coconut oil to the world market in recent years, the high world market prices which prevailed in the 1996-97 period presented renewed possibilities for the low cost regional suppliers. The severe decline in copra production precluded these suppliers from taking advantage of these market opportunities, particularly for refined oil in Canada, US, Egypt and the UK.

The Beverage Crop Industry

Coffee: Caribbean coffee producers experienced mixed performance during the first half of the 1990s. Production in the DR was relatively stable, compared to a steady decline in coffee production in Haiti between 1991-1995 (Table 7). The extremely severe social and economic conditions in Haiti encouraged the felling of the "coffee" forests for the relatively more lucrative charcoal production. Following the re-instatement of constitutional government in 1994, efforts at revitalising the Haitian coffee industry (primarily through the USAID-funded coffee revitalisation project, 1990-1996) were successful in increasing production of rust-resistant arabica coffee varieties and improving the productivity and efficiency of coffee production as well as community-based processing. By 1996, 2,400ha of new higher yielding coffee were established.

Table. 7

Coffee & Cocoa Bean Production

'000 tons	1991	1992	1993	1994	1995
Coffee					
Jamaica	9.2	13.5	12.3	10.0	15.4
T&T	0.9	0.7	0.9	1.0	0.8
DR	44.9	42.9	46.3	32.7	42.4
Haiti	36.9	36.7	27.4	21.3	17.6
Cocoa					
Jamaica	4.4	6.2	6.3	6.2	6.2
T&T	1.5	1.1	1.6	1.5	1.7
Grenada	1.4	1.7	1.6	1.2	1.8
DR	42.3	50.1	53.3	62.4	59.4
Haiti	5.0	4.9	4.8	4.8	4.8

Source: National Statistics

The Jamaican coffee industry experienced strong performance between 1991-1995 , with annual output growth averaging 20% per annum despite a brief slow down between 1992-1993. Coffee output peaked at 15.4 thousand tons in 1995, the highest level since 1992 due largely to substantial increases in deliveries for the 1994/95 crop year. Improvements in field productivity, from 398 boxes per hectare in 1985 to 529 boxes per hectare in 1994 also contributed to this increasing output.

In Trinidad & Tobago coffee production declined by an average of 10% per annum between 1991-1995. The 58% decline reported in 1996 was due to severe drought, fire and the continued abandonment of cocoa estates.

In Trinidad & Tobago, over 90% of coffee output is consumed domestically.

Cocoa: The DR, Jamaica and Haiti were the only cocoa producers which maintained relatively constant levels of production over the 1991-1995 period. Cocoa production in Jamaica was maintained at over 6,000 tons annually, with the exception of 1991 when production continued to suffer from the effects of the 1988 hurricane. Jamaica's ability to maintain high levels of cocoa production close to its pre-1988 levels was attributable to improved planting techniques and crop agronomy, as well as improved payment arrangements to growers.

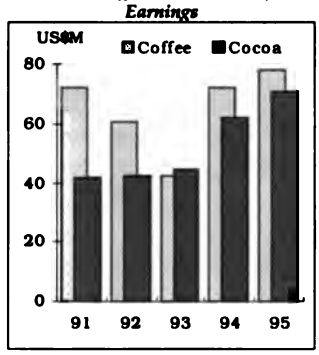
In Grenada, the second largest cocoa producer in CARICOM, annual output growth averaged 9.3% between 1991-1995. This growth rate would have been higher had it not been for a 28% decline in output in 1994. This decline occurred in spite of the 16.5% increase in export prices in 1994 over 1992/93 levels due largely to growth in consumption. Grenada is considered to be a relatively high cost producer of cocoa compared to its main regional competitors, Jamaica and Trinidad & Tobago and non-regional competitor, Cote d'Ivoire.

Prior to 1994, cocoa production in Trinidad & Tobago was characterised by steady decline. The result of labour shortages, declining productivity, declining acreage, disease and pest infestation and depressed international prices. However, stimulated by the strengthening of marketing arrangements, cocoa production began to recover in the post-1993 period. Cocoa production rebounded from 1995 with output increasing by a further 5.3% in 1996.

Compared to Latin American and Sub-Saharan African countries, the Caribbean region is a relatively small producer and exporter of coffee and fine flavour cocoa. For cocoa in particular, the fine flavour variety constitutes a small share of the world market. The markets for fine flavour cocoa are mainly in Europe (Nestlé, Lindt, etc) as well as in Switzerland, France and Germany.

The performance of cocoa and coffee exports from selected Caribbean countries over the 1991-1995 period is presented in Chart 8. The DR was the only country with positive annual growth in the export value of cocoa and Jamaica for coffee exports. Grenada, Haiti and Trinidad & Tobago exhibited variable performance in both cocoa and coffee export earnings over the 1991-1995 period. The overall negligible growth in cocoa exports to 1993 was the result of competition from Latin American producers as well as the declining trend in prices. The increase in export earnings after 1993 largely reflects the increase in world prices for cocoa. The 62% increase in cocoa export volumes from Jamaica in 1994 was associated with the 1994 price increase. For Grenada, the loss of a major purchaser which absorbed approximately 30% of the cocoa crop and paid contractual prices of about 90% above prevailing world market levels undermined the positive effects of the increase in world prices.

Chart .8, Coffee and Cocoa Export Earnings



The declining trend in coffee exports from the DR, Jamaica, Haiti and Trinidad & Tobago between 1991-1993 was also associated with competition as well as lower international coffee prices. The decline in the value of coffee exports in 1993 was led by a 15% decline in export volumes from the DR and a 5% decline in Haitian coffee exports. The DR is the region's largest exporter of coffee and prior to 1991, Haiti was the second largest coffee exporter from the Caribbean. Since 1992, Jamaican coffee exports have surpassed that of Haiti, with coffee export earnings increasing from US$16 million in 1992 to US$17million in 1995. In 1994, coffee exports

The sharp increase in export values from 1994 is largely reflective of recovery in the coffee industries in the DR, Haiti and Jamaica, with slight growth in coffee exports from Trinidad & Tobago.

Spices: Nutmeg/Mace, Pimento

In the Caribbean, Grenada is the main producer and exporter of nutmeg and mace, commodities which up until 1990 benefited under an oligopoly arrangement between Indonesia and Grenada. The termination of the arrangement resulted in a sharp decline in the world price of nutmeg and mace with resulting disastrous impacts on the Grenada spice industry. The adverse impact of lower international prices is evidenced by a decline in nutmeg and mace production by 6% and 16% per annum, respectively, over the 1991-1995 period (Table 8). Towards the end of 1995, the industry had experienced a 16% and 7% increase in nutmeg and mace output, respectively. This resulted, in part, from Government's financial support as well as the conclusion of a new marketing arrangement with Indonesia which made provision for increased market share for Grenada's nutmeg.

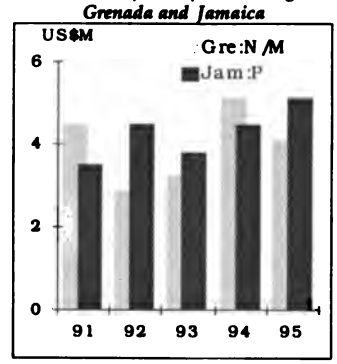
Table. 8

Spice Production

mtons	1991	1992	1993	1994	1995
Grenada					
Nutmeg:	2,633	2,337	2,187	1,795	2,098
Mace	246	137	88	93	99
Jamaica					
Pimento	1,752	2,280	2,187	2,666	na

Source: National Statistics

Chart .9. Spice Export Earnings Grenada and Jamaica



The US, Germany and Holland represent the major markets for Grenadian nutmeg and mace. Indonesia accounts for approximately two thirds of the US import market for nutmeg and mace, with Grenada supplying most of the remainder. Their dominant market share derived from the preference of US importers for deep brown aromatic nutmeg and orange-red mace from Indonesia.

The value of Grenadian nutmeg and mace exports declined by 37% per annum between 1991-1993, before recovering to their pre-1992 levels toward the end of the period (chart 9). The lower prices of the late 1980s and early 1990s reflected oversupply on world markets. The 34% and 50% declines in nutmeg/mace export value in 1992 and 1993, respectively, occurred in spite of a 25% and 20%, respectively, increase in export volumes in the same period. The 20% increase in world prices in 1994 led to a larger than proportional increase in export earnings (almost 200%). While it remains unlikely that Grenada will regain its pre-cartel era position in the world nutmeg market, the industry's viability in the post-1995 period is expected to improve due to the establishment of small-scale processing units to produce high value-added derivatives from nutmeg and mace.

Jamaica is the main producer/exporter of pimento in the region. Pimento is harvested from trees growing in the wild. In spite of the lack of production data for 1995, industry reports indicate that output may have been slightly lower than in 1994. Difficulties encountered in obtaining adequate labour for crop harvesting was largely responsible for the output and contributed to a 6.5% increase in the price paid to growers.

Jamaica is the principal source of US pimento imports, followed by Honduras, Guatemala and Mexico. Jamaica also exports pimento to the high-value markets in Europe (Germany, the Netherlands, France, the UK and the Former Soviet Union (FSU), Japan and Canada, Australia and Egypt. Pimento is used in the industrial and home baking of cakes, biscuits, pies and in pickles as well as in meat and fish products. The generally static trend in world demand for pimento in the late 1980s continued into the early 1990s. This partially accounts for the instability in pimento exports from Jamaica.

Pimento, pimento berry and pimento leaf oil export earnings increased from US$3.5 million in 1991 to US$5.1 million in 1995 (chart 9). The relatively slow growth in use of pimento into the US is attributable to the decline in the baking of specialty products and to its relatively high price, especially for the Jamaica variety. More recently, China and Indonesia have supplied small amounts of pimento to the US market. Static world demand for pimento, reduced demand from the FSU associated with the economic changes in that region and the emergence of competitors were all factors contributing to the slow growth in export values between 1991-1993. The increased level of pimento export earnings in 1995 compared to the two preceding years may also be attributed to the recovery of the Eastern European markets from 1993, which absorbed 43% more pimento products exports in 1995 than in 1994. Apart from pimento, other lucrative spice exports from Jamaica were ginger, tumeric and small amounts of nutmeg.

Fruits

Citrus

Since the 1970s, the citrus industry in the region has been beset by problems associated with the development of artificial citrus flavours, the rapid growth in the domestic supply capacity of Florida and other US citrus producing states as well as the significant expansion of the production capacity of relatively low cost citrus from Belize and Cuba. This increased supply capacity of citrus and substitutes drove down world prices to levels at which many industries in the region found it difficult to compete. Consequently, many citrus orchards were neglected, resulting in an increased vulnerability to diseases, such as the citrus tristezia virus (CTV), which continues to have deleterious effects on the regional citrus industry. The main citrus-producing member countries have experienced mixed performances (Table 9).

Jamaica was relatively more successful in expanding acreage of the "ugli" citrus for exports, while Trinidad & Tobago significantly increased orange production. In comparison, St.Lucia and Dominica continued to experience difficulties in increasing citrus output. Pest and diseases as well as low prevailing prices for citrus fruits acted as important disincentives to orchard maintenance and fruit harvesting in St.Lucia and Dominica.

Table 9

Citrus Production

tons	1991	1992	1993	1994	1995
Jamaica	24,801	47,609	27,693	52,634	na
Dominica	19,554	22,197	16,359	30,291	18,426
T&T	3,459	2,212	8,617	10,418	10,225
Guyana	6,400	7,200	7,600	7,600	6,600
St.Lucia	2,112	1,685	1,514	1,670	2,016

Source: National Statistics

The DR and Jamaica are the leading exporters of fresh citrus to extra-regional markets (Table 10). The bulk of the trade in citrus is intra-regional, with Barbados and Antigua & Barbuda being the main importers and Trinidad & Tobago the primary exporter.

Table. 10

Fresh Fruit Citrus Export Earnings,

US$'000	1991	1992	1993	1994	1995
DR	3,369	4,087	3,728	3,186	na
Jamaica	3,304	4,651	3,492	2,713	2,667
Dominica			893	433	726
T&T	na	32	63	213	150

Source: Individual Country Trade Statistics

Since the mid-1980s, the foreign exchange earnings from fresh citrus exports have declined significantly, the result of reductions in the region's production and increased competition in the fresh fruit market from imports. The majority of citrus juice processors in the region source their requirements of concentrates from the US.

Non -Traditional Fruits

Since the early 1980s, agricultural diversification programmes have encouraged expansion of exotic fruits, such as mango (particularly Julie, Tommy Atkins and Graham), avocado (West Indian variety), sour-sop, passion-fruit, pineapple and paw-paw. In spite of these efforts, the non-traditional fruit sub-sector in the Caribbean

remains small and commercial plantings limited.

In general, annual output and exports of non-traditionals continue to be highly variable. Trinidad & Tobago's exports of paw paw, principally to the UK, Canada and the US markets increased from virtual insignificant amounts prior to 1993 to just over US$1/2 m in 1993 and 1994. Grenada experienced some success with golden apple exports to the US and EU markets. Table 11 provides export earnings data for the main non- traditional exports of the Caribbean, specifically, mango avocado and breadfruit. As is evident, the non-traditional sub-sector provides small, though significant levels of exports revenues for several countries.

Table.11

Selected Non-Traditional Fruits Exports

US$000	1991	1992	1993	1994	1995
Mango					
DR	93	125	105	216	na
Jamaica	1,202	957	527	666	1,035
T&T	9	40	55	136	56
St.Lucia	213	282	205	396	197
Haiti (mt)	*13,438*	*277*	*7,130*	*2,742*	*9,951*
Avocado					
DR	829	2,393	2,367	1,924	na
Jamaica	47	107	135	186	109
T&T	na	6	5	21	13
Dominica	132	261	339	182	na
Breadfruit					
St.Lucia	319	265	261	296	312

Source: National Statistics

The consumer awareness and familiarity with mangoes in external markets has greatly facilitated mango exports to Europe and North America. However, over the 1991-1995 period, mango exports have been both sporadic and small. Prior to the trade embargo, Haiti dominated the Caribbean mango exports to the US, accounting for a 9% share in total US mango imports. Haiti has the potential to resume its status as the leading Caribbean mango exporter to the US based on existing production capacity as well as to its unique varieties which differ from that of its Caribbean counterparts. The Haitian industry continues to be constrained by the high proportion of fruit not satisfying export quality (approximately 30%) or not exported due to bottlenecks between the farm-gate and packing house. St.Lucia and Jamaica and to a lesser extent the DR and Grenada, are also important mango exporters.

The DR is a leading avocado exporter, accounting for a 58% share of total US imports between 1988-1989. Smaller amounts of avocado are exported from the Bahamas, which accounted for 5% share of the US market in 1993, as well as from Grenada and Jamaica. Prior to 1989, Dominica was also a relatively important avocado exporter, however, since then exports from Dominica have declined.

Exports of breadfruit from the Region are dominated by Jamaica and the DR. Jamaica is the leading producer of the seedless variety. Between 1983-1986, the DR accounted for an average US import market share of 44%, and Jamaica 38%. In 1993, Jamaica's share of the US market for breadfruit was 51%, Haiti and St.Lucia accounted for 11% and 10%, respectively, while the combined share of Trinidad & Tobago and St.Vincent was 15%.

Cotton

Commercial cotton production continues in Barbados, Nevis and Haiti, and to a lesser extent, Antigua. The scale of cotton production in the Caribbean is very small compared to the world cotton industry. However, cotton production and exports represent an important export commodity to these Caribbean producers, particularly to Barbados.

Following an annual decline of 32% between 1988-1991, cotton production in Barbados recovered slightly in the post-1991 period. Growth in cotton production was rapid in 1992 and 1994, and by 1995, output of almost 200% over 1994, brought cotton production closer to the pre-1988 levels of 173 tons (Table 12). Barbados cotton industry officials identify the major problems affecting cotton production to be the inability of cotton estates to raise investment capital due to their

heavily indebted nature, generally low prices, poor seed germination, pest infestation and serious industry management problems.

Table 12

Sea Island Cotton Production and Exports

	1991	1992	1993	1994	1995
Production mt					
Barbados	34.7	45.9	29.1	49.9	147.4
Nevis	12.5	6.4	5.5	4.8	5.9
Export, US$'000					
Barbados	228	458	359	277	1,230

Source: National Statistics

The significant expansion in cotton production and export earnings in Barbados in 1995 was attributed to a ten-year low in world cotton supplies. In the 1993/94 period, world consumption was estimated at 24% higher than the previous ten-year average.[9] This resulted in above normal prices which continued through to 1994/95. The implementation of a radical restructuring programme through the Barbados Agricultural Credit Trust (BACT) and the Barbados Agricultural Management Company (BAMC) in 1993 also contributed to this performance in 1995.

In terms of export earnings, cotton continues to be an important agricultural export of Barbados. Over 90% of Barbados's cotton is exported to Japan, with small amounts exported to Switzerland and the US. While the US market represents a relatively small market for Barbados cotton, the value of cotton exports to the US has been increasing, reaching US$ 56,193 in 1995.

While Nevis is competitive in the production of cotton, production in Nevis has been declining steadily by 25% per annum between 1991-1994. Production rebounded somewhat in 1995 by 23%. Production in Antigua & Barbuda has experienced similar difficulties to those faced by the other regional producers. While cotton production data for Haiti after 1985 are not available, data for the pre-1985 period indicate low levels of cotton production in Haiti, averaging less than 2.5 thousand tons per annum. Given the difficulties in the economy in general and the agricultural sector in particular, cotton production and exports were not expected to have increased significantly since 1985.

Cut Flowers

The cut flower and foliage industry is still small, but continues to exhibit significant potential in several Caribbean countries. In spite of data limitations, indications are that over the last decade, the production of cut flowers and foliage has grown in Barbados, Trinidad & Tobago and the DR. In Barbados, commercial acreage under horticulture grew from 30 acres in 1989 to 63 acres in 1994. Ginger lily and heliconia production accounting for 87% of total horticulture acreage. Comparable growth was achieved by other countries, notably Trinidad & Tobago, where commercial acreage increased from 85 acres in 1989 to 103 acres in 1997. [10] However, in Jamaica, acreage under tropical flower production decreased substantially in 1994, with approximately 60 acres of productive anthuriums remaining.

While local markets and the cruise ship tourism industry are relatively important outlets, most commercial producers have targeted markets in the industriliased countries. Cut flower and foliage exports from the Caribbean are fairly well separated into one of three markets: Barbados's main market is Europe, with Jamaica, the DR and Trinidad & Tobago producing mainly for the US market. Dominica's cut flower exports have traditionally been geared to the neighouring French islands of Martinique and Guadeloupe. Other tropical flowers and foliage tend to be exported as minor items

[9] Extracted from Agricultural Outlook Forum '96 Proceedings, USDA, 1996.

[10] Sources: Potential for the Development of the Cut Flower Export Industry in Barbados, T.Henderson, N.Laws, R.White, Fintrac Inc. (January 1994); Barbados: An Agricultural Sector Study Ministry of Agriculture, Food and Fisheries, (February 1989); "Flower growers no longer making money" article in the Trinidad Express Newspaper, April 14, 1997; "More flower power for TT" article in Trinidad Newsday, April 23, 1997.

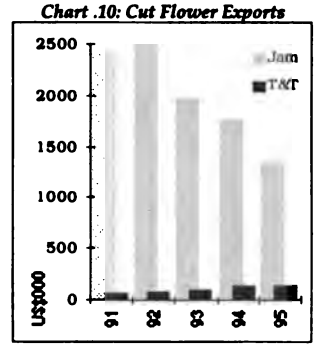
alongside anthurium, or in small shipments to specialty outlets.

In general the expansion of the commercial cut flower industry is constrained by the establishment costs and the high level of entrepreneurship required. Other factors, such as pest and disease damage, high production costs (extremely high water rates, labour and high interest rates on agricultural loans) and post-harvest damage also tend to reduce the viability of the enterprise. While there has been some revival in growth in recent years, the level of production remains relatively low.

The development of cut flower exports from the region has been adversely affected by poor marketing arrangements, intense competition in extra-regional markets, particularly for anthurium and low market demand for ginger lilies and heliconia. The cut flower trade is highly competitive with the Dutch being the world's leading cut flower producer. Although Japan has increased its production of specialist cut flowers, it remains one of the world's largest importers, followed by Italy.

According to available data, the level of cut flower export earnings in Jamaica far exceeds that from Trinidad & Tobago (Chart 10). Export earnings of cut flower increased from less than US$1M in 1991 to over US$1.5M by 1994. In the post-1995 period, exporters in Trinidad & Tobago were confronted by another major restriction on cut flower exports - the pink mealy bug. This outbreak severely constrained exports to CARICOM, which represents an important market for Trinidad & Tobago. However, with the control of the PMB and greater attention to phyto-sanitary procedures, cut flower exports are expected to recover.

Chart .10: Cut Flower Exports



Domestic Food Crops

Rice

Among the range of food staples, "no product has the importance of grains in agriculture".[11] This is based mainly on its role in food security in rural areas. In the Caribbean, rice is the most important grain produced by Guyana, Suriname, the DR and Haiti. Other important grains include sorghum (grown in Haiti and the DR) and corn. While rice production in Haiti has remained relatively constant, production tended to decline in the DR (Table 13).

Table 13

Rice Production

'000s units	1991	1992	1993	1994	1995
Paddy prod. mt.					
Trinidad/Tobago	19.9	22.0	16.2	17.5	na
Rice equiv. mt.					
DR (unmilled)	466.2	125.7	115.7	99.9	88.7
Haiti	128.3	564.9	455.9	375.8	486.7

Source: Individual Country Statistics

Trinidad & Tobago has made some progress in terms of increasing domestic rice production capabilities. However, much of domestic rice requirements continue to be imported. Rice production in Trinidad & Tobago has suffered from variable quality, particularly from small independent farmers, which resulted in a reduction in saleable paddy to the National Flour Mills (the sole processor of local rice). By 1995, production had declined significantly, led by a decline in output from the small independent farmers, due in part, to the capping of the rice subsidy programme and the introduction of a system of grades and standards.[12]

11 "AGRIFORUM, Toward an Agenda for Agriculture in the Americas" IICA, Costa Rica, 1997.

12 Under the IDB agreement, the Government of Trinidad/Tobago committed to a maximum of TT$17.2m on rice subsidies and linked to the grading system.

Other Staples

In terms of volumes, Jamaica appears to outperform the other Caribbean member countries in practically all categories of domestic food crops and vegetables. This situation may be a factor of the relatively higher level of cultivation of domestic food crops, stronger domestic demand and higher overall productivity in Jamaica. In addition, real increases in the retail prices for most of these commodities have stimulated expanded production.

Table 14 presents 3-year moving averages of per capita production indices for crops in eight selected Caribbean countries.[13] According to the index, except for Jamaica, most of the other countries reported either stagnant or declining food crop production, particularly in Grenada and St.Kitts & Nevis.

Table 14

Per Capita Crop Production Index

1989/91= 100*	1982	1985	1988	1991	1994
Barbados	140.6	132.7	108.7	99.0	85.4
Jamaica	102.1	103.6	100.9	106.5	121.6
T&T	111.1	88.5	93.0	102.5	99.1
Dominica	70.0	82.3	108.4	96.7	87.3
St.Lucia	68.9	89.8	100.9	100.6	94.8
St.Vincent	72.0	102.2	99.9	102.0	78.6
St.Kitts/Nevis	142.1	126.2	121.2	104.3	98.2
Grenada	121.2	117.1	110.6	99.7	109.8

* 3-Yr Moving Average,
Source: FAO STAT database

The decline in domestic food crop production in traditional producing countries, such as St.Vincent and Grenada may be partially associated with the increase in domestic food production capacity among traditional importers, such as Trinidad & Tobago. The effect has been a reduction in intra-regional trade in food crops, and subsequently, a decline in domestic production in a few Caribbean countries which depended on intra-regional markets for surplus production. As mentioned previously, this has been the experience of Grenada St.Vincent and the Grenadines, which previously enjoyed a lucrative trade with Trinidad & Tobago.

Prior to 1994, domestic food production in Haiti was adversely affected by the trade embargo. This led to a lack of resources for the purchase of inputs (seeds and fertiliser) and the inability to properly maintain irrigation equipment due to shortages in fuel and spare parts. The result was low yields and increased annual variability in output. For Haiti, the main domestic food crops are grains, beans, bananas, plantain, root crops, vegetables and fruits (including breadfruit). Production of root crops, in particular tended to increase due to the relatively lower cost of planting material and maintenance requirements compared to grain. Vegetable production, in particular, was hard hit by the embargo which impacted negatively on seed availability.

In general, the highly informal nature of domestic market arrangements tend to mask the extent of activity within the food crop sub-sector. This is further affected by the high annual variability in output as a result of unfavourable weather conditions, pests and diseases damage and changing area under cultivation in response to market conditions of the previous period. Praedial larceny, lack of compensation systems for crop loss and inadequate infrastructure are also severe constraints on domestic food production.

Livestock

The DR is the largest producer of meat and meat products in the Caribbean, with output levels surpassing the total combined production of the other major producers (Jamaica, Guyana, Suriname, Trinidad, Barbados) (Table 15). Beef exports from the DR averaged US$10mn per year between 1991-1995

Table egg production has increased significantly in many Caribbean countries during the 1990s and several are close to being self-sufficient. For the rest of the livestock sector, Jamaica, Trinidad & Tobago,

[13] Extracted from study on "Current Food and Domestic Demand Situation in the Lesser Antilles" T.Taylor and P.Antoine (IICA/FMTC) ISSN-0255-4746, (March 1998).

Guyana and Suriname have relatively well developed production capacities compared to Barbados and the OECS countries.

The livestock sub-sector in the OECS focused on small ruminant and pigs. These enterprises have tended to be small, utilising domestic feeds and meal. The levels of self-sufficiency in livestock products varies both among countries and within the various sub-sectors and the import of meat and meat products continues to be high. In addition, the high import content of much of the Region's commercial livestock production systems contributes to the Caribbean's rising food import bill.

Table. 15

Meat & Milk Production, Selected Countries

'000 kgs	1991	1992	1993	1994	1995
Beef					
DR	55,838	58,242	59,966	66,860	69,536
T&T	1,203	989	1,007	1,148	845
Guyana	3,000	4,200	3,800	4,600	3,800
Jamaica	16,053	18,208	15,639	15,793	na
Suriname	2,661	2,637	2,183	1,840	1,648
Barbados	905	986	862	861	962
St.Vincent	105	102	89	71	77
Pork,					
DR	13,199	15,674	15,876	17,962	18,966
T&T	2,614	3,222	1,790	2,320	1,974
Guyana	900	600	1,100	500	500
Jamaica	4,740	5,926	7,047	7,247	na
Suriname	1,976	1,450	1,400	920	796
Barbados	1,871	2,018	1,890	1,688	1,928
St.Vincent	40	43	39	36	26
Poultry,					
DR	158,124	184,477	188,741	141,522	142,883
T&T	26,460	24,602	29,872	26,463	30,051
Guyana	1,500	3,100	4,100	6,200	7,300
Jamaica	53,436	42,469	44,000	44,946	na
Suriname	9,563	8,800	6,760	3,935	3,800
Barbados	10,072	8,825	8,740	10,151	10,651
Milk'000 ltrs.					
DR	369,000	369,000	372,000	359,514	373,895
T&T	11,391	10,538	9,162	9,069	6,951
Guyana	38,641	39,096	40,005	27,276	na
Jamaica	27,000	na	na	na	na
Suriname	10,590	12,000	10,000	11,500	16,700
Barbados	14,253	14,813	7,668	7,297	7,869

Source: National Statistics

Poultry: Within the livestock sub-sector, poultry is by far, the most widely produced and consumed meat product in the region. Poultry rearing has also experienced the most rapid growth, particularly in the DR, Trinidad & Tobago, Jamaica and Barbados. In spite of the industry's apparent dynamism, annual output over the 1991-1995 was variable. In a few countries, such as Trinidad & Tobago and Jamaica, this may have been partially associated with the implementation of trade liberalisation measures which facilitated easier access to relatively less expensive imports of poultry parts. In Guyana, the strong growth in poultry production from 1992 was facilitated by the granting of import concessions on intermediate inputs to local poultry producers. Poultry production in Jamaica expanded in 1995 in spite of a decline in the overall livestock industry. This expansion was led by a 4.2% increase in output of the two main processors and growth in the small poultry farming segment. Poultry output in Suriname declined steadily over the 1991-1995 period.

Beef & Milk

Beef and milk production among regional producers satisfies a very small proportion of domestic demand for most Caribbean countries. The two countries which are exceptions to this were the DR and Guyana. As indicated, beef production in the DR generally increased, while production in Guyana fluctuated widely. Beef production in Jamaica and Barbados remained relatively constant over the period, compared to a general decline in beef production in Suriname and St.Vincent. Overall, the relatively slower growth in beef production compared to poultry is due to the higher price of beef compared to poultry meat. Relative price differentials also explains the greater demand for imported beef vis-a-vis domestic production,

Apart from the major problem of animal feed availability, problems common to beef production in the Caribbean countries are mainly related to lack of genetic testing and selection, lack of performance testing grade standards, market access constraints both intra-regionally and to third country markets

and the underdeveloped nature and poor certification of slaughter house facilities.

While milk production in the DR, Guyana and Suriname remained relatively constant over the 1991-1995 period, output in Trinidad & Tobago and Barbados declined throughout. For Guyana, the strong performance in milk production can largely be attributed to the efforts of the National Dairy Development Programme (NDDP) in improving stocks through artificial insemination and the provision of improved pastures. Local production satisfies approximately 60% of domestic milk consumption in Guyana. The deteriorating performance of milk production in Trinidad & Tobago was partially associated with a reduction in output from the State Lands Development Project (SLDP), rising prices of imported inputs and competition from cheaper imported products. These factors were also partially responsible for the decline in the level of milk production in Barbados between 1993-1995. Output during this period was approximately half that produced in the 1991-1992 period.

Among the OECS countries, St.Lucia may be regarded as the largest milk producer. However, the development of the industry has proceeded at a slow pace. In 1994, output from the St.Lucia Livestock Development Company (SLDC) reached to an estimated 9% of the country's total requirement of milk. This increase was attributable to an increase in the average daily milk production from 600 quarts to 689 quarts. While growth of 12.6% was recorded in 1995, St.Lucia's milk production continues to be constrained by the high cost of production associated in part, with the high cost of imported animal feed.

Pork: Pork production also exhibited variable performance over the 1991-1995 period, with declining output in Guyana and Trinidad & Tobago. In both countries, foreign exchange instability contributed to sharp increases in the cost of animal feeds. Animal feed accounts for approximately 60% of total production costs therefore this increase in costs resulted in the closure or scaling-down of operations of a large number of pig farms in these countries. Pork production in Jamaica, which averaged 5,000 kgs between 1991-1992, expanded from 1993, stimulated in part by the establishment of a new processing facility. During the first half of the 1990s, the pork industry in Jamaica continued to benefit from government protection in the form of import restrictions on whole carcasses. In Barbados, following two consecutive years of decline, the recovery of production in 1995 was associated with the general recovery of the non-sugar agricultural sector.

Fish

Although the fisheries sub-sector has assumed increasing importance in many countries of the Region, in most countries, the industry continues to be dominated by small scale fisheries operations. A few Caribbean countries have developed a fisheries export sector based on shrimp, prawn, flying fish and shell fish (mainly lobster). Apart from marine fisheries, aquaculture is a fast developing industry in some countries (Belize, Suriname and Jamaica). Over the 1980s and early 1990s, the emphasis has been on tilapia and prawns. However in recent years, there has been a shift towards the production of other varieties as well.

The data on fish production do not fully cover the volume of fish catches among the Caribbean countries (Table 16). However, they provide an indication of the growth in landings over the 1991-1995 period. Shrimping (both sea and inland) constitutes the most important fisheries activity in Suriname and account for approximately 15-20% of total fish catches. In Suriname, the

Table 16

Fisheries Production, Selected Countries

'000kgs	1991	1992	1993	1994	1995
Guyana	4,250	4,310	4,310	na	5,400
Jamaica (inland)	3,000	3,000	3,000	3,000	na
Suriname	10,817	16,314	12,531	8,502	na
Barbados	2,273	2,820	4,262	3,043	3,286
St.Lucia	1,039	959	1,114	883	983
St.Vincent	418	306	351	383	224

Source: National Statistics

decline in total fisheries from 1993 was led by a 28% decline in fish catches and slight decline in salt water shrimp catches. In Guyana, fisheries production increased only marginally over the same period, due mainly to stagnation in deep sea fishing activities, particularly that of fin-fish. There was also a decline in prawn output.

Notwithstanding the lack of fish landing data for Trinidad & Tobago, fish production averaged 7,000-10,000mt per year. Estimates for 1992 indicate fish landings of 14,977mt in Trinidad and 5,174mt in Tobago. In value terms, shrimp fisheries has emerged as an important fishery industry in Trinidad & Tobago.

The level of fisheries activity in the OECS countries is low and highly variable. In spite of developmental activities aimed at modernising the industry, fishing activity continues to be largely artisanal. As a result, the marine fisheries resources remain under-exploited. The lack of fish storage and processing facilities continue to be constraints to fisheries development in the OECS.

The slow development of the fisheries sub-sector in the Caribbean generally, is associated with the continued dominance of small-scale and subsistence type fisheries, the limited financial and human resources and limited institutional capacity for research and management in many countries of the Region.[14] This sector is heterogeneous, the resource base not well defined and management practices deficient in most countries. Consequently, the evidence on species stock suggest a declining trend and the catches by artisanal fishermen have declined substantially in many instances. Redressing these shortcomings will continue to be critical for Caribbean countries. In an attempt to accelerate fisheries development in the region, CARICOM's RTP for agriculture maintains as one of its objectives the optimal utilization of the marine fishery resources using sustainable harvesting and optimal post-harvest techniques.

Agro-Processing

The development of a vibrant agro-industrial base is of vital importance to the expansion and diversification of the Caribbean agricultural sector. As such, great emphasis has been placed in recent years on establishing and strengthening linkages between primary agricultural production and associated processing industries with a view to maximising the use of the agricultural resource base and facilitating the sustained growth and development of the agricultural and industrial sectors. [15]

The Caribbean has not capitalised on the vast potential for agro-industrial development due to a number of limiting factors. This despite the stated policy objective of most national development plans to generate closer integration of agricultural production and processing. The range of agricultural processed products is limited both in terms of product variety and in the level of processing. The processing of rum, coconut oil and tobacco products constitute the most long standing agro-industrial activities in the Caribbean. While the economic viability of the coconut oils industry has deteriorated somewhat, the rum and tobacco industries continue to perform fairly well.

Rum: Caribbean rums have exhibited bullish growth due largely to the preferential access afforded to the EU market under Protocol 6 of the Lomé Convention, the US market under the Caribbean Basin Initiative (CBI) and the Canadian market under CARIBCAN. Rum is an important export from Jamaica, Trinidad & Tobago, Barbados and Guyana (Table 17).

[14] Report in the ACP-EU Fisheries Research Initiative, Presentation to the CARICOM Secretariat Regional Planners Forum and Meeting of Officials Preparatory to the 20th Meeting of the SCMA. Georgetown Guyana, April 1997.

[15] Project Proposal for "The Design and Promotion of Agro-Industrial Investment Profiles and Support Measures" CARICOM, February 1995.

Table 17

Rum & Other Alcoholic Beverage Production & Exports

Selected Countries	1991	1992	1993	1994	1995
T&T					
Alcoholic Bev Exports, US$M	15.4	15.3	17.8	24.8	16.3
Jamaica,					
Rum Exports, US$M	15.4	17.1	21.6	21.0	23.6
Guyana					
Rum*Exports, US$M	2.6	7.0	9.3	11.5	3.9
Barbados					
Rum Exports, US$M	2.4	9.3	7.7	7.1	9.5

* includes neutral spirits
Source: National Statistics

Among the CARICOM countries, Jamaica is the leading rum exporter, with export values increasing almost two-fold over the period, from US$13.4m in 1991 to US$24m in 1995. Barbados, the second largest CARICOM exporter, experienced a similar increase in rum exports. The 65% reduction in the value of rum exports for Guyana in 1995 is largely due to partial reporting (rum export was recorded for only the first half of 1995). As the decade progresses, the CARICOM rum industry will be subject to increasing competition, the result of an agreement between the EU and the US to accelerate the elimination of tariffs on distilled spirits by the Year 2000.

Other Agro-Industry

Apart from the relatively large scale production of sugar, rum, coconut-oil, tobacco products and citrus juices, other agro-industrial activity has concentrated on small-medium scale processing of a variety of jams/jellies/marmalades, candied/preserved fruit, juices/nectar/pulps/concentrates, ice-cream/yogurt/wine and other fermented products as well as spices and sauces. These products are marketed within the specific country, regionally and internationally in decreasing importance. Inconsistent quality, irregular and expensive domestic supplies have been a major limiting factor to the development of linkages between primary agricultural production and the manufacturing sector. As a result, the tendency towards imported intermediate inputs has reduced the value-added from these agro-enterprises.

In Trinidad & Tobago and Barbados in particular, the production of ice-cream/yogurt based on local supplies of dairy and fruit products has emerged as a force (sunrise) agricultural-based industry. Much of the local ice-creams and yogurt continue to be consumed domestically, in the tourist industry and in the region. Recently (1997), however, ice-cream exports from Trinidad and Tobago have successfully penetrated the North American market.

In Haiti, agro-industry is based on sugar, cotton, tobacco, coconut-oil and beverage manufacturing. Most of these industries were developed in the 1970s for import substitution. These industries catered largely to the needs of the high income bracket of the population. With the notable exception of flour production, this segment of the agro-industrial sector has been less dynamic than export manufacturing. The long period of political instability contributed to a significant contraction in agro-industrial activity between 1991-1994.

The agro-industrial sector in Guyana and the OECS countries continues to be small and dominated by fruit and juice processing. While most of the OECS countries traditionally produce their own brand of rum, within recent times, beer and malt production has been added to the range of alcoholic beverages produced. The production of bottled mineral water, animal feed and flour is also a more recent feature in the Windward islands. In St.Vincent and Grenada the animal feed and flour industries are based almost exclusively on the imported raw material (wheat, rice, corn and soya bean).

While the data presented in Table 18 do not permit inter-country comparison, they provide an indication of the level and trend in agro-industrial activity (broadly defined as food, beverages and tobacco) in Jamaica, Trinidad & Tobago, Barbados and St.Lucia during the first half of the 1990s. The data indicate variable performance, due in part, to the reduction and/or removal of input subsidies, rising production costs (particularly meat processing) and increased competition.

Table. 18

Indicators of Agro-Industrial Performance, Selected Countries

		1991	1992	1993	1994	1995
T&T -Index 1977=100	wght					
Food Processing	82	128.2	128.4	119.6	117.0	123.7
Beverages & Tobacco	50	119.5	110.7	105.5	108.4	107.8
Barbados -Index1982=100	wght					
Food Processing	156	125.3	119.2	119.7	123.3	128.4
Beverages & Tobacco	97	122.3	117.4	129.3	138.0	140.6
Jamaica, real growth (%)	%					
Food Processing		-1.6	-8.5	1.2	-3.2	7.6
Alcoholic Beverages		-12.2	3.9	-0.7	-7.3	-8.8
Non-Alcoholic Beverages		-12.3	-2.5	4.9	14.2	-12.1
Tobacco		-11.5	1.5	-5.5	-4.2	1.2
St.Lucia, EC$M	EC					
Fruit/Veg. Processing	$M	18.7	18.3	21.4	14.1	9.2
Beverages & Tobacco		31.9	25.9	28.7	30.9	38.2

Source: Individual country statistics.

Several of the larger agro-industrial firms in the Caribbean have entered into joint venture arrangements with some multinational corporation, producing a variety of brand name agri-food products under license. There are major concerns that as the level of tariffs are reduced, the profitability of domestic production will also be reduced. This raises the possibility that increasingly, many of the firms now engaged in production will become distributors and product representatives for imports. The negative implications for employment are obvious.

Small-scale agro-processors have experienced mixed success. While the small size of their establishment increases their adjustment flexibility, the high dependence on local raw materials makes these establishments extremely vulnerable to supply inconsistencies and input price fluctuations.

In the Caribbean, the factors which affect the demand for processed agricultural products have been identified as the small domestic market, the variable level of tourist activity and preferences towards fresh products and to basic food staples in rural areas. In addition, since only a few countries have established special organisations to promote agricultural investment and development, this deficiency constitutes a serious impediment to the development of the agro-processing sector.✦

Agri-Business Development

With the notable exception of Trinidad & Tobago, Jamaica, the DR, Barbados and to a lesser extent Guyana, there is a general lack of a dynamic agri-business sector in many member states. This deficiency is largely attributed to the high degree of risk involved in agricultural-based activities. This situation has persisted, due, in part, to the lack of and/or high cost of credit for agriculture and the general lack of agricultural insurance. Inappropriate macro-economic policies, manifested in a general anti-agricultural bias in the incentives structure, also contributed to the unwillingness of the private sector to invest in agri-business.

The private sector has exercised increasing caution in relation to agricultural related investment. This behaviour is reflective of the increased uncertainty regarding market liberalisation. Despite this, there has been a resurgence of interest in agri-business, particularly among the more developed countries of the region, as evidenced by an increase in the numbers of agro-industrial firms and the range of agro-products available.

In spite of this interest, there remain few private sector organisations akin to the Chambers of Industry and Commerce, or Manufacturers Associations which represent the interests of the regional agricultural

sector. The Agri-Business Council of Jamaica and the Dominican Agroenterprise Board (JAD) in the DR are notable exceptions. In spite of the existence of various government/externally supported national, sub-regional and regional organisations, there continues to be a dire need for coordination in the Caribbean agri-business sector. Efforts towards the formation of a Caribbean Agri-Business Association are expected to greatly enhance the direction and pace of agricultural development in the region.[16] ✦

Constraints to Caribbean Agriculture

The preceding discussion strongly suggests a generally disappointing performance of the Caribbean agriculture sector. This situation derives from a host of constraining factors, few of which are within the control of many Caribbean countries. Natural disasters (such as floods, drought, hurricanes), pest and disease infestation and praedial larceny result in insecure control of output, which contributes to the high annual variability in output levels. A range of constraints to the development of the agri-food sector have been identified. These may be summarised as follows:

1. Inappropriate Policy Environment
   - poor planning, evaluation and implementation of agricultural and trade policies;
   - weak inter-sectoral linkages between agricultural production and agro-industry and agriculture and other sectors of the economy;
   - overall low national capabilities and lack of an integrated regional planning and monitoring mechanism;
   - the lack of a harmonized system of policies across CARICOM countries, capable of engendering trade and investment in a competitive manner;
   - market regimes which have insulated the economies of many CARICOM countries from the international market forces

2. Weak Institutional Framework
   - an inadequate data base on regional agriculture despite improvement in recent years, to permit efficient planning and programming;
   - fragmented, inadequate and high cost of institutional support services, particularly in the areas marketing, research, training and reduced incentives in the sector;
   - inadequate and deteriorating physical infrastructure;
   - low levels of private sector investment in agriculture due to the high cost of money and absence of risk-mitigating facilities such as insurance, market guarantees, compensation and preadial larceny;
   - an aging population of farmers (averaging over 45 years in several countries) and a negative perception of farming as an occupation;

3. Declining Productivity and Competitiveness
   - the wide variation and fragility of the natural resource base, economic infrastructure and level of development among the countries;
   - small domestic and regional markets;
   - low levels of human capital, inadequate technology
   - declining agricultural production and productivity since the 1960s versus increasing consumption due to population growth and expansion in tourism;
   - a reduction in performance of traditional export crops due to declining production and falling real prices and a propensity to gear production for preferential market quotas;
   - slow progress towards agricultural diversification and difficulty in competing in both domestic and export markets;

[16] More information may be obtained from the Agri-Business Programme, IICA Trinidad & Tobago Office.

- deterioration in stock of capital and under-utilization of improved technologies to modernize the sector ;
- inadequate marketing and transportation facilities for trade in agricultural commodities;

In most Caribbean countries, geological constraints impose relatively high costs for the development of agricultural resources. However, in most instances, the application of science and technology can significantly reduce these disadvantages. The fact that geological constraints continue to be a major hindrance to the development of the resource base is reflective of the slow rate of technological progress in the region. In this regard, the synopsis cited in IICA's AGRIFORUM is instructive. The Caribbean agricultural sector is characterised as....

"....not broken out of the cultural and technical mould inherited from the Green Revolution. Irrigation, agrochemicals, mechanisation and improved seeds continue to be the distinguishing characteristics of a system of agriculture still referred to as modern". The intensification of agricultural activity has been based on a combination of technical-productive elements, such as, the use of fertilisers and pesticides, the use of high-yield, pest and disease-resistant crop varieties, prioritising farming on irrigated lands and the mechanisation of farming practices. [17]

This situation is evidenced by the increasing trend in agro-chemical, machinery and equipment imports into the region. The use of agro-chemicals, particularly fertilisers, has intensified in order to increase yields and output from highly degraded soils. Misuse of these chemicals has in some instances, irreversibly damaged ecosystems and has led to the emergence of a new breed of pesticide resistant pests.

However, the general tendency in the region towards curative, as opposed to preventative pest and disease control programmes (based on effective plant quarantine systems) has led to high costs and losses. Such was the case as experienced by Grenada with the Pink Mealy Bug and more recently (1997), with the frog hopper infestation in Trinidad and Tobago. Quite recently, the Caribbean has begun to place greater emphasis on the use of integrated pest management as a more cost-effective, sustainable and environmentally friendly method for controlling pests and diseases.

Typically, the bulk of technology transfer was undertaken by regional public sector organisations, such as the Caribbean Agricultural Development Institute (CARDI), the Food and Agriculture Institute (FAO) and IICA, with support from international institutions and to a limited extent, the private sector. National research capabilities remain limited. Because of the constraints faced by the Region in keeping kept abreast of and accessing recent advances, most technologies which are currently used in the Caribbean are essentially inefficient. The situation is further exacerbated by the general decline in the already low levels of expenditure (both public and private domestic and foreign) in R&D. This decline was partially a result of the general decline in aid financing as well as the structural adjustment programmes undertaken by most Caribbean countries beginning in the mid-1980s. Of great significance however, has been the growing dominance of private agro-chemical companies, multinational corporations and industrial farms in spearheading research, such as bio-engineering. The changeover in ownership/control of research will have far reaching implications regarding access to technological advances, particularly so within the context of the Trade Related Intellectual Property Rights Agreement of the WTO.

Institutional deficiencies are manifest by the weak service and structural support to agriculture, particularly in post-harvest and storage, and transportation facilities, a

[17] Extracted from "AGRIFORUM - Towards an Agenda for Agriculture in the Americas" IICA Headquarters, Costa Rica (August 1997).

problem common to most Caribbean countries. Public-sector provided farm and access roads, irrigation systems and post-harvest facilities are generally poorly managed and in various stages of deterioration. Resource limitations have precluded their rehabilitation and/or replacement. This has also contributed to a reduction in productive capacity and an increase in production costs. Outside of public sector support, there has been limited involvement of the private sector in the provision of services and the maintenance of infrastructure facilities, mainly in commercial poultry, meat and dairy farming.

The arrangements for agricultural commodity marketing have tended to be uncoordinated, particularly in relation to domestic marketing. The distribution of fresh produce in domestic markets is generally dominated by small green grocers, roadside vendors and vending through public facilities. In many instances, the exports of surplus domestic production on the regional market is undertaken by a large number of small, disorganised traders (referred to as hucksters, higglers, etc.). These small traders are highly under-capitalised and capable of moving only small volumes. Distribution through this network continues to be confronted by numerous problems, including lack of reliable and inadequate storage facilities on existing vessels and virtually no forms of compensation facilities for loss of goods. The lack of adequate risk-mitigating facilities, such as insurance (income and revenue) and market guarantees is a serious problems confronting the non-traditional agricultural sector in particular.

For most Caribbean countries, there exists two types of exporting firms: the traditional commodity exporters and a few big exporters of non-traditional commodities. However, there is an emerging group of agri-business firms whose products are tailored to the demands of the international market. While this group is still small, over the last 3-5 years, it has shown tremendous promise. This group of agri-business firms are very much in evidence in countries like Trinidad & Tobago and Jamaica and to some extent, Guyana and Barbados. In many instances, several of the constraints to exporting agricultural products in extra-regional markets believed to be insurmountable, such as transportation, have already been addressed by these firms. In terms of certification and market access, firms in this group have led all others in ISO 9000 and 14,000 certification as well as in certification under the HASSOP programme. This notwithstanding, there is a widening gap between these firms which typically reside in the Caribbean countries which are integrating at a faster pace with the global economy and other firms in the slower integrating Caribbean countries. This has already exacerbated the dualism in the agricultural marketing system.

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Caribbean Agriculture ~ Prospects

International Environment

The economies of Caribbean countries are highly open and will continue to be increasingly influenced by the rapid pace of globalisation and trade liberalisation which has been a feature of the 1990s. The pace of economic integration and globalisation demands, inter-alia, that countries keep abreast of major emerging trends on the global commodity market. The dynamics of the international environment has also been extended to agricultural trade, which, prior to 1994, was very heavily regulated by regional, hemispheric and international agreements. The 1986-1994 Uruguay Round marked the first time in the history of the GATT negotiations, that agriculture was not insulated from the general principles of free trade.

The Uruguay Round of the GATT negotiations sought to reduce the distortions in international trade of agricultural products - distortions arising from government intervention and support for agriculture. The main elements of the Agreements which impact agriculture are as follows:

Market Access: this agreement requires the conversion of all non-tariff border measures, such as import quotas, to tariffs which provide the same protection (a process called tariffication). Tariffication is to be followed by a reduction in all tariffs by 24%. Provision is also made for the institution of a minimum-access tariff quota, initially set at 3%, to increase to 5% at the end of the implementation period. However, under the agreement, countries are allowed to include special arrangements in their minimum access commitment and to allocate their minimum access to exporters with special arrangements, such as with the EU and sugar. Special safeguard provisions have also been included for tariffied products that "will allow additional duties to be applied in cases where shipments priced in domestic currencies fall below a certain trigger or in the case of import surges. This introduces, at least, the possibility of new protective measures being used in agriculture which may represent a weakness of the agreement.

Domestic Support: This agreement requires countries to reduce the level of expenditures on domestic agricultural support measures which distort genuine trade (referred to as amber box aggregate measures of support (AMS)), by 13.3% over the implementation period. Amber box measures include acreage payments, certain subsidised loan programmes, input subsidies and price supports.

Export Subsidies: Countries are committed to reduce the value of direct export subsidies by 21% and to reduce the volume of subsidised exports by 14% over the implementation period. Developing countries are exempted from commitments on marketing of agricultural exports or internal transport subsidies.

Sanitary & Phyto-Sanitary (SPS) Agreement: this agreement covers food safety and animal, plant and health regulations. The agreement stipulates that the use of these measures should only be in instances where human, animal or plant life or health is threatened. Although negotiations towards the development of a globally accepted code of standards are still ongoing, Caribbean countries are encouraged to base their national SPS measures on international standards, guidelines and recommendations; higher standards may only be imposed if there is scientific justification.

The Decisions on Measures Concerning the Possible Negative Effects of the Reform Programme on LDCs and NFIDCs seek to ensure that these countries are not disadvantaged in terms of higher food prices. The provision of food aid and basic food

stuffs provided in full grant form constitutes the key elements of these Decisions.

While agricultural trade liberalisation may have inherently had negative impacts on some developing countries, overall trade in agricultural products is expected to expand. For agri-food producers, tariff reductions and the elimination of quantitative restrictions may impact positively on their production costs, particularly as its lowers the cost of imported inputs. While lower costs of imported inputs is one element in enhancing commodity competitiveness, other factors, such as increased productivity, fruit quality and commodity marketing improvements are equally important in enhancing competitiveness.

Caribbean countries will require assistance in developing the legal framework and in undertaking reciprocal trade responsibilities under the WTO. However, in addition to the scarce resources limitations, the slow pace of WTO implementation also reflects the concerns of Caribbean countries with import competition, particularly from products which continue to benefit from domestic supports and export subsidies. The present lack of a legal framework and/or monitoring capacity to address incidents of dumping and unfair trade practices significantly contributes to these factors. Most Caribbean countries have made little progress towards the implementation of commitments under the WTO, due in part, to the significant institutional requirements.

Paragraph included ⇒

Commodity Markets[21]

The dominant trends in world commodity markets reflect the changes in the global context particularly over the last 15 years. Specifically, these trends relate to the changing patterns of production, food sourcing, distribution and consumption. The following section summarises the dominant trends for the Caribbean's main export commodities.

❑ **Sugar.**

Sugar continues to be one of the most highly protected agricultural products. In keeping with the commitments of the WTO Agreements, quotas on sugar exports are to be converted to tariffs, which are to be gradually reduced. Within this context, prospects for the continued growth of the Caribbean sugar industry under a liberalised regime will depend on the success of efforts to the Caribbean sugar industry to compete in the global market.

World sugar production in 1997 was projected to have a shortfall of approximately 2 million mt. However, the long-term projections suggest eventual convergence of international prices towards the actual costs of production. Such convergence will arise as a consequence of increased local and international market interaction and the reduction in government intervention in commodity markets. Prices will also be increasingly influenced by the tendency of private interest towards minimal inventories. This low stock/use ratio would inevitably imply tighter supplies and higher prices. While the emerging sugar market is expected to be more efficient, some instability in domestic markets will occur as they adjust to external price signals and freer trade. While much of this market dynamism is occurring in the US, similar tendencies are being experienced in Europe. Sugar prices on the UK market are also expected to adjust downwards as a result of the EU's commitments to tariff reductions of 3.3% per annum to 2001.

For Caribbean sugar producers, the outcome will be a gradual decline in sugar export prices. For the DR, the conditions on its main market (US), appear favourable in spite of the minor projected increase in US domestic production capabilities. However, shortfalls

[21] Information for the main export crops extracted from the USDA's "Situation and Outlook Forum'96 Proceedings", February, 1996 and 1997; CARICOM's "Marketing Developments Relating to the Major Commodities" March 1997; Caribbean Basin Regional Profile 1998 Report.

in sugar production in the DR will require importation in order to supply its domestic market requirements. CARICOM sugar exports to the UK are expected to proceed fairly smoothly while the current EU sugar regime remains in force (up to June, 2001).

In the immediate future, major issues of concern for the CARICOM-Caribbean countries in particular relate to the almost complete elimination of the Uruguay Round regional premium and preference protection of EU sugar by the year 2001 and benefiting from US quota reallocations during periods of shortfalls. Country allocations are based on historical trade to the US. Haiti and St.Kitts & Nevis were included in the allocation as minimum quota-holding countries. The 1998 US Tariff Rate allocation quota for raw cane sugar for the Caribbean was established as follows:

Barbados	7,830mt
Dominican Republic	12,305mt
Guyana	13,424mt
Haiti	7,258mt
Jamaica	12,305mt
St.Kitts & Nevis	7,258mt
Trinidad & Tobago	7,830mt

The dynamics of the US and EU sugar markets, the expected increase in world sugar production and the move towards freer trade present significant challenges to Caribbean sugar exporters. This notwithstanding, the competitive position of most Caribbean sugar producers will be strengthened if they are able to increase production and processing efficiency.

❑ **Banana**

In 1995, world imports of bananas totaled 10.6mt, valued at over US$5.3 billion. Although per capita banana imports have risen over the last 10 years, real prices have generally declined due to an overall increase in world production and competition from other fresh fruits. In the absence of unanticipated shortfalls in world production (due to natural disasters in the main producing zones, such as the El Niño weather phenomenon) world banana production will continue to outstrip demand. Recent projections by the FAO indicate a 650,000mt oversupply of bananas by 1999 assuming a 3% per annum growth in world demand. Ecuador is forecast to produce over 4 million mt. of bananas in 1999.[22] This situation is expected to keep prices closer in line with actual production costs. However, the FAO reveals that lower world prices for bananas overshadow the projected increase in volume sales. This situation is partly due to surplus output in major producing countries as well as the fact that consumers in developed markets are paying comparatively less for bananas.

Conditions are also expected to intensify on the UK market in the aftermath of the 1997 WTO's ruling against the EU Banana Regime as well as due to an over-supply situation in the EEC due to the third country quota allocations and increased supplies from Spain. Consequently, growth and revenue prospects for banana are not anticipated to improve significantly in 1998/1999.

The WTO Panel ruling upheld the United States, Guatemala, Honduras and Mexico complaint that the existing regulations under the EU New Banana Regime are discriminatory and restrictive, violating free trade rules. In fact, the final report stipulated that the NBR violated free trade on 19 counts. This decision signals an acceleration of the UK banana market liberalisation in advance of the guaranteed market protection to the year 2002. In September 1997, the EU adopted the WTO's rulings and by October, had undertaken to change its licensing regime. It is anticipated that the EU will be allowed until the end of 1998 to complete the reform. To date an alternative agreeable to the EU and its complainants, and which simultaneously preserves some form or preferential access for ACP countries is yet to be developed.

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[22] "Banana exporters test their resolve in boom-bust China", Asia Fruit, September-October, 1997.

Since the early 1990s, Caribbean banana exporters have been attempting to adjust to increased competition and lower prices. In addition, more stringent demands for higher quality fruit has reduced the competitiveness of Caribbean bananas on the UK market. In the short-term, production and exports of Caribbean bananas, particularly by Windward islands producers, will decline somewhat as the industry undertakes the required adjustments. The impact of the WTO decision is already evident in the Windward islands as many producers have abandoned production in reaction to the increased market uncertainty and reduced prices. In an attempt to forestall further unplanned exit from the industry, the Windward Islands Banana Growers Associations urgently embarked on industry restructuring programmes, including field rehabilitation, productivity improvements and fruit quality enhancement programmes.

Some adjustment assistance and debt relief has been provided by the EU and other international donors. The debt relief is expected to allow producers to allocate more of their resources towards working capital. In mid-1997, the EU allocated approximately US$165 million to assist banana-producing countries in the region. An important element of this programme of assistance is the establishment of a core group of efficient banana growers capable of competing in a liberalised market by the year 2000 and the introduction of a certified grower programme. Hopefully, the outcome of these adjustments may be a "leaner" more efficient industry (or industry downsizing). Properly managed, the long-run impact of these adjustments will be positive in improving the industry's competitiveness and survival prospects. Although in the short-run banana production and exports in Jamaica will be affected by the WTO decision, the gradual adjustment processes of the industry initiated since the late-1980s will undoubtedly enhance that country's banana industry's post-WTO survival prospects.

❑ **Rice**

World rice production and consumption are projected to rise gradually, each by about 1% per annum between 1995-2005. Rice trade, in particular, is projected to grow at 1.4% per annum between the 1995/96-2005/06 marketing period. Global import growth will be fueled by population growth and strong per capita income growth in China, Indonesia, the Middle East, Central America and the Caribbean.[23] Although nominal rice prices are projected to rise, real prices will tend to fall.

Rice trade is dominated by the long grain (or indica) varieties. However, trade in the medium-grain (or japonica) rice has gained momentum. Historically, rice trade and prices have exhibited greater volatility than those of other grains. This volatility is driven by weather conditions (dependence on many large producers and traders on rainfall during the Asian monsoon season) and by the fact that annual trade in rice accounts for a mere 5% share of world rice production.[24]

For the Caribbean producers, conditions on the EC market is of the most immediate interest. This is particularly so following the 1992 decision to accord industrial and processed agricultural products of ACP countries preferential access to the EEC market via the Overseas Countries and Territories (OCT) arrangement. Petitions filed against this arrangement by the relatively high-cost rice producers in Italy and Spain have resulted in the introduction of safeguard measures in respect on the importation of rice into the EU from the OCTs.

As of January, 1997, rice imports via the OCT route were restricted to 42,650 tons. In the first instance, these restrictions were to run for a four month period (January 1 to April

23 USDA's "Situation and Outlook Forum'96 Proceedings" 1996 and 1997.

24 Agricultural Baseline Projections to 2005, Reflecting the 1996 Farm Act, USDA World Agricultural Outlook Board (1996).

30, 1997), subject to adjustment. The low quotas allocated to the Caribbean OCTs, ie., the Turks and Caicos (1328 tons) and Montserrat (4594 tons), were estimated to be below the commercially viable operational capacity for these mills. This will no doubt, affect their ability to continue to receive rice exports from Guyana and Suriname. In addition to the low quotas, the administrative and licensing procedures imposed further restrictions in the form of an upper limit of 1,000 tons per application and per origin for import licenses.

The CARICOM Secretariat has indicated that the short-term impact of these safeguard measures on Guyana and Suriname's rice exports were profoundly negative. However, the long-run benefits will be increased price stability in the European market. As a result of the safeguard mechanisms imposed, direct rice exports to the EU could become relatively more attractive, particularly when the levy is reduced by 15% as is expected. Thus, as rice industries in Guyana and Suriname resume direct shipments to the EU, it is likely that the export of rice will become less reliant on the increasingly regulated OCT route.

Prospects for the rice industry over the next 10-year period were viewed as positive by the CARICOM rice industry. The industry projects an increase in current traded volumes of 4% to 10-20% over the next five years. Given the industry's competitors, ie,. subsidised US production, there remains an urgent need to retool the industry in order to enhance its future competitiveness. This retooling will involve the upgrading of production systems and quality improvement programmes.[25]

❑ **Coconut/Copra-Oils**

The decline in the regional coconut-oils industry is in large measure, linked to the reduction in demand for its by-products (particularly in the food industry). Domestic factors, such as lack of raw materials and relatively high production costs of coconut derivatives also contributed to the industry's deteriorating competitiveness. With the liberalisation of agricultural trade, coconut is one commodity which will suffer from competition from low-cost soya and other vegetable oils.

The current unfavourable situation in the coconut oil industry is expected to continue as the decade progresses. In spite of the apparent demand for refined coconut oil both in regional and extra-regional markets (Canada, US, Egypt and the UK), the significantly reduced size of the domestic industries constrains their ability to take advantage of these market prospects.

Many of the Caribbean coconut oil producers will experience difficulties in revitalising their industries. For most farmers in the region, coconut harvesting for oil extraction no longer represents a viable activity. Given the changing consumption patterns away from coconut-oil food products and the increasing popularity of coconut water, the industry's prospects appear to lie more in the bottled fresh/frozen coconut water product. The technology to extend the shelf life of coconut water exists and has been successfully tested in a few Caribbean countries.

Other prospects for integrated coconut-based industries include the manufacture of coconut meal in animal feed industries and the production of fibre. At the national level, these options may be more appropriate at the cottage industry level providing gainful employment in rural communities thus contributing to the development of the rural sector. It must be noted, however, that their establishment should be guided primarily on analysis which shows that such cottage industries are economically viable and sustainable. Regional specialisation of the industry should also be explored as alternative option, particularly as it relates to

[25] Based on comments made by a representative of the CARICOM Rice Industry during a sub-regional IICA workshop on Global Market Integration and the Agricultural sector, June 1996, Trinidad & Tobago.

economies of scale considerations. However, the general problem of lack of private sector investment in agriculture may constrain the establishment of a bottled coconut water processing facility as well as these (cottage) coconut product cottage industries.

❑ **Coffee and Cocoa**

Over the last 10 years, coffee and cocoa world market prices have trended downwards. This resulted, in part, from:

- expansion in cultivation induced by the 1970s commodity price boom;
- higher production of perennial crops by lower cost Asian producers;
- the collapse of the International Coffee Agreement in 1989, greatly influenced by market speculation in addition to weather and politics.

In the absence of unanticipated shortfalls in world production (due to natural disasters in the main producing zones, such as the drought-induced damage to one-third of Brazil's coffee-bearing forests in 1993, and the effects of the El Niño weather phenomenon), the overall outlook for beverage crop exports is considered to be relatively flat, with generally stagnant demand in traditional markets for these commodities.

- **Coffee:**

World coffee production in the 1996/97 season was estimated at just over 100 million bags and was expected to rise to 110 million bags in 1997/98. World coffee consumption has also expanded, particularly in non-traditional consuming countries. Estimates are that the growth market for coffee consumption over the next decade will be Eastern Europe, China, Japan, and coffee producing nations as North America and Western Europe markets are reaching maturity.

The trend is towards consumption of milder Arabica coffees in major importing countries. In the EU, which now accounts for almost 45% of total world coffee imports, mild arabica coffees in particular (mostly from Colombia and Central America) have gained substantial market share. In addition, the specialty and decaffeinated market segments have exhibited rapid growth fueled by the renewed popularity of specialty stores and from high income elasticity of demand for "gourmet" coffees. Decaffeinated coffee accounts for approximately 30% of the US coffee market. However, the existing decaffeinating processes are expensive and tend to reduce quality. Biotechnology, aimed at the production of naturally caffeine-free coffee plants, is being employed to effectively address the loss-of-quality problem.[26] This research is being pioneered in the Hawaii Agriculture Research Centre which hopes to produce caffeine-free trees within a few years. The full integration of this technology in production systems has the potential to undoubtedly, revolutionise world coffee consumption patterns.

As a result of these emerging trends, it appears that the potential for raising international prices for traditional coffee is limited. This holds far reaching implications for Caribbean coffee producers, particularly since their production base constitutes the Robusta and/or Liberica varieties. Most countries, however, have implemented programmes to expand their production base of the Arabica variety. Given the time required for maturity of coffee trees and the relatively demanding requirements for entry into markets for value-added products Caribbean producers, including Jamaica, will need to emphasise productivity improvements assistance and cost-efficient production and marketing systems in order to maintain their market shares.

- **Cocoa:**

World cocoa consumption has also increased. Non-traditional consuming countries, such as Japan and China, have also begun to prepare and manufacture chocolate products.

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[26] "Genetic engineering for a naturally caffeine-free coffee" published in CBAG-PBAG Research Notes, summer'97.

The cocoa market is differentiated by the "fine (aroma) flavour", basic flavour (raw cocoa used as a base material for chocolate) and a blend between the two. Fine flavour cocoa (as produced in the Caribbean), is used mainly in the making of dark chocolate and for solid chocolate slabs, and not for chocolate coating.[27] At present, it is estimated that fine flavour cocoa accounts for less than 5% of world cocoa consumption, the rest, being basic cocoa produced by several countries.

Although fine flavour cocoa is not usually used in large-scale production, changes in the world chocolate industry may impact fine flavour cocoa market segment. Specifically, these trends are:

- the tendency towards the production of more standardised and bulk products for which fine flavoured cocoa is an expensive input;
- the replacement of chocolate in processing with "filled" products such as chestnuts, rice, caramel candy flavours etc., which have a slight influence on the volume of chocolate used; and
- pressures to harmonise the 5% allowance of the use of Cocoa Butter Equivalents (CBE) in the production of chocolate. If successful, this could result in a downward pressure on international prices, in spite of continued growth in demand.

The Caribbean is a relatively high cost, producer of fine flavour cocoa. In addition, the productive capacity of the Region's major producers has declined. Various efforts since the mid-to-late 1980s to reverse this deterioration in cocoa production have achieved mixed success in some countries. Given that prices for raw cocoa are not projected to increase, Caribbean cocoa producers should explore the possibilities of entering into the high-value end of production, such as the manufacture of high quality specialty cocoa products.

❑ Spices

The global spice trade is small, yet not insignificant and has undergone major changes in the past few years. The food industry and food service sectors now account for nearly 60% of the spice trade in developed countries and the household sector has been relegated to second place. Retail pack sales are either diminishing, or at best, flat. This change has been reflected by increasing sales of ready-to-eat foods, with consumers turning to more ethnic cuisines and spicy foods (mainly, pepper, chili, ginger and mustard). These trends have led food processing companies in industrialised countries to increase the use and reliance on spices to create new flavours that are essential to expanding their business.[28]

Since the 1980s and the early 1990s, on a volume and value basis, the US consistently represents the world's largest spice importer, with imports of more than 40 primary types of spices annually. Between 1990-1994, spice imports represented 6.4% of total non-competitive agricultural imports. US imports of ginger, in particular, have been growing fairly steadily with uses in the bakery, food and beverage industries. Jamaica is well known for its high quality peeled ginger and is among the leading suppliers to the US market.

Excluding pepper, which is the largest component in the spice trade, the prices of most spices have not risen in the last decade and a half. Price instability is expected to continue in the 1997/98 period since under the Article 4.2 of the Agriculture Agreement and Article 11 of the Agreement on Safeguards, spice producing countries will no longer be able to resort to minimum export

[27] Information extracted from presentations made at an IICA Caribbean/Latin America Workshop on the Marketing of Fine Flavour Cocoa, (09/97), Trinidad &Tobago.

[28] "International spice marketing and the Uruguay Round Agreements" T. Nandakumar, in ITC International Trade FORUM, (1/1997) pages 18-27; and "The Spice Market in the United States - Recent Developments and Prospects", USDA.

prices and voluntary export restraint or to form cartels and associations for the purpose of imposing such measures.

In general, substantial growth in global consumption and therefore trade in spices will depend on development of non-traditional applications. For the US, the outlook is continued strong growth in imports of spices, including nutmeg, pimento, curry, cinnamon and mace. According to ITC, with the conclusion of the GATT 1994 Agreement, spice producing countries are expected to benefit from increased opportunities in trade in processed agricultural products containing spices as well as increased foreign direct investment in value-adding activities (such as grinding, blending and packaging). To effectively take advantage of these opportunities, however, Caribbean spice producers will need to adopt more scientific post-harvest and processing technologies.

❑ **Citrus:**

Most of the world's citrus supplies are produced in the Southern Hemisphere, primarily Latin America (Brazil and Argentina). Israel and Florida are major suppliers of oranges as well as grapefruit. This strong geographical concentration of production zones is matched by similar specialisation, with Brazil producing mainly oranges for frozen concentrated juice (80-90% of production). In the US, about 92% of all Florida-grown oranges and about 50% of total grapefruit production is for juicing. California grapefruit (both white and red seedless), is sold fresh.

Over the past decade, Brazil has significantly expanded its citrus production capacity. This was a direct outcome of the severe reduction in US citrus production between 1962-1997 which led to massive US investments in Brazil, and to a lesser extent, in Mexico. However, since 1992, the US has made significant recovery in citrus production, contributing to a record world production level of 80 million tons being achieved in 1995/96. Indications are that the US will revert to its position of net-exporter of orange juice, a situation which will adversely affect major exporters to the US market. This trend may also encourage a shift in citrus exports towards the European market.

The European citrus market has experienced a continuous increase in per capita consumption of juice (particularly orange), as opposed to fresh fruit consumption. This preference may be attributable to the demand for convenience foods, easier storage of juice than of fresh fruit and a general increase in the consumption of fruit juices as a substitute for other beverages.

The world scenario for citrus in the medium to long term was forecast as follows:

- increased world production due to increased capacity of new producer countries, such as Mexico, new pockets of growth in Eastern Europe and strong demand in Asia and Western Europe.
- fall or leveling off of world prices at a fairly low level;
- the crowding out of Brazilian products from the US market as a result of increased domestic production and imports from Mexico:

Since the mid-1980s, the Caribbean has occupied a small and declining position in the citrus market in both the US and EU. Current Caribbean production levels are insignificant in comparison to production from US, Brazil and Mexico. The opportunities for Caribbean citrus products in the international citrus market therefore appear limited. The fact that most regional citrus juice processors import a significant proportion of the raw material requirements, is also indicative of the uncompetitiveness of citrus production in the region. As Caribbean countries continue to reduce tariff levels, this reliance on intermediate sourcing from the US and other countries seems set to continue.

❑ Non-Traditional Fruits[29]

The international juice market represents one of the most important sectors of the global agribusiness market. Developing country suppliers (mainly Brazil) share 50% of international trade (ITC, 1992). In addition, the market for non-traditional fruit has shifted towards pulps, segments and purees. Dehydrated tropical fruits (in the form of pre-packaged cubes, slices, wedges or chips) are also becoming increasingly popular among the health conscious population. US supplies of such products are currently met by Thailand and the Phillipines, with increasing imports from Central America.

While the global demand for fruit juice should continue to grow significantly over the next 10 years, competition from temperate fruit juices (berries, apples) is likely to increase. In the US and Canada, fruit consumption is reported to be stable, with limited interest in tropical fruits. Fruit imports are from traditional suppliers, with strict phytosanitary barriers and high transport costs being the major limiting factors to US market access for newcomers. However, in Europe, total non-citrus fruit imports have diminished slightly since 1992. Imports of selected fruits, mainly guava, pineapple, paw paw, mangosteen, mango and avocado have experienced sharp increases.

- **Mango**

  In 1991, mango was the fifth most important fruit in the world in terms of volume, ahead of pineapple, yet far behind citrus, grape and bananas. In 1992, mango was dubbed Europe's fourth main tropical fruit.[30] India is the leading producer among the developing countries, producing approximately 10 million tons corresponding to 60% of world production. Mexico, Pakistan and Thailand are also important mango producers. The only developed country producers of any importance are the US and Australia.

  The US import market is by the far, the largest and most dynamic (Mexico with an 83% share), with the EC, the second largest. Mango imports in both the EU and US have increased. In fact, US imports have doubled in five years, with demand increasing by 15%-20% per year. The fruit is still, however, consumed by only one in three American households. The best known varieties are "Tommy Atkins", "Haden", "Kent" and "Keitt".

- **Avocado**

  Avocado is one of the most popular tropical fruits in the US and California is a major producer, exporter and importer of the Hass variety. The EU is the second largest market, absorbing 3 out of every 4 world avocado imports. In 1995, total domestic consumption in the US and EU was estimated at 186,000 and 140,000 tons, respectively. Chile and Mexico are the leading suppliers to the US market, with EU supplies met from Spain (major domestic supplier), Mexico and South Africa. In spite of increased domestic supplies (from Spain) avocado imports of non-EU origin increased from 61,000 to 106,000 tons between 1988-1995.

  The FAO forecasts world avocado production to exceed 2 million tons, with expansion in Mexico far exceeding that in any other major producing country. Between 1993 and 1995, global avocado trade was estimated to have increased by 30%, and continued movements are predicted to be fairly stable.

  The partial opening of the US market for avocado in 1997, is expected to alter the pattern, but not volume of global avocado trade. Since Mexico alone can satisfy the US market, there is the real possibility of the "crowding out" of other

[29] Information on market behaviour and trends in non-traditional tropical fruits extracted from various issues of Fruitrop, Publication of CIRAD-FLHOR, 1995-1997 issues.

[30] *Fruitrop*, September 1992, CIRAD-IFRA.

countries, including the DR. However the shift of Mexican exports from Europe to the US may offer increased opportunities for other exporters on the EU market.

The Caribbean region has not reported any significant growth in the area of non-traditional fruit exports. This stands in marked contrast to the performance of the Central American region which has made substantive inroads into the US markets and some expansion into Europe. Refrigerated banana boats have been used as the main vehicle for the export of non-traditional fruits, particularly melons. The take-off of the non-traditional exports to Europe was facilitated by the extension of preferential treatment to non-traditional agricultural products from Central America under its Generalized System of Preferences scheme, effective January 1, 1997. In spite of the fact that Caribbean countries already had such privileged access to the EU for its commodity exports, only a very limited number of agricultural commodities can claim to have achieved moderate success in their export performance.

Numerous opportunities abound for Caribbean exporters of non-traditional fruits. However, many of these advantages are for pre-packaged, higher value products, such as purees, pulps, segments etc. In addition, the relatively small scale of production in the Caribbean may be more appropriate to micro-niches. The key to successful exporting of non-traditional fruits, therefore rests ultimately, on the development of these niche markets, including the gourmet food industry, for high-valued products.

❑ Cotton

Until recently, China was the world's largest cotton producer and processor. In 1995, however, China reverted to being a net cotton importer. In 1996, global cotton exports fell, following 10 consecutive years of flat global demand and smaller imports by China. In terms of global production, the combined cotton production of Caribbean producers is negligible. In spite of this, global trends in cotton consumption and production will have a deciding influence on the industry's prospects as the decade progresses. The USDA identifies the following distinct trends regarding cotton's role in the world fibre market to the year 2000.[31]

- trade in raw cotton, in particular, is expected to gradually lose market share to processed cotton due to its (raw cotton) inability to compete with man-made fibres (MMF), particularly polyester. Cotton's fortunes will depend on establishing itself as a premium fibre, not a bulk product for the masses;
- technical developments in cotton fibre characteristics, quality identification and preservation, high speed processing and new product development will play an even more important role in the future;
- strong indications of a continued shift in cotton spinning, fabric formation and garment assembly from the more developed to lesser developed regions (except in the case of the US).
- wider swings in cotton production will occur worldwide in the next 10 years due to more intense competition with food crops.

The world cotton outlook suggests a weakening import demand in China, with a downward trend in cotton use in traditional high-income importing countries such as Japan (the Caribbean's primary cotton importer). In the post-1996 period, declining cotton prices, coupled with strong production of competing crop prices (such as wheat, corn, soya bean), will act as a disincentive to expanding cotton production area in most of the foreign producing countries. In fact, it is projected that these factors will result in a decrease in cotton production in countries such as Paraguay, India and Turkey.

[31] Agricultural Outlook Forum '97 - Speech Booklet 3, "Cotton Forum.

While cotton consumption continues to be strong in the Western Hemisphere, elsewhere in the world, growth in textile demand is increasingly being met by manmade fibre. This current scenario suggests that global cotton production will continue to outstrip consumption, albeit by a smaller margin. In the long-run, the liberalisation of textile trade under the GATT/WTO and the increasing use of manmade fibers will also constrain cotton imports by the most developed traditional importers, such as the EU and Japan.

❑ **Cut Flowers**

World flower production has experienced tremendous growth over the past 4 decades and now totals 6 billion dollars (3 billion alone for the cut flower industry). Markets continue to be concentrated in Europe, North America and Japan. Growth in per capita consumption of flower products in these markets is expected to continue. Producing countries and the range of products have diversified significantly. A few countries, such as Holland, Israel and Columbia, have been producing flowers for export since the 1960s, with new production centres located in Mexico, Spain, Italy, Central and South Africa, Australia, New Zealand and South-East Asia. The world flower and green leaf market has grown by 5% and 10%, respectively, in the last ten years, a growth which analysts predict will continue over the next five years.

More specifically, the tropical flower market has not experienced the same dynamism and has yet to firmly establish itself in the American and European markets. Besides the limited interest of Western consumers for these products, the commercialisation of tropical flowers necessitates particular attention and specialised equipment in order to maintain the market quality of tropical cut flowers. [32]

The small size and limited varieties of Caribbean cut flowers offers opportunities for penetrating niche and specialists markets. However, the structural constraints confronting Caribbean cut flower producers limits their ability to expand the industry and to effectively compete internationally.

❑ **Rum**

The 1996/97 conclusion of an agreement between the US and EU regarding the acceleration of tariffs phase outs for distilled spirits by the year 2000 represented a significant threat to the Caribbean rum industry. This agreement was described as a shock to the Caribbean rum industry, since in its present structure, the industry is not prepared for increased competition from US suppliers. A longer implementation schedule would allow the industry to engage in product development, specifically, the development of new brands and a new industry market image.

After much negotiations, the so-called EU-US Zero for Zero Agreement on the treatment of rum in the context of the EU/US Initiative to eliminate tariffs on White Spirits was favourably resolved in early 1997. The most fundamental element of the agreement was the establishment of a price break which would provide for the exemption of lower cost rum from coverage under the agreement arrived at in Singapore. From July 1 1997 the EU and the US agreed to subject rum to reduced duty rates within the tariff quota amounts until duty free treatment is reached on 1 January 2003. The EC also agreed to promptly inform the US of any changes between 1 January, 2000 and 1 January 2003 in the preferential treatment accorded to its imports of rum.

Caribbean rum exports will continue to benefit from duty-free access to the US market after the year 2000 under the CBI. The EU has also assured Caribbean rum exports that tariffs and quotas would not be imposed on ACP rum after the year 2000. The

[32] Extracted from "Development of the Flower Industry in Grenada (Lesser Antilles)", by C. Coutin (IICA/FMTC Competitiveness Study), 1997.

Caribbean rum industry's attention is now focused on post-Lomé strategy negotiations.

Caribbean rum products have developed a reputation in the world spirits markets due to the consistently high quality and the exotic nature of the Caribbean region. Rum is a good example of a well marketed Caribbean product with growth potential. Further product development as well as vigorous market campaigns should ensure the continued success in global markets. However, increased production efficiency will go a long way in enhancing the product's competitiveness. Development plans for the rum industry beyond a 5-10 year period should be guided by an assessment of the implications of the potential spread of the US anti-tobacco lobby to the alcohol industry. This possibility may pose a threat to the long-term growth potential for rum.[33]

Domestic Food Production[34]

Making general statements about the domestic food production and demand situation in the Caribbean is not possible, nor is it advisable. However, a feature of the domestic food production sub-sector in the Caribbean which can be generalised is that domestic markets for food commodities continue to be very informal. In most cases, the current production of many indigenous fruit and food commodities can supply the domestic markets without the development of commercial production systems or formal market structures. This observation is readily supported by trade data which indicate that fresh (tropical) fruit and food crop are the most widely produced in significant volumes and constitute the vast majority of exports mainly to the US and British Virgin islands as well as extra-regionally. In addition, despite of the relatively small number of commercial acreage of non-citrus fruits, the domestic market for fresh fruit is seasonally glutted with supplies of mango, avocado and other indigenous fruits, particularly in Trinidad & Tobago, Jamaica, the DR, Guyana and the Windward Islands.

A similar situation exists with the supply of root crops, breadfruit and plantains. Given the "inferior good"[35] nature of food crops, most Caribbean domestic markets, particularly those which have experienced a general increase in income levels, such as in Trinidad & Tobago, Barbados, Jamaica and St.Lucia, are presently close to saturation. This partially explains the declining consumption levels for food staples. In Dominica, for example (which is considered under-populated and a relatively large producer of plantain), consumption was projected to decline at a more rapid rate than in St.Lucia, compared to a projected increase in plantain consumption in Jamaica. Against this backdrop, further expansion of plantain in Dominica will depend on the expansion of existing agro-processing facilities as well as growth in the export market. Similar inferences may be made in the case of sweet potato in Barbados and for the other root crops in most of the other countries. Ultimately, as income levels increase, domestic demand for staples will tend to decline, particularly if their production does not keep pace with the strong and dynamic consumer preference for consumer-friendly, or "ready-to-eat" foods.

For some vegetable and most livestock products, however, the importance of imports in fulfilling domestic demand is apparent from trade statistics. While most Caribbean countries have expanded their capacity to produce a range of vegetables, the productive capacity for legumes and higher-valued products, such as tomato, cauliflower, lettuce and broccoli, continues to lag behind

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33 From comments made by a representative of the CARICOM Secretariat during a sub-regional IICA workshop on Global Market Integration and the Agricultural sector, June 1996, Trinidad & Tobago.

34 This section draws heavily on the report "Current Food and Domestic Demand Situation in the Lesser Antilles", T.Taylor and P. Antoine (1998) previously cited in footnote # 13.

35 ie., consumption tends to decline as incomes increase

demand. This is evidenced by the continued increase in vegetable imports, fresh-chilled and canned in the 1990s, both for final consumption and as raw material in agro-processing. In some cases, the large increases in per capita consumption are associated with the dramatic increase in tourism experienced over the last decade. The adoption of greenhouse technology, particularly in tomato and lettuce production, and the possibilities for its expansion to other high-valued vegetable production, such as broccoli and cauliflower, augers well for enhancing the productive capacity of the region.

With the exception of table eggs, the degree to which domestic demand for livestock and fisheries products is satisfied by local production, varies significantly among the member countries. It is unlikely, that the Caribbean will become totally self-sufficient in livestock products. However, the emphasis placed on expanding the regional livestock sub-sector over the last two decades has yielded noticeable results, particularly in poultry and beef production mainly in the larger territories.

Livestock consumption is expected to increase and therefore, it is necessary to increase production. Poultry in particular, has experienced the highest increase in per capita consumption in the region, a trend which is expected to continue. This increase was also fueled by the phenomenal expansion of fast-food chains in the region. However, the continued vitality in the domestic livestock sub-sector, particularly poultry and dairy cattle, depends on improvements in genetic stock and in the reduction in production costs, particularly as relates to labour and imported animal feeds. Improved product quality and low cost locally produced meat products will enhance their ability to compete with similar imported products in the absence of government subsidies and import restrictions. Such improvements in the livestock sub-sector will have a more noticeable impact among the more developed countries, such as in a reduction in imported livestock products and an expansion in domestic capacity. For the smaller Caribbean countries of the OECS, they will continue to rely on imports to satisfy domestic demand for most categories of livestock products.

Agro-Industry

The development of an inherently dynamic agro-industrial subs-sector is a pre-condition for transformation and sustainability of Caribbean agriculture in all its dimensions. Caribbean countries, with few exceptions, have accorded insufficient attention to agri-food processing and agro-industrial development as compared to other countries in the Hemisphere. In contrast, the growth in fruit and vegetable processing industry in Central America in particular, has resulted in a major market for food processing industry in that region. The countries in the Latin American region are adding more value to their fresh produce exports through vertical integration, with growers developing ties with exporters, wholesalers and retailers to link different segments of the market.

Recently in the Caribbean, the transformation of primary agricultural products into processed foods has been increasing as a result of the promotion, though in varying degrees, of agro-industrial activity in several countries in the region. However, the linkage with primary agricultural production remains weak.[36] In many instances, raw and semi-processed material is exported for packaging and marketing by foreign firms, for re-export to the original supplier. This represents a significant loss in value-added and simultaneously limits the technological development of the producer.

More and more frequently, consumer demands are for ready-to-eat food products. This preference requires that most, if not all primary agricultural products, whether traded externally or consumed domestically,

[36] "Enhancing value-added in the Caribbean agri-food system" Patrick Antoine, IICA (1996).

must undergo some form of product transformation. The industrialisation of the agri-food sector will play a major role in the process of revitalisating Caribbean agriculture. Processed foods is one of the most dynamic and important market segments for generating greater value-added and employment opportunities for agriculture.

The industrialisation of agriculture also stands to benefit from globalisation through increased foreign trade, foreign investment and technological change in the food industry. The agro-processing sub-sector is thus well placed to take advantage of trade liberalsation. The trans-nationalisation of the food industry is a key element in the goal towards economic globalisation and the establishment of food consumption patterns and quality standards. According to the CARICOM/Mexico Agro-Industrial project, the prospects for improving the competitiveness of the CARICOM agro-industrial sector appear to be favourable, provided that adequate resources are dedicated towards infrastructure and cutting edge technology for production efficiency and the maintenance of macro-economic stability, including reform in the cost of capital, which will ultimately reduce the cost of equipment and inputs.[37]

O The Way Forward

Competitiveness in agriculture can be viewed as a dynamic economic concept inherent to globalisation, that takes into account the need to adjust to the macroeconomic environment, adapt to the astonishing pace of technological innovation and be flexible in terms of the requirements of sustainable and equitable development.[38]

For Caribbean countries, the challenge continues to be one of sustaining efficient traditional crop production while expanding into a more flexible, diverse agriculture. These countries are thus faced with the twin tasks for increasing productivity and competitiveness within a free trade environment while simultaneously keeping the adjustment costs relatively small so as to minimise the negative impact on resource constrained groups.

The compatibility among trade liberalisation, competitiveness and equity has been the subject of great debate both within and outside of the region. Without economic growth, capital inflows and greater technological development that generates more productive employment opportunities and greater value-added, it will be impossible to achieve more equitable social development.

Balanced and sustainable agricultural development must emphasise the production of a total commodity, which is appropriate and ready for any market outlet, rather than commodities differentiated between the domestic and export market. Within the world environment characterised by increased economic integration, consideration needs to be given to a coordinated approach to the production and marketing of Caribbean products. This can only be achieved through an appropriate mix of enabling policies, technological research and development, investment and continuous human resource development.

Policy decision making for Caribbean Agriculture should place priority on the following considerations in the design of an agricultural development strategy.

- An Enabling Policy Environment
  Macro-economic variables and economic adjustment processes have had a growing impact on agricultural performance in the Caribbean over the last decade and a half. Despite social repercussions,

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37 Report on the CARICOM/Mexico Agro-Industry Project, presented at the Regional Planners Forum and Meeting of Officials Preparatory to the 20th Meeting of the SCMA, Guyana, April, 1997.

38 AGRIFORUM - Towards an Agenda for Agriculture in the Americas, DIREXCOM, IICA Headquarters, Costa Rica, August, 1997.

adjustment processes are necessary in the agricultural sector and halting them could entail higher costs in the long run.

Combining new public policy for rural areas with current macro-economic policy is essential if agriculture is to be more competitive. The adverse effects of adjustment may be mitigated through policies which ensure rational spending of public resources on direct works that support the market rather than replace it. This strongly suggests an increased role of the private sector in all dimensions of the agricultural sector.

- Dynamic and Flexible Support Institutions
  Economic globalisation has been accompanied by a rapid transformation of the international institutional framework. Trade is now a major driver of production characterised by a growing dominance of the private sector. As a matter of urgency, the Caribbean should seek to ensure the evolution of an institutional framework characterised by an integrated and dynamic public and private sector partnership with the capacity to capitalise on strategic and tactical alliances for developing the sector.

  Attention needs to be placed on the reform/development of specialist institutions, such as relates to the provision of credit, insurance, market promotion, etc.

- Technology Generation
  No country can maintain leadership in industry unless its research can continue to innovate technology for improved efficiency.[39] Technologies are developed to enhance the exploitation of specific production areas, usually in the industrialised countries. Since different producing areas face different physical and ecological environments, technologies developed to the specifics of a particular region may not be appropriate to the Caribbean. In order to ensure continuous improvements in production efficiencies, establishment and effective operation of a Caribbean research centre for technology generation and transfer may be a pre-requisite for achieving and maintaining competitiveness and sustainability of the agricultural sector. Given the resource limitations of most countries of the Region, the only way to effect this may be to pool the Region's resources and to establish linkages with other Regions which are confronted with similar development problems. An important element in this goal is the provision of adequate resources for the continuous development of a scientific manpower.

- Human Resource Development
  Knowledge will become a fundamental factor of production. and investment in human resources will continue to be the basic driving force for technological and economic development. Education will accelerate the adoption of new techniques and will make national economies more productive.

  The role of high quality and timely education, which takes into account production and social requirements, cannot be understated. Training and investment in human resources, particularly in the rural areas are inextricably linked to the sector modernisation process, competitiveness and equity.

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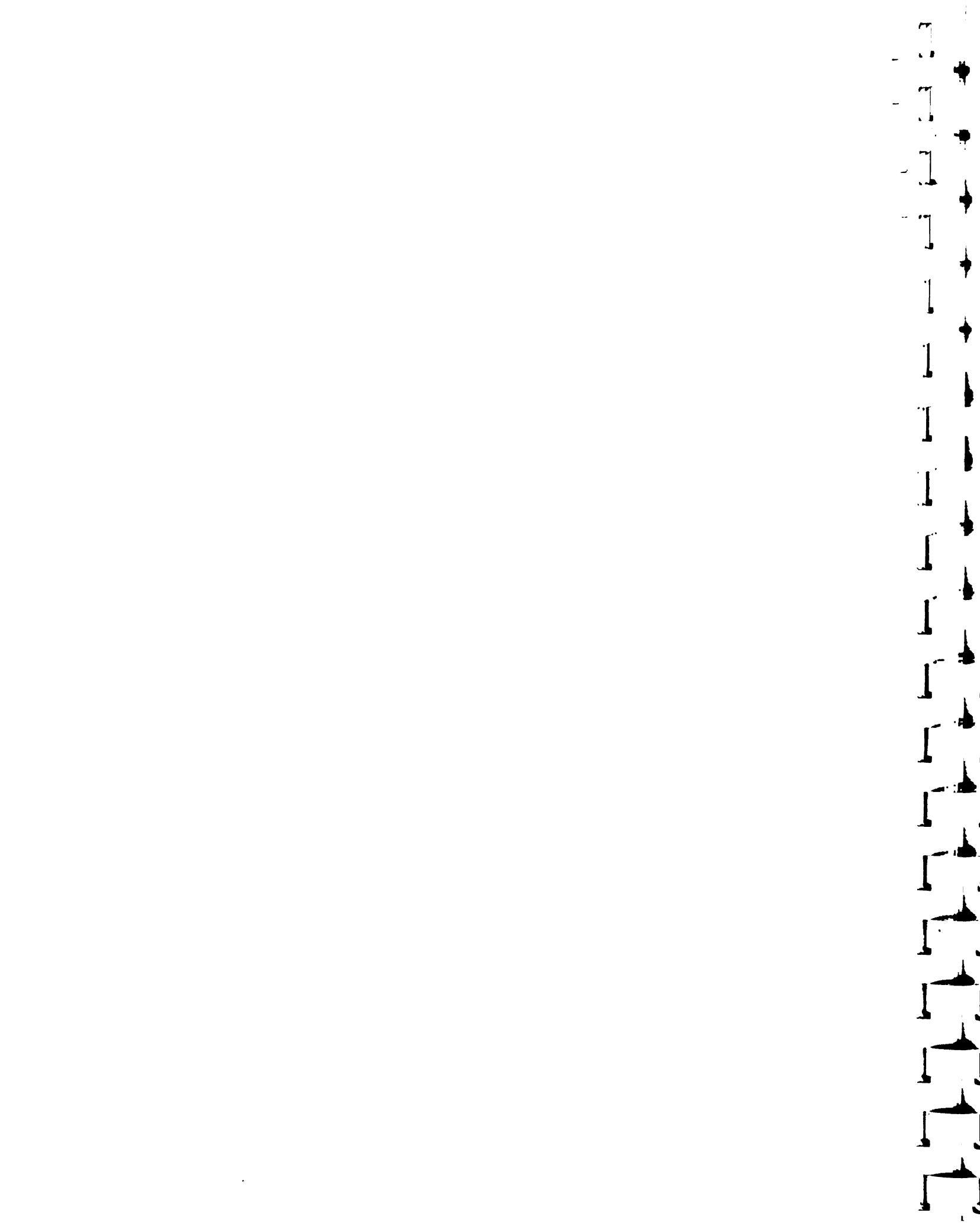
[39] Report on the CARICOM/Mexico Agro-Industry Project, presented at the Regional Planners Forum and Meeting of Officials Preparatory to the 20th Meeting of the SCMA, Guyana, April, 1997.



ANNEX: Statistical Tables

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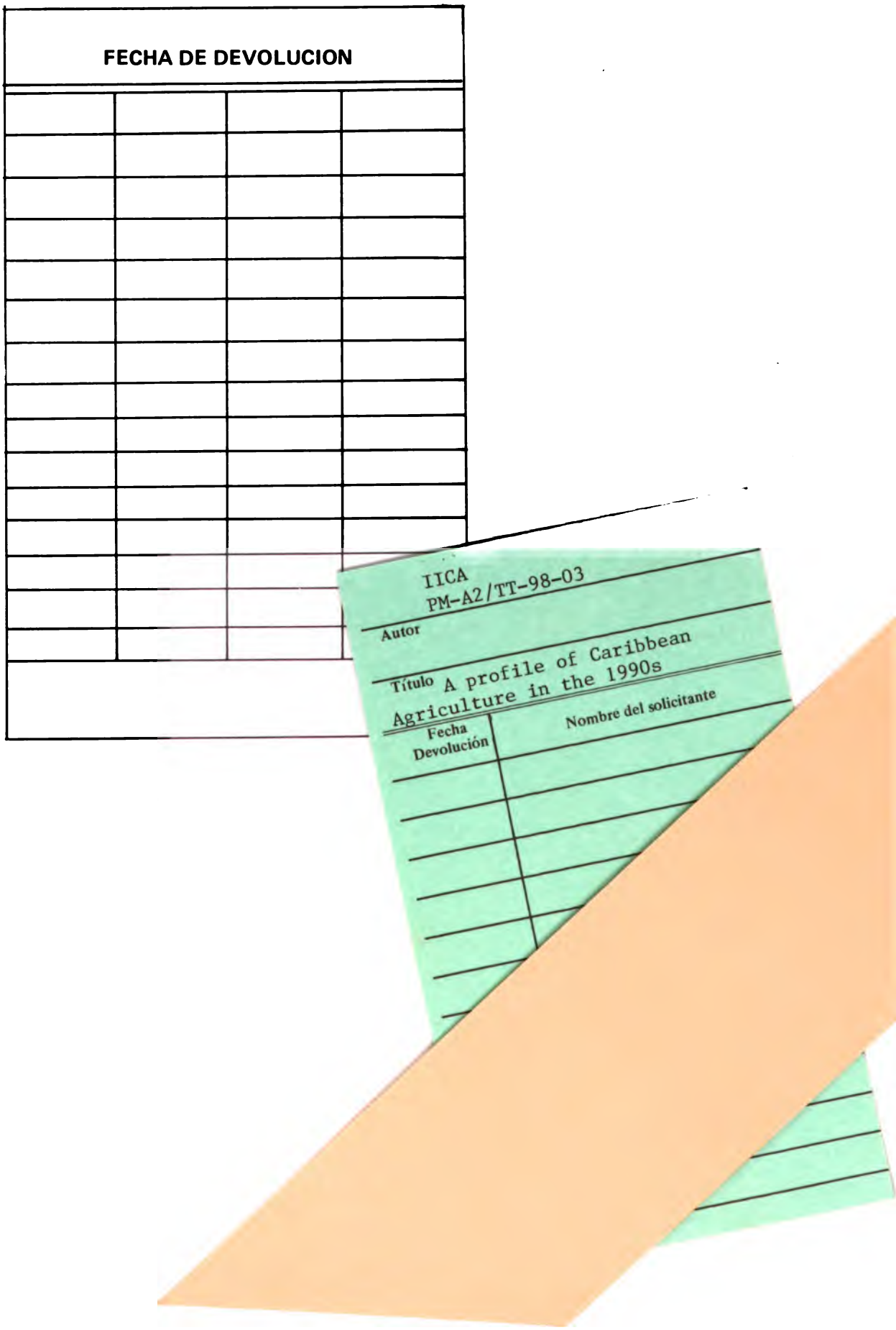
- Rice
- Coffee
- Cocoa
- Spices
- Cut Flowers

Table 7. Caribbean Countries Domestic Food Crop Production Volumes, 1991-1996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