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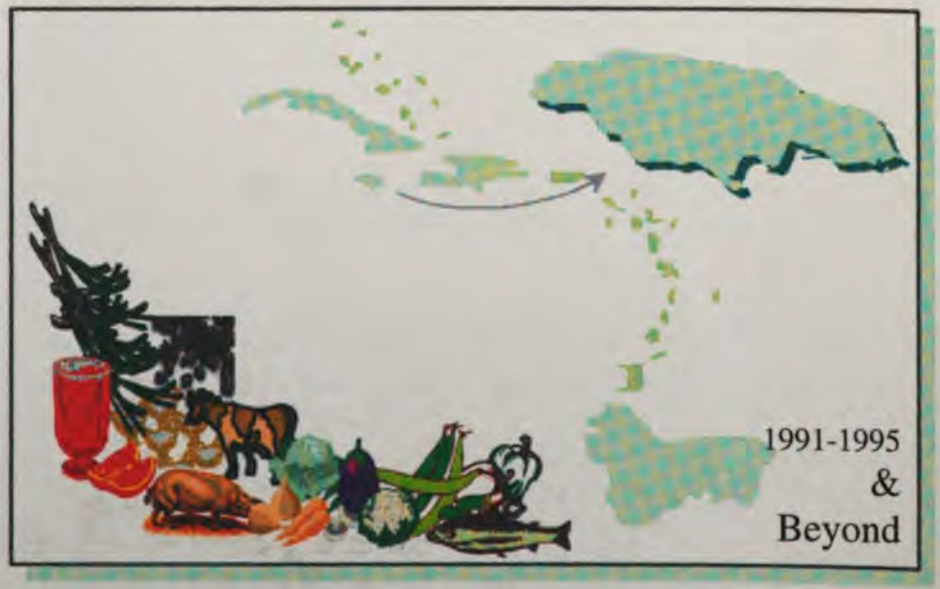
Caribbean Regional Centre

Agriculture in Jamaica



Preface

Mindful of its technical cooperation responsibilities, IICA identified the critical need for improved information on the agricultural sector of member countries to assist them to more rapidly integrate with the global marketplace. The identification of the challenges and opportunities for the agri-food sector of constituent member countries, along with the development of a compendium of the best available comparative statistics for agriculture, was identified as a starting point.

Carlos E. Aquino G.
Director General, IICA

Unlike many other countries of the Caribbean, the agricultural data collection and analysis information system in Jamaica is very well organised. Agricultural information and analyses are documented in annual reports of the Ministry of Agriculture, Bank of Jamaica and the Planning Institute of Jamaica. The information contained herein draws heavily on these national reports.

This working document represents one in a series of 13 working documents prepared for the IICA Caribbean member states, compiled for the specific purpose of preparing the document titled *"Performance and Prospects for Caribbean Agriculture'"*. The preparation of this working document constitutes another step towards the goal of improving access to information on the agricultural sector.

This working document was the result of the collaborative efforts of Mr. Michael Henry of the IICA Caribbean Regional Centre (CaRC) and the IICA Technical Cooperation Agency in Jamaica. The information and analysis are based on statistics and descriptive information extracted from the above mentioned national sources, as well as from reports generated by regional and international counterpart institutions. It is anticipated that the information will be useful, not only to individuals and institutions working in agricultural development in Jamaica, but also to other parties interested in information on the agricultural sector in general.

The guidance of Dr. Patrick Antoine Head, Socioeconomic Policy, Trade and Investment Programme in the preparation of this working document is acknowledged. This report would not have been possible without the full commitment of the IICA Director General, Carlos E. Aquino G. and the Caribbean Regional Centre (CaRC) Director, H. Arlington D. Chesney.

This exercise will be undertaken every two years. We welcome comments aimed at improving subsequent reports. All errors and omissions are the responsibility of the authors.

Working Document, # 8 of 13, December 1997
Socioeconomic Policy, Trade and Investment Programme

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Country Profile

Jamaica is located in the Caribbean Sea, 145 km. South of Cuba and 160 km. west of Haiti. The country has a total land area of 11,000 sq. km. and is the largest English-speaking Caribbean island. Jamaica is very mountainous in the interior with low coastal plains and scattered hills and plateaus. Approximately 25% of total land area is forested, 45% is cultivated with agricultural crops and 3.7% is classified as urban, industrial and other developed use. The climate varies from tropical and humid at sea level, to temperate in the mountain areas. Average temperatures in the coastal areas range from a low of 24°C in February to a high of 27°C in August. Rainfall is seasonal, averaging 85 inches per year, with marked regional variations.

The country lies within the hurricane belt and within the last decade has suffered millions of dollars worth of damage to infrastructure and crops from hurricane, particularly in 1988. The country is also prone to flooding during the rainy season. Jamaica is well endowed with agricultural land, wide expanses of tropical forests, abundant surface water and white sand beaches. In addition, rich marine resources facilitate both fisheries and tourism development. The country also possesses large deposits of bauxite and is one of the world's largest producers of bauxite and alumina.

Jamaica's 1995 population was estimated at 2.5 million, with growth averaging 1.1% per year since 1990. While the population is fairly evenly distributed between the urban and rural areas, there is a progressive tendency toward rural-to-urban drift.

Following the 1973-1980 economic recession, and subsequent adjustment in the first half of the 1980s, Jamaica experienced positive (albeit low) real GDP growth between 1990 and 1995. Growth in the economy averaged 1.8% over the period, and peaked at 1.5% in 1992, before declining to 0.5% in 1995. Tourism has become Jamaica's primary foreign exchange earner, with real annual growth averaging 1.7% between 1991-95. The manufacturing sector, which accounted for an average of 18.9% of real GDP between 1991-1995, contracted by 1% during 1995; the third consecutive year of decline. This may have been attributable to rising costs of production, industrial unrest, deteriorating infrastructure and increased competition from imports. Despite the decline in the growth rate of manufacturing for most of the 1991-95 period, this sector remains one of Jamaica's major productive sectors. In fact, this sector's contribution to real GDP exceeded that of agriculture for the entire 1991-95 period.

The contribution of the mining and quarrying sector, primarily bauxite, averaged 8.9% of real GDP between 1991-1995. Industrial action during the first half of 1995 was largely responsible for a 6.4% contraction that year. Following high growth of 12% per annum between 1992/93, real growth in the agricultural sector slowed to 2.2% in 1995; a continuation of the slowdown of 7.5% in 1994. In spite of this slowdown, at the end of 1995, agriculture contributed 8.1% of Jamaica's real GDP.

Even with an average investment level of 25% of GDP per year, GDP growth has remained low due to a significant portion of non-productive investment and variable growth in Jamaica's principal economic activities[1]. This notwithstanding, the economic prospects for Jamaica remain positive, particularly in light of growth-oriented developments in its key sectors. Real GDP growth was projected to increase gradually from 1% in 1995 to 2-3% thereafter.

Jamaica Economic Indicators

	1991	1992	1993	1994	1995[p]
J$-US$ Exchange	20.91	22.20	32.70	33.28	39.80
GDP, J$m@1986	17,487	17,749	18,000	18,135	18,226
Agriculture	1,078	1,219	1,352	1,443	1,474
Manufacturing	3,401	3,445	3,378	3,360	3,326
Mining /Quarrying	1,607	1,566	1,571	1,680	1,573
Other Industry	1,718	1,725	1,762	1,609	1,716
Hotels/restaurants	368	371	395	389	405
Fiscal Bal[1] US$M	1,123	2,145	1,217	(979)	697
Visible Trade Bal.	(4,24.3)	(4,039)	(8,14.3)	(639)	(1,342)
B.O.P. ()=increase	105.2	-337.2	-113.4	-337.5	-21.8
Ext. Debt (yr. End)	3,874	3,678	3,687	3,651	3,700

1. Fiscal Year Data; P- preliminary (nine months)
Source: Economic and Social Survey 1995.

[1] Trends in Developing Economies. World Bank, 1996

Agriculture in Jamaica - Sector Profile

Socio-Economic Role

Despite lagging behind the other sectors in terms of contribution to GDP, the agricultural sector plays a critical role in the economic development of Jamaica through its substantial contribution to foreign exchange earnings[2], the stabilization of rural welfare and the generation of employment opportunities. The sector contributed an average of 7.3% per annum of real GDP over the 1991-1995 period (Table 1). Broadly defined, Jamaica's agricultural sector includes the following sub-sectors: (a) export crops; (b) domestic crops; (c) livestock; (d) fisheries; (e) forestry. Among these sub-sectors, domestic crops, livestock and fisheries are considered the most critical for national food production requirements. Together they also constitute a large percentage of the agricultural sector's contribution to GDP. For example, in 1992, these three sub-sectors accounted for approximately J$3.7 billion at current prices or 64% of agriculture's share in GDP, whereas the export crop sub-sector accounted for an estimated J$781.9 million or 13.3%. Specifically, domestic crops accounted for the largest proportion of agricultural GDP, averaging almost two thirds of real agricultural GDP for the review period. In absolute terms however, export crops generated a much greater production value due to the significantly higher prices for these commodities compared with agricultural produce sold and consumed locally.

Table 1:
Jamaica: Composition of Agricultural GDP, Constant Prices

	1991	1992	1993	1994	1995
Total GDP $J M	17,487	17,749	18,000	18,135	18,226
Agriculture %	6.2	6.9	7.5	8.0	8.1
Export Agriculture	14.7	13.0	12.3	11.0	10.3
Domestic Agri.	60.4	65.4	68.2	71.4	72.0
Sugar Cane	10.2	8.5	8.2	7.0	6.4

Source: Economic and Social Survey, 1995; PIOJ

The agricultural sector has traditionally been the single largest employer of labour in the Jamaican economy. Over the period 1991-1995, the sector employed an average of 25.1% of the employed labour force (Table 2). Agriculture's share in employment, however, has dropped below this average since 1992. In fact, the reduction in the sector's employment share from 27.3% in 1992 to 24.4% in 1993, was significant since it marked the first time that agriculture had lost its place as the single largest employer of labour. This notwithstanding, the GDP data indicated an increase in agricultural output which implied some improvements in labour productivity in the sector over the period. This improved situation may be have been partially attributable to the divestment of government-owned agricultural entities such as, Victoria Banana Company.

Table 2
Jamaica, Agricultural Sector Employment

Agriculture (Fishing & Forestry)	# ('000) of Employees	% of Total
1991	243.7	26.9
1992	247.3	27.3
1993	220.8	24.4
1994	218.1	23.6
1995	223.3	23.2

Source: Compiled from various National Reports

In terms of its contribution to rural development, the agricultural sector plays a critical role in the economic survival of many rural communities. This is borne out by the fact that of the country's 2.5 million population , roughly 50% live in rural areas and rely heavily upon agricultural activities for their livelihood.

Given the rural makeup of much of Jamaica, and the high levels of unemployment and poverty, it is expected that the labour demanding agricultural enterprise will remain an important source of employment and potential for future export growth.

Jamaica's farming population is largely an aging one. Further, outside of the established plantation system, the typical farmer in Jamaica is primarily a subsistence farmer. He/she maintains a system of mixed cropping to minimize risks, utilizes a low level of inputs and are generally constrained by a number of serious problems such as inadequate land and lack of modern equipment and technology. Moreover,

[2] Between 1990-1994, the agricultural sector contributed an average of 10.42% of total foreign exchange earnings from the industrial sector

for farmers from rural communities who are unable to satisfy the lending criteria in the formal financial markets, the informal system represents the main source of credit.

Additionally, while large scale plantation crops for exports (such as sugarcane) have been grown on flat coastal plains, a wide range of annual crops (pulses, root crops and vegetables) and perennials (citrus, bananas, cocoa, coffee and pasture) have been cultivated on hillsides. In fact, hillsides account for 80% of Jamaica's land area and are predominantly farmed by small farmers. The typical farming system is said to comprise 7-8 annual crops, 2-3 perennial crops (usually grown in mixed stand) and some livestock. Food crops are mainly grown for subsistence purposes by the farm household with surplus sold to traders or private commodity associations.

Organizational Characteristics

While public sector involvement in Jamaica's agricultural sector development is still significant, the role of the private sector in this regard has increased considerably over the last decade and a half. This increased role for the private sector came as a result of the Structural Adjustment Programmes (SAPs) of the 1980s and the Agricultural Sector Adjustment Loan (ASAL) of 1990. The SAPs generally emphasized the spearheading of the agricultural recovery by the large scale commercial sector and downplayed the role of the small farmer (FAO 1995). This represented a major shift of emphasis from government-supported small farm agriculture to private sector based middle and large scale farms as the driving force of development. In fact, the general pattern has been the reduction of the role of public sector organizations by transferring their duties to more private sector oriented organizations.

For example, as part of its Divestment Programme, the Government, during 1993, completed the sale of Government owned sugar factories. The Frome, Monymusk and Bernard Lodge factories were sold to the Sugar Company of Jamaica, a new company born out of a partnership between local sugar companies, banking interests and foreign refineries. The sale of the factories and lease of the associated cane lands represented the completion of Phase I of the sugar divestment programme. Phase II included the lease of cane land to other farmers and the implementation of the deregulation programme. Similarly, in the banana industry, the government-owned Victoria Banana Company was also divested. Banana production is now dominated by large scale commercial enterprises with private sector investment. Three large private estates which cover over 2,000 hectares of land, account for 73% of total banana output. Bananas are also grown by a large number of small farmers mainly for local consumption. Private sector involvement in agricultural investment and production is thus seen as a crucial factor in spearheading Jamaica's agricultural modernization drive.

The overall aim of Jamaica's agricultural policy over the period was the modernization of agriculture through :

- the encouragement of private investment;
- increase in production and productivity;
- expansion of credit and agricultural infrastructure and;
- outreach and development activities.

The objectives were to improve competitiveness in export markets, encourage diversification into new export crops and reduce environmental degradation.

As a means of giving effect to the aims and objectives of its agricultural policy, the Government of Jamaica in 1989 developed a Five Year Agricultural Sector Plan (1990/91-1994/95). The broad objectives outlined in the Plan were to:

- increase and sustain the contribution of the agricultural sector to the economic growth of Jamaica.
- make a substantial contribution to meeting the food and nutrition requirements of the population.
- increase agricultural exports and foreign exchange earnings from agriculture and encourage agro-industrial development.
- foster the development of appropriate technology through research and development and to ensure the transfer of this technology to farmers.

- improve the quality of rural life by increasing farm income and developing rural infrastructure; and
- increase employment opportunities in agriculture and related activities so as to reduce unemployment, underemployment and stem rural-urban migration.

The programmes outlined in the plan were aimed at stimulating growth through the support of on-going successful strategies as well as the implementation of a number of new programmes. These programmes were developed based on the recognition of the constraints to sectoral growth identified as:

- the failure to exploit available land resources fully;
- the erratic production patterns and extremely low levels of productivity of both labour and capital;
- lack of proper natural resource management which resulted in increasing environmental degradation;
- inadequacy of credit, market infrastructure and information, research and other support facilities.

The Ministry of Agriculture is the foremost agricultural institution which manages, sets policies and guidelines and monitors the performance of the sector, including coordination for the development of Jamaica's Five Year Development Plan (1990-1995). Within the new economic framework, the MoA's role was redefined as one of facilitator, providing for an open market climate within which the private sector is expected to perform, with appropriate support when justified and possible. The MoA's direct involvement in agricultural production is intended to be selective and restricted to special cases e.g. demonstrating a new technology or introducing a new product.

The operations of the MoA have, however, been significantly affected by the SAP in general and the ASAL Agreement in particular. Almost all of the divisions of the Ministry have been reduced both from a budgetary and personnel standpoint. The share of the MoA in total government expenditure declined from 3.2% in 1990/91 to 2.2% in 1994/95 (Table 3).

Table 3
Government of Jamaica Expenditure on Agriculture

(J$M)	1990 /1991[1]	1991 /1992	1992 /1993	1993 /1994	1994 /1995
Total Expend.	8,842	13,018	20,381	29,997	40,269
% Agic. of Total	3.2	3.3	2.4	2.1	2.2
Expend. on Agriculture	283.0	435.5	495.8	627.8	873.3
Current	131.4	174.0	183.8	324.9	461.1
Capital	151.5	261.5	312.0	302.9	412.2

Source: Jamaica Estimate of Expenditure

Within this reduced share, however, for fiscal years 1993/94 and 1994/95, the MoA's current expenditure exceeded public capital expenditure in the sector. Some divisions have also been given greater autonomy (agricultural extension) while others have been privatized (clinical veterinary services). Agricultural extension services to farmers are currently provided by the Rural Agricultural Development Authority (RADA) which was established in 1990 as a means of resuscitating the governmental extension system. RADA has several units comprising training, communications, monitoring, evaluation, extension and marketing. As with the previous extension system, RADA is also affected by austerity measures. Public sector downsizing in 1992 resulted in 50% of the extension officers being redundant. The institution's effectiveness is constrained by the inadequacy of its budget which is used primarily for recurrent administrative expenditure leaving a negligible amount for assistance to farmers. More importantly, the institution is not supported by a technology development and problem-solving division.

One notable feature of the Jamaican agricultural sector is the existence of several commodity and farmers' organizations attending to specific crops which provide extension, marketing, research and development and financial support for farmers. Some of these organizations also produce seedlings, provide inputs such as tools, seeds, fertilizer, pesticides and other chemicals, provide transportation for farmers produce etc. While some of these organizations are statutory organizations, the bulk are private farmers' and other private organizations.

Additionally, regional and international agencies/institutions also play a critical role in

Jamaica's development, particularly with respect to R&D and sustainable agricultural and rural development projects.

In terms of agricultural credit, two major sources define Jamaica's agricultural credit system - formal and informal. The formal system includes agencies that provide credit for a large cross-section of agricultural sector activities, such as the Agricultural Credit Bank (ACB), People's Cooperative Bank (PCB), and approved financial institutions (AFIs). The AFIs are mainly commercial banks and some institutions such as the Jamaica Agricultural Development Foundation (JADF), which are so classified. On the other hand, the informal system relates to traditional informal credit providers such as moneylenders and shopkeepers. Also included within this system are agencies that are primarily commodity production organisations which extend credit as part of their production operation, such as the Sugarcane Credit Scheme, the Serge Island Dairy Credit Scheme, and the Best Dressed Chicken Credit Scheme.

The most important institution in the formal agricultural credit system is the ACB. Presently the ACB is the primary source of loan financing for the agricultural sector, providing credit to all potentially viable agricultural and agro-industrial enterprises including traditional export crops (such as banana, sugarcane, coffee and citrus), non-traditional export crops (such as vegetables, tubers and ornamental horticulture) as well as domestic food crops and livestock. The institution receives the majority of its funds from international donor agencies.

The informal system is the main source of credit for rural borrowers who have viable projects but do not satisfy the lending criteria in formal financial markets or perhaps might be excluded by high transaction costs. A diverse set of social arrangements is utilized as a means of accessing credit in the informal market. These involve multidimensional, enforceable contracts that are usually transparent or transferable to third party lenders or investors. Some lenders, specializing in a particular activity, offer credit to borrowers who utilize the lenders' superior production, processing and marketing systems for the activity in which they are both involved. There are instances where farmers involved in the dairy, poultry, tobacco and sugarcane industries have gained access to credit via these mechanisms. Credit is usually delivered as one component in a package of services, aimed at a specific economic activity that is delivered to a known group of farmers.

Agriculture in Jamaica ~ Performance Indicators, 1991-1995

Socio-Economic Performance

Between 1991-95 Jamaica's agricultural sector grew at an annual average rate of 6.5% per annum. In fact, 1995 marked the fourth consecutive year of positive real growth for the sector. Notwithstanding this favourable performance, there was a steady decline in the pace at which activity in the sector was expanding; annual growth declining from 13% in 1992 to 2.2% in 1995 (Table 4). This rapid deceleration in Jamaica's agricultural sector growth rate continued through to 1997, with the sector recording a negative growth rate of 14.6% in that year. This precipitous decline was mainly attributable to severe drought conditions during most of 1997, which affected planting activities as well as plant growth and development.

Table 4

Jamaica, Real Growth in GDP & Agriculture

(%)	1991	1992	1993	1994	1995
Real GDP Growth	0.8	1.5	1.4	0.8	0.5
Agriculture	-0.2	13.0	10.1	7.5	2.2
Export	-0.5	0.2	4.2	-3.9	-4.9
Domestic	0.7	22.3	14.8	12.6	3.0
Sugarcane	6.2	-6.4	6.2	-7.4	-6.9

Source: Social and Economic Survey of Jamaica 1995

The improved performance of Jamaica's agricultural sector over the review period 1991-1995, resulted mainly from the expanded production of the domestic food crop sub-sector whose production index increased by 65% between 1990 and 1995. On the other hand,

growth in the export agriculture sub-sector which exhibited great variability also showed an upward trend over the period, save for a brief decline in the production index in 1994.

In spite of the contribution of traditional and non-traditional export crops to agri-food sector foreign exchange earnings, Jamaica was a net-food importer for all of the review period (except 1992) (Table 5).

Table 5

Jamaica: Share of Food in Total Imports

(US$"000)	1991	1992	1993	1994	1995
Agri-Food Bal.	-7,639	338	-18,380	-32,481	-49,417
Agri-Food Imports	246,423	245,054	287,132	284,395	360,244
Food /total %	13.4	13.8	13.1	13.1	13.5
growth %	-	-0.15	17.2	-0.9	26.7

Source: Economic and Social Survey: Jamaica, 1995

The agri-commodity trade deficit, which was 168.9% higher in 1995 than in 1993, averaged US $21.5 million per year for the 1991-1995 period. The deterioration in the agri-food sector's trade balance over the period was due largely to the fact that agricultural imports either grew faster or declined slower than agricultural exports for the entire review period. While agri-food imports grew at an average rate of 10.7% between 1991-1995, growth of agri-food exports, in comparison, averaged 7.5%. The sharp 26.7% increase in food imports in 1995 may be attributable to the shortfall in agricultural food production resulting from the persistent drought during the first half of that year and partly due to the effect of the trade liberalization measures implemented.

Although Jamaica is a producer and exporter of a relatively wide range of agricultural commodities, fresh and processed, the fact that the country remains a net importer of agricultural commodities may be attributable to its high population (both local and tourist), and the consequent need to satisfy demands for a wide variety of products, as well as the instability of the Jamaican dollar which reduces the earnings derived from exports. Agricultural exports constituted on average, 23.1% per annum of Jamaica's total domestic exports earnings between 1991-1995, and 22.3% per annum of total merchandise export earnings for the same period[3]. The value of total agricultural exports exhibited rapid growth during the review period (except 1994), accelerating from 3.2% in 1991 to 23.4% in 1995. Overall, the value of agricultural exports grew at an average annual rate of 7.5% between 1991 and 1995.

With respect to CARICOM agricultural trade, Jamaica also recorded deficits for the entire period, except 1991(Table 6). As a result, the country registered an average per annum agricultural trade deficit of US $11.4 million. The basis for the continued trade deficit in agriculture lies in the rate of growth of agricultural imports which averaged 35.9% between 1991-1995. In contrast, growth in agricultural export earnings recorded a negative 2.9% over the same period.

Table 6

Jamaica: CARICOM Agricultural Trade Balance

(US$Mn)	1991	1992	1993	1994	1995
Agri-Food Export	20.0	19.4	19.5	16.7	18.0
Agri-Food Imports	17.1	24.9	25.4	35.5	47.8
Agri Trade Balance	2.9	(5.5)	(5.9)	(18.8)	(29.8)

Source: Economic and Social Survey: Jamaica, 1995

Agricultural Diversification

Except for the Agro-21 initiative, which came to an end in 1987, there has been an absence of well defined diversification programmes for Jamaica's agricultural sector. Instead there have been programmes and projects revolving around the Agro 21 initiative focusing on agricultural production outside the scope of traditional crops. As a result of the efforts of Agro 21, 1,429 hectares of land were dedicated to winter vegetable production; 245 hectares went into ornamental horticulture; and 8,204 hectares of sugar lands were utilized for the production of a variety of crops including rice, corn, soyabean, and orchard crops.

The main objective of the Agro 21 venture was to exploit identified competitive advantages such as climate, soil types, low interest rates (at the time) and to encourage existing entrepreneurial spirits. Although the programme included tree crops (mango) and fresh water fish, the major emphasis was on the production of winter

[3] Data on agri-food exports are taken from the Economic and Social Survey of Jamaica, 1995.

vegetables. With regard to winter vegetables, the major aim was to introduce high technology in vegetable production. Further, the intention was to penetrate existing markets of the U.S. during the winter season. However, the project failed before the 1990s. Only the mango project remained in operation, albeit on a small scale, and is becoming increasingly insignificant because of its inability to compete in foreign markets and the sporadic nature of its output.

The Self-Sufficiency Programme (SSP) is another example of a programme that had its grounding in the Agro 21 initiative. In fact, the Agro 21 company had responsibility for development of the SSP and non-traditional exports. Launched in 1984, the SSP had as its primary objective the stimulation of private sector production of fresh water fish, milk, beef, corn, cassava and soyabean in order to reduce Jamaica's dependence on imported food. However, constraints such as high interest rates, delays in the approval of loans, poor infrastructure and a shortage of planting material limited its effectiveness. In the livestock sub-sector, marketing problems and high food prices were the constraints to development. Moreover, there was a shift in focus within the sub-sectors under the SSP due to the unavailability of suitable lands, coupled with the prevailing low prices for certain crops on the international market. Together with generally low productivity, these factors combined to make the locally produced crops uncompetitive relative to imported items. However, the aquaculture sub-sector expanded as it continued to attract investors.

As part of the SAP, diversification of agriculture was promoted through the production of non-traditional crops on sugar lands. Several sugar factories were closed and others privatized. Additionally, the 1990s have witnessed the continuous promotion of large scale production of new crops, driven mainly by market forces. These activities, however, are not undertaken based on any diversification programme. One such activity is the papaya project launched in 1990. This crop has registered a constant increase in acreage and production. The project, however, also had its fair share of problems. In 1992, the industry was affected by "Ring Spot" virus which can only be controlled by rouging and other strict management practices. A new resistant variety has since been developed and is showing great prospect for the industry. Other constraints included high interest rates, investors' fear of the "Ring Spot" virus and intensive management requirements. Notwithstanding the fact that Jamaica's papaya has the major share of the UK and Canada markets, there remains a need to strengthen its competitiveness in the global market place. In addition, the industry needs to establish quality standards through grade and standard programmes in an effort to export top quality fruits.

With the continued diversification of the agricultural sector and the implementation of trade liberalization measures, opportunities for the export of non-traditionals such as vegetables, spices, ornamental crops and fresh fruit have resulted in a greater commercial orientation on the part of small farmers. Given the strict quality standards that must be met in order to penetrate foreign markets, small farmers are also increasingly being forced to utilize more sophisticated technologies and employ better agronomic practices.

Moreover, the Structural Adjustment Programme has attracted a new type of producer and marketing agent to the export agriculture sub-sector. At the production level, you have high income entrepreneurs, often professionals, who work full-time in another sector, have capital for large scale production, and are able to hire management and labour services. In the case of marketing, it is usually a non-agricultural trader who recognizes an opportunity to earn foreign exchange through the agricultural sector in order to promote the general trading business. Examples of these changes are evidenced by the new entrants to the "Blue Mountain" coffee industry.

Commodity and Sub-Sector Performance

❑ ***Cane and Sugar***

Sugar cane, the single largest crop in the traditional export crop sub-sector, experienced fluctuations in output between 2.7 and 2.3 million tons per annum over the review period (Table 7). Total sugarcane production comprises traditional estate and independent farmer production, with the former accounting for

slightly more than half of the total tonnage of milled cane during the 1991-95 period. While there has been a gradual improvement in the quality of the sugarcane grown, there has also been a simultaneous decline in yields over the period, with the tons of cane per hectare falling from 64.7 tons in 1991 to roughly 58 tons in 1995. Additionally, the tons of sugar per hectare declined from 5.65 in 1991 to 5.30 in 1995.

Table 7
Jamaica: Cane & Sugar Production, Yields and Exports

	1991	1992	1993	1994	1995
Harvest ha .'000	42	40	40	39	40
Cane '000 tons	2,732	2,525	2,661	2,450	2,295
Ton cane/ha	64.74	64.10	67.10	62.81	57.95
Ton cane/ton sugar	11.98	11.32	12.38	11.29	10.93
Tons sugar/ha	5.65	5.60	5.59	5.65	5.30
Sugar					
Prod. ('000 tons)	228.0	223.0	215.0	217.0	210.0
Exports ('000 tons)	151.2	139.4	149.5	126.1	145.0
Exports(US$'M)	87.4	82.5	98.6	75.7	98.5

Source: Social and Economic Survey, 1995

Sugar production exhibited a declining trend over the review period, falling from 228 thousand tons in 1991 to 210 thousand tons in 1995. The 1995 sugar output represented a decrease of 3.2% from the previous year as a consequence of drought and industrial unrest experienced by the industry. Recently, however, there has been some productivity improvements in the industry as evidenced by the decline in the tons cane per ton sugar (tc/ts) conversion ratio from 11.98 tons in 1991 to 10.93 tons in 1995. The recent improvements in productivity are expected to continue and further strengthened following the privatization of major state-owned sugar estates.

The volume of sugar exports totaled roughly 145 thousand tons in 1995 (an increase of 15% over 1994) at a value of US $98.5 million (an increase of 35% over 1994). As is customary, the majority of sugar exports (97.5%) went to the UK, where the sugar industry benefited from a 10.4% increase in the average realized price from US $607 per ton sugar in 1994 to US $670 in 1995. The latter price compared with US $390 per ton on the world market. As a result of this price increase, the foreign earnings from sugar in 1995 almost equaled the US $98.6 million the industry earned in 1993; notwithstanding the volume exported was some 4,548 tons below the 1993 figure. However, it did surpass the US $87.4 million earned in 1991 despite the fact that 151,181 tons of sugar was exported in that year.

The sugar production target up to the year 2000 is set at 300 thousand tons per annum. This will enable both quota obligations and domestic demand to be satisfied. To reach this target however, the industry must double its efforts particularly in light of the comparatively poor performance in the 1994/1995 crop year. In the post 1996 period, increasing industry competitiveness will be an imperative, particularly since the prospects for the year 2000 and beyond appear less favourable. A critical factor to realizing the objective of improving the industry's competitive position is the industrial relations climate. The inability to improve industrial relations will be a serious constraint to the industry's prospects.

❑ *Banana*

The production of bananas followed an upward trend for the entire period under review, increasing from 75.3 thousand tons in 1991 to 85.3 thousand tons in 1995 (Table 8). This represents an increase of 13.3% over the period. Since the volume of banana exports are reported as being almost identical to production, then export volumes also exhibited a similar upward trend over the review period. The volume of banana exported during 1995 increased by 8.4% over 1994 to total 85.2 thousand tons, with foreign exchange earnings increasing from US $ 43.5 million in 1994 to US $48.0 million in 1995. The industry's 1995 performance marked the second consecutive year of a simultaneous increase in both export tonnage and foreign exchange earnings, with both the volume and value of banana exports in 1995 exceeding those of the previous years between 1991 to 1994.

Table 8
Jamaica: Banana Production and Exports,

	1991	1992	1993	1994	1995
Prod. ('000tons)	75.3	76.7	76.8	78.6	85.3
Exports ('000 tons)	75.3	76.7	76.8	78.6	85.2
Exports (US$M)	45.1	39.6	35.9	43.4	48.0

Source: Social and Economic Survey, 1995

Overall favourable weather conditions, along with improved technology and management on the three large estates contributed to increased

productivity and exports. As producers strive to attain a quota of 105 thousand tons set by the EU, an immediate imperative to remain competitive in the market is the reduction of production costs.

❑ *Coffee and Cocoa*

In spite of fluctuations in coffee production over the period, an upward trend is evident for the industry. Output peaked at 15.4 thousand tons in 1995 - the highest since 1992 (Table 9). The large increase in deliveries for the 1994/95 crop year may be attributed to the additional acreage which came into bearing in the Blue Mountain areas of St.Thomas, Portland and St. Andrew. In fact, the production of Blue Mountain coffee which is sold for at least twice the price of lowland coffee, increased from 778 tons in 1989 to 8,271 tons in 1995- an increase of 963%. Expansion in the industry is also attributed to an increase in yield from 398 boxes per hectare in 1985 to 529 boxes per hectare in 1994. Increased production levels were also recorded in 1996 and 1997 with output totaling 16.8 and 18.6 thousand tons respectively.

Table 9
Jamaica: Production and Exports of Coffee & Cocoa

	1991	1992	1993	1994	1995
Coffee prod.	9,175	13,499	12,329	10,035	15,398
Blue Mountain	4,082	5,579	6,532	6,150	8,271
Lowland	50,93	7,920	5,797	3,885	7,127
Coffee Exports					
tons	912	1,325	1,402	1,050	1,838
US$'000	11,817	16,201	19,494	15,317	28,132
Cocoa :					
Production tons	4,374	6,194	6,304	6,169	6,186
Exports tons	1,490	1,791	1,580	2,562	1,991
US$'000	2,243	2,506	1,849	2,916	2,703

Source: Social And Economic Survey, 1995 and 1997

The expansion in coffee production has been concentrated among large scale producers, including new entrants into the industry. Consequently, increasing the productivity of small producers remains one of the constraints that needs to be resolved in the industry. Other constraints include improper crop care, fertilizer use and access to labour for harvesting.

Coffee exports (volume and value) were similarly characterized by a generally increasing trend between 1991-1995. The volume of green beans exported in 1995 totaled 1,838 tons, the highest for the review period. Foreign exchange earnings amounted to US$ 28.1 million, 83.7% above 1994. Despite the significant increase in both the volume and value of exports, the very marginal upward movement in earnings/ton from US $14,588 in 1994 to US $ 14,748 in 1995 indicated that Jamaica's exportable coffee out-turn was below that of the previous year[4]. While the volume of coffee exports fluctuated in 1996 and 1997 (1,780 and 1,952 tons respectively), the value of foreign earnings were higher than all the previous years at US $33.5 and US $32.4 million respectively.

Despite some variation in output, cocoa production remained fairly constant at roughly 6.2 thousand tons for most of the review period (Table 9). Between 1992 and 1995, the level of production attained came close to its pre- 1988 (Hurricane Gilbert) levels. The positive performance in cocoa production may be a direct result of the implementation of rehabilitative projects aimed at increasing production, the introduction of an improved planting technique and crop agronomy, as well as greatly improved payment arrangements to growers. The Rio Minho watershed has been the area where cocoa production increases have been concentrated.

However, in 1996 and 1997, production levels fell below the 6 thousand ton level to 3.4 and 4.1 thousand tons respectively. The decline in production was attributed primarily to extreme weather conditions; mainly severe drought conditions and to a lesser extent heavy rainfall which reduced cross pollination by fly vectors and caused a decline in early flowering.

With regard to cocoa exports, Jamaica experienced annual fluctuations in the volume of its cocoa shipments over the review period. On the other hand, the value of cocoa exports were given to less variability and with the exception of 1993, lay within a range of US $ 2.2 million to US $ 3 million. Both export volumes and value declined in 1996 and 1997 relative to 1995. In terms of volume, Jamaica exported approximately 1.4 thousand tons of cocoa in 1996 and 1997, respectively. The corresponding earnings were approximately US $2.1 million

[4] Economic and Social Survey, 1995.

and US $ 2.0 million. Partly, responsible for the decline in export earnings were the depressed international cocoa prices which prevailed in 1996. Although prices recovered in 1997, increasing from US $1441/ton in January 1997 to US $1,725 in December of that year, the benefits of the increase will not realized until later in the 1997/98 crop[5].

❑ *Citrus*

Growth in citrus production was variable and marked by wide fluctuations over the 1991-1995 period. Toward the end of the 1994/95 crop year, citrus production increased by approximately 9.8% to 169.3 thousand tons compared to the 1993/94 crop year (Table 10). The increase resulted primarily from the attainment of maturity of the new orchards as well as renewed efforts of the industry to improve the cultural practices of all producers. In contrast, the volume of citrus delivered to the processing plants declined from 52.6 thousand tons in 1993/94 to 48.7 thousand tons. The main reason for this decline in fruit deliveries was the diversion of fruits to the fresh fruit export market in response to augmented demand for oranges particularly the Sweet Orange and Ugli varieties.

Table 10
Jamaica: Production & Exports of Citrus, 1991-1995

tons	1991	1992	1993	1994	1995
Production	24,801	47,609	27,693	52,634	48,761
Exports	9,985	12,515	11,675	8,118	7,468
ExportsUS$'000	3,304	4,651	3,492	2,713	2,667

Source: Social And Economic Survey, 1995

The industry's expansion of capacity in response to the increase in local and export demand for these two citrus varieties depends on the availability and cost of credit. For example, throughout 1995, the Agricultural Credit Bank's Interest Rebate Programme, with lending rates as low as 17.0% stimulated an expansion of citrus orchards. Given that these rates of interest are maintained, then this trend is expected to continue into 1996. Citrus exports, in terms of volume and value, were characterized by annual fluctuations throughout the review period. The industry was reported to have exported approximately 23,777 tons of fruit for the 1994-1995 crop season.

❑ *Coconut*

Coconut production (represented by Copra Equivalent Weights) has witnessed an increasing trend for the five year period under review; production rising by 44.4% over the period (Table 11). The increase in production was due mainly to the field rehabilitation programme implemented by the Coconut Industry Board as a means of improving productivity as well output from new acreage. Coconut/copra production occurs primarily to meet local market demand and is no longer exported.

Table 11
Jamaica: Coconut Production

tons	1991	1992	1993	1994	1995
Coconut	12,558	14,914	17,907	18,769	18,135

Source: Social And Economic Survey, 1995

❑ *Pimento*

In the absence of production data, trade data on pimento indicate a general increase in output, as evidenced by an increase in export volume from 1,752 tons in 1991 to 2,666 tons in 1994 (Table 12). This increase in export volume was accompanied by a general rise in foreign exchange earnings which indicates that prices have either increased or not declined significantly from their original levels.

Table 12
Jamaica: Volume & Value of Pimento Exports,

US$'000	1991	1992	1993	1994	1995
Exports:					
tons	1,752	2,280	2,187	2,666	--
US$'000	3,543	4,479	3,805	4,496	5,130

Source: Economic and Social Survey: Jamaica, 1995

Exports of pimento, pimento berry oil and pimento leaf oil for 1995, were estimated at US$5.13 million, 3% more than the value in 1994. One factor which served to boost export performance is the recovery of the East European market which started in 1993. This resulted in a substantial 423 tons exported to this market in 1995, an increase of 48% over 1994. The value of pimento exports to Eastern Europe in 1995, showed a 60.6% increase relative to 1994-moving from US $498,000 in 1994 to US $800,000 in 1995.

[5] The cocoa industry delivers on the basis of contractual arrangements made in the previous year.

Domestic Crops

Domestic crop production is characterised largely by a multi-crop production system on small hillside holdings dominated by small farmers using low level of inputs and technology. In 1995, small farmers, who are principally responsible for national food production, accounted for 70% of Jamaica's domestic crop output with a gross farm-gate price of $16.5 billion. In fact, it was small traditional hillside agriculture which has been at the forefront of the relative growth of Jamaica's agricultural sector and not the largely export oriented sub-sector.

Domestic crop production increased throughout the review period with total production of domestic food crops rising from 415.4 thousand tons in 1991 to 662.9 thousand tons in 1995 (Table 13). Significant increases were recorded for vegetables which rose by 81.7%, fruits by 134.7%, and " other tubers" (i.e. cassava, coco, dasheen) by 69.7% . The crops which recorded the fastest per annum average growth rates were condiments (53.3%) and fruits (26.9%). One of the main factors attributed to fueling the increase in domestic crop production is the continued expansion of non-traditional exports.

Table 13

Jamaica: Domestic Food Production & Non-Traditional Exports

	1991	1992	1993	1994	1995
Domestic Crop prod. '000 tons					
Total	415.4	506.9	583.7	641.9	662.9
of which					
Yams	186.1	214.4	221.9	233.9	240.4
Vegetables	101.2	124.2	147.4	171.8	183.9
Exports					
Tubers					
tons	11,520	13,282	14,930	14,530	14,834
US$'000	11,724	9,850	11,623	13,701	15,475
Vegetables					
tons	2,052	2,653	2,301	1,932	2,515
US$'000	1,239	1,228	1,448	1,345	1,516
Fruits					
tons	2,689	3,327	4,246	5,340	6,364
US$'000	2,367	3,553	4,141	5,880	8,084
Ornamental					
Hort. tons	365	251	478	320	137
US$'000	2,477	2,498	1,973	1,761	1,775

Source: Social and Economic Survey, 1995, 1996 & 1997

Notwithstanding the overall growth of the sub-sector, the period 1992-1995 was characterized by a slowdown in the rate of output growth, from 22.2% in 1992 to 5.2% in 1995. Among the factors which contributed to this slowdown in the growth rate were unfavourable weather conditions (excessive rainfall and drought), the high cost of inputs, the relatively slow rate of technology adoption, and competition from imported substitutes.

In 1995, the volume of non-traditional exports totaled 24.1 thousand tons and earned US $32.8 million. In light of the increasing profitability of non-traditional exports, average foreign exchange earnings per ton rose from US $1,134.4 in the 1994 calendar year to US $ 1,313.4 in the period January-September 1995. This has resulted in some diversion of produce from the local to the export market.

Among non-traditional exports, the volume and value of fruit exports increased consistently during the review period. In light of this export performance, the quantity of fruits exported increased from 2,689 tons in 1991 to 6,364 tons in 1995. The fruit accounting for most of the increase in export tonnage is papaya, moving from 2,007 tons in 1992 to 4,820 tons in 1995. The U.S. market accounted for the largest share of papaya exports between 1992 and 1995. This was followed by exports to the European Union (EU) and Canada. However, the share of papaya exports going to the US market declined steadily over the period. In contrast however, growth was experienced in the share of exports going to the EU and Canada. Commensurate with the increase in export volumes was an increase in foreign exchange earnings from US $ 2.3 million to US$ 6.7 million over the corresponding period.

On the other hand, the volumes and values of the other non-traditional agricultural exports displayed some annual fluctuations (vegetables and tubers), and significant declines (ornamentals). Notwithstanding the fluctuations in the volumes and values of some non-traditional exports, the export market for root crops (a major contributor to non-traditional exports) , foliage and vegetables among others, are described as favourable. As a result, non-traditional agriculture exports are predicted to

increase its share in total agricultural earnings in the future.

Livestock

The sub-index for meat and poultry production fluctuated over the period but nevertheless exhibited a generally downward trend (Table 14). The poultry industry recorded growth in production in 1995 relative to 1994 as a result of the 4.2% increase in the production of the two main processors. The industry however continues to be confronted by increased competition from the relatively cheaper imported chicken parts resulting from the liberalization of the Jamaican economy.

Table 14
Jamaica: Domestic Livestock Production, 1991-1995

Production	1991	1992	1993	1994	1995
Meat, '000 kgs					
Beef & Veal	16,053	18,208	15,639	15,793	16,655
Goats Flesh	613	1,633	616	510	536
Pork	4,740	5,926	7,047	7,247	6,688
Mutton	10	5	4	5	5
Poultry	53,436	52,469	44,000	44,946	45,369
Fish					
Inland Prod.	3,000	3,000	3,000	3,000	n/a
Exports -tons	1,389	1,720	2,558	134	138
- US$'000	5,818	9,082	12,214	2,494	3,464
Eggs (million)	110	114	99	102	n/a

Source: Social and Economic Survey, 1995; MoA Data & Evaluation Division.

With respect to meat production, the volume of beef produced fluctuated between 15 and 18 thousand tons over the 1991-1995 period. In contrast, pork production increased marginally. This was due mainly to new entrants in the sub-sector supported by the addition of a new processing facility at Lyford. Further, trade liberalization has not yet affected the pig industry because of the fact that the industry still benefits from government protection (continued restriction on the importation of whole carcasses).

In contrast, the dairy industry has been adversely affected by trade liberalization and the consequent increase in dairy product imports. This led to continued declines in milk production in 1995, which prompted renewed lobbying activities for government intervention and greater levels of protection. In the post-1995 period, the inability to cost effectively dispose of produce has resulted in a tendency toward milk dumping by farmers. The foregoing suggests that there is an apparent need for a reassessment of the livestock sector if it is to survive in a liberalized environment. The achievement of a competitive livestock sub-sector will be enhanced through long term research and development efforts aimed at increasing efficiency, and cost and quality competitiveness.

Agro-Processing

Growth in Jamaica's agro- industrial sector has been declining in recent years. For instance, the production of specific processed foods has showed an overall decline between 1991-1995 (Table 15). Generally, agro-industrial enterprises suffered from low production efficiencies. Many of these enterprises continued to operate with old/obsolete capital equipment, due largely to the high cost of capital which proved to be a major deterrent to new investment. Moreover, maintenance was irregular and refurbishing, modification and upgrading were almost non-existent, not only because of shortage of funds, but also because of lack of skills and vision.[6]

Table 15
Jamaica: Production of Selected Processed Foods, 1991-1995

	1991	1992	1993	1994	1995
Selected Products (mn kg)	848	811	812	805	806
Growth %	7.3	-4.4	0.1	-0.9	0.1

Source: STATIN, Bank of Jamaica, PIOJ; various issues

Nevertheless, agro-processing constitutes the main manufacturing activity in Jamaica. It is largely based on the processing of a range of tropical fruits, vegetables and spices, and accounts for over 50% of traditional, and in excess of 25% of non-traditional, manufactured exports.

Apart from the sugar and poultry industries, and to a lesser extent the citrus industry, agro-industry based on domestic raw materials and located primarily in the rural areas remains largely underdeveloped in Jamaica (FAO 1995). Recognizing that agro-processing increases the value-added of agricultural products, the government has placed priority on the

6 "Agro-industrial Linkages for the Improvement of Small-Scale Farming in Jamaica", ECLAC; FAO, 1996.

development of agro-processing in order to benefit from the considerable opportunities that it offers. Food processing is the main agro-industrial activity in Jamaica and accounts for approximately 15% of total manufacturing output.

The scope of the food industry in Jamaica is quite extensive, covering, among others, sugar, edible oils and fats, milk products, beverages, confectionery, meats, processed foods and fresh fruits and vegetables for export and local consumption. In contrast, conversion of agro-industrial commodities into non-food items forms a small part of total activity in this sector. Such products include essential oils, materials for dyeing, tanning and colouring, medicinal products, insecticides, cosmetics, skin care products, perfumes and colognes.

Small-scale (cottage) industries remain the main conduits of food, fibre and agricultural-based industrial commodities in Jamaica. Recent estimates indicated that there were some 60 to 70 food processors in Jamaica producing a range of products, including sauces made from local herbs and spices, canned ackee, canned callaloo, tinned juices and processed meats. Processed food exports, such as, jams and jellies, jerk seasonings, pepper sauces, canned ackee, vegetable and fruit juices, have shown considerable market potential in response to the expansion of ethnic food markets in the USA, Canada, and Europe.

Jamaica's agro- industrial sector faces serious constraints, specifically the high cost-nature of agro-processing technology due, in part, to the average scale of production, and difficulties associated with the quality, availability and cost of packaging materials. Agro-industrial development has also been hampered by the inconsistency of raw material supplies due to competition from the export market for fresh produce. Additionally, high interest rates which have acted as a disincentive to investments needed for increased processing efficiency, and fiscal constraints which have led to the downsizing of agricultural services, have adversely affected the country's ability to produce good quality pest free products. The failure to rigorously enforce product quality standards for import competing products because of personnel cutbacks and loss of professionals in the civil service may have contributed to the loss of domestic market share.

Constraints to Agriculture

It is reported that Jamaica's agricultural sector is not achieving its full potential in providing a comfortable way of life for the majority of farmers nor has it developed to the point where the sector meets local and export needs[7]. Jamaica's agricultural sector is confronted by numerous challenges and constraints which have impacted upon agricultural production over the last decade. The constraints to the agricultural sector are largely domestic in nature. These may generally be summarised as follows:

Low Productivity Levels

- physical (geological) limitations, including hilly terrain, which minimizes the adoption of cost-effective mechanisation, unsuitable soils, soil degradation and water availability and management problems, which adversely impact on yields and productivity;
- pests and diseases of economic significance, exacerbated by the inadequate quarantine capabilities;
- small domestic and regional markets;
- low levels of human capital and inadequate application of improved technologies;
- lack of a commercial orientation in farming and propensity to produce for "protected" markets, resulting in slow progress in agricultural diversification programmes;
- inadequate storage, marketing and transportation facilities and services to facilitate and stimulate trade in agricultural commodities.

Institutional & Structural Deficiencies

- weak macro-economic framework, which constrains the development of enabling economic environment for investment in agriculture and the creation of inter-sectoral linkages with tourism and agro-industry;
- weak institutional capacity of Ministries of Agriculture, resulting in inadequate policy analysis formulation and poor planning,

[7] Jamaica National Environment Action Plan 1995-1998, NRCA, PIOJ, May 1995.

evaluation and implementation of appropriate agriculture sector and rural development initiatives;
- the dependence on public-sector resources, which are inadequate to meet the demands of improved facilities, post-harvest and marketing infrastructure, training, research and other essential services;
- undeveloped domestic capital market and low propensity to invest in agriculture due to the sector's comparatively high risks and absence of risk-mitigating facilities such as insurance, market guarantees and compensation;
- lack of labour for agriculture and poor skills of the agricultural labour force;
- undeveloped information systems which constrain the effectiveness of sector planning, produce marketing and trade.

While the above constraints are certainly not exhaustive, they capture the general constraints which are fairly common across all Caribbean countries. However, a few of these constraints require further discussion.

Within the sector, low productivity was identified in the Five Year Development Plan (1990-1995) as a chronic problem of Jamaica's agricultural sector. As the Plan noted, whereas yields from some crops have improved, in general, crop yields remain significantly lower in Jamaica than in several other countries. This issue of low productivity was further highlighted in a recent study which noted that over the ten year period 1985-1995, the agricultural sector accounted for 7% of GDP and employed 27% of the total workforce.[8] While it was recognized that the direction of the disparity between these indicators is not uncommon for developing countries, the scale of the disparity was described as particularly striking and suggested very low productivity in the agricultural sector.

The factors cited in the Five Year Plan as contributing to low productivity include:
- the absence of a clearly-defined research and development programme;
- an inadequate extension service;
- an aging farm population which does not easily adopt improved technology;
- widespread lack of irrigation, and a consequent dependence on rain-fed agriculture;
- inappropriate land use, particularly in the watershed areas.

Consequently, it was recognized that if Jamaican commodities are to become competitive both at home and abroad in an increasingly liberalised international market, then it is imperative that productivity in the agricultural sector be increased. Such improvements in productivity and competitiveness of agricultural production are also critical for the sector's ability to adequately meet the food requirements of the population.

The lack of an operational land use policy in Jamaica has constrained the efficient distribution and use of land resources. A National Land Use Strategy, proposed in a 1970-1990 Government Plan, was yet to be implemented up until the last year (1995) of the review period. Population growth, coupled with industrial and commercial expansion have resulted in intense competition for land. Approximately 50% of the island is over 307.7m above sea level and consequently agriculture and urban uses tend to compete for scarce arable, flat lands. Thus there is a great deal of conflict among potential users for choice sites and locations and, within the public sector, for government-owned land. Significant tracts of good agricultural land and areas of valuable mineral deposits are being utilized for other purposes by both the formal and informal sectors. This unsatisfactory land use situation has been exacerbated by several factors. In the case of agriculture, some of the land use issues are:
- under-utilization of large acreages of arable lands.
- Small inefficient farms located on low productivity lands.
- Over-intensive cultivation and misuse of steep slopes.
- Unavailability of land and security of tenure.

Forestry, agriculture and human settlements are the three most widespread land uses in Jamaica. Forestry and agriculture are predominant, occupying 87% of the land area, with the latter's

[8] Assessment of the Impact of Trade Liberalization on the Agricultural Sector of Jamaica; FAO 1997

share extending to over 42%. The three principal types of agricultural use are plantation (crops grown mostly for export), mixed farming of food crops (for domestic consumption and export), pasture for beef and dairy cattle for local consumption.

With the possible exception of banana production, the typical farm in Jamaica (including sugarcane) is largely labour intensive. Consequently, operations are characterised by a high degree of under-capitalisation. Moreover, given the fact that the small hillside farmer predominates in Jamaica's agricultural sector, technological applications in the form of mechanisation of agricultural functions and irrigation facilities have not generally been widespread. The sub-sector which has recently undergone some technological improvements is bananas, through the establishment of three large high technology farms- Eastern Banana Estates Limited, Victoria Banana Estates and St. Mary Bananas.

A less than optimum land use management has been manifested in a rural/urban drift and a plethora of environmental and socio-economic problems in human settlements in urban areas; deforestation and the destruction of watersheds; and inefficient unsustainable agriculture. For instance, deforestation has been occurring at the rate of more than 3% per annum. This has serious implications for soil and water conservation as well as bio-diversity and has been further aggravated by improper hillside farming practices as well as inappropriate construction and development practices which result in a considerable amount of land and watershed degradation. The degradation of watersheds has led to flooding becoming more frequent and severe, to the pollution of ground water resulting in health risks, increased cost of infrastructure maintenance, ultimately reducing agricultural productivity levels. Topsoil loss in the watershed areas is simultaneously reducing agricultural productivity and increasing siltation of stream channels thereby damaging offshore reefs.

Widespread use of agro-chemicals and fertilisers in crop production by farmers, together with the practices of the agro-processing sector have also led to associated environmental concerns. For instance, the toxic insecticide, Dieldrin, and the herbicide, gramoxone, have been detected in Jamaica's drinking water.[9] The usual disposal of wastes into streams and sinkholes from agro-processing activities has had serious negative impacts on the water resources.

With respect to infrastructure, the stated policy of the government is to provide support services and infrastructure primarily to the small farming community. Infrastructure consists of roads, water, irrigation and electricity. The widespread dependence, particularly by small farmers, on rain-fed agriculture has been identified as a critical constraint to regularizing crop production patterns. In 1991, only about 86,000 acres of agricultural land were irrigated while the total irrigable land acreage was estimated at 170,000. Problems of salt intrusion and inadequate maintenance plague some irrigation systems while in the case of the public irrigation, cost recovery has been low due primarily, to the absence of an appropriate rate structure or collection mechanism. The National Irrigation Commission, (a component of a project of the World Bank), established within the Mid-Clarendon Irrigation Project, is responsible for the management of irrigation and drainage facilities for farmers; a service to which a charge is attached. Problems associated with water access and management are expected to be cultivated due to the construction of the Rio Cobre dam for irrigation and the rehabilitation of existing irrigation facilities, installation of surface irrigation and wells in 1993.

The National Water Commission provides a treated water service to farmers at either a commercial or household rate. Farmers however opt for less expensive sources of water from wells, water tanks, waterways (canals or rivers) or water through NIC. On the other hand, electricity is usually supplied through the Jamaica Public Service. Rates vary from residential to commercial to industrial. Farmers are usually charged a commercial rate. However, farmers on medium to large farms who irrigate

[9] Jamaica Country Environmental Profile, Government of Jamaica 1987.

using electricity are normally billed at the industrial rate.

The poor state of rural roads is a major constraint to the marketing of agricultural produce. This situation was partially addressed through the planned repair of 100 miles of rural roads under the National Farm Road Development Programme undertaken by the ACB in collaboration with the Jamaica Defence Force. The aim of the N.F.R.D.P is to repair, rehabilitate and upgrade rural farm roads utilized chiefly by the small farming community.

As part of the conditionalities associated with the Agricultural Sector Adjustment Loan (ASAL) of 1990, agricultural credit policies were required to adjust to reflect market conditions as is the case in the general financial sector and economy. As a consequence, the tradition of relatively low and stable interest rates to the agricultural sector ended. Prior to the change to market determined interest rates, small farmers received loans at a maximum fixed rate of 12%, while medium and large farmers were required to pay 15%. These rates which were below the market interest rates, were instituted largely from donor funds. Apart from the switch to market determined rates in 1990, rates became variable, and subject to annual adjustment in accordance with prevailing market interest rates.

As a result of these changes, interest rate charged to small farmers at the end of 1994 was 49% while medium and large farmers were charged 48% plus the spread of the financial intermediary. These exorbitant interest rates seemed to have adversely affected the farmer's (particularly small farmers) ability to access credit. Thus while the agricultural sector has been growing both absolutely and as a share of GDP in the 1990s, the share of agricultural credit as a percentage of GDP has been declining; falling from 4.2% in 1990 to 1.7% in 1993 (Table 16). Moreover, commercial banks and the ACB have reduced their agricultural portfolios in real terms by 59% and 50%, respectively. This result probably stems from the lack of viability of agricultural projects at nominal and real interest rates of 50% and 23% respectively, as was the case in 1993; thereby possibly choking agricultural sector demand for credit and pushing the financial portfolios towards non-agricultural activities in the process. This had the effect in turn of reducing the supply of credit to the agricultural sector[10].

Table 16

Jamaica: Commercial & Development Bank Credit to Agriculture

	Agricultural Credit		AG Credit/GDP
Year	ACB	Comm. Banks	%
1989	0.21	0.88	3.7
1990	0.39	0.88	4.2
1991	0.09	0.65	2.4
1992	0.05	0.48	1.7
1993	0.07	0.47	1.7

Source: The Effects of Structural Adjustment on the Agricultural Sector of Jamaica; FAO 1995

Viewed from the standpoint of the consolidated balance sheets of commercial banks, this asset switching is more pronounced. Over the period 1980-1993, agricultural loans as a share of total assets declined in real terms from 7% in 1981 to 2% in 1993, despite the fact that total assets in real terms increased from J$12.9 billion in 1981 to J$20.4 billion in 1993. Thus, the implementation of the new interest rate regime as a part of a larger economic liberalization programme has brought with it a number of challenges within the agricultural credit framework. Chief among these challenges is the linking of lending rates to the yield on Jamaican government treasury bills. In a 1994 Report which examined the agricultural credit system in Jamaica, the ACB expressed its concerns with the then prevailing high interest rates and argued that it would be detrimental to the agricultural sector for the following reasons:

1. Independent and in-house analyses have shown that most projects cannot tolerate interest rates of the magnitude that have been imposed on farmers since 1991.
2. Agriculture, unlike undertakings with the industrial or commercial sector, is subject to the vagaries of nature such as hurricane, floods and drought, for which there currently no comprehensive crop insurance program.
3. In order to stimulate investment in certain critical sub-sectors such as bananas and

[10] Assessing the Effects of Structural Adjustment on the Agricultural Sector of Jamaica, FAO 1995.

citrus, it is felt that high interest rates are militating against such efforts.

In light of the above, the ACB is recommending that the interest policy be re-negotiated along the following lines:

- The interest rate on agricultural loans be de-linked from the short-term Treasury Bill yield and linked to a long-term financial instrument, such as the normal residential mortgage rate applied by Building Societies. This is considered more appropriate since most agricultural enterprises (e.g. orchard crops) have a long gestation period and are long-term in nature.
- That the variable feature be removed since a fixed rate of interest facilitates more effective project formulation and implementation and enhances project viability.

In the context of these concerns, it is argued that it must be made clear that what is required is that the prevailing interest rate reflect changes in the real interest rate and the level of inflation in the economy. The FAO report noted that it was critical that the right signals regarding the cost of money and the rates of return on investments be communicated to savers, lenders and investors to facilitate their efficient decision making and to reduce distortions in the economic environment.

Marketing and Distribution

The marketing system in Jamaica for traditional export crops differs from other crops. While for the former several commodity organizations with formal marketing systems exist, marketing activities and system for domestic and non-traditional export crops remains highly disorganized. As export market specifications become more demanding/strict however, the formalization of the non-traditional export market system is expected to develop alongside the export marketing system.

The potential exists for considerable expansion of linkages between agriculture and other sectors to serve both the domestic and export markets, including the tourist industry. Both the export and domestic sub-sectors constitute a large percentage of the agricultural sector's share of GDP. The Planning Institute of Jamaica, in its Five Year Development Plan (1990-1995) for Agriculture in Jamaica reported that consistent linkages between agriculture and the manufacturing and processing sectors however were slow to materialize. The Continuing Education Programme in Agricultural Technology (CEPAT) in conjunction with the hotel sector implemented a project which involved the training of hotel staff in produce and meat handling, and food preparation. It envisaged that this initiative will facilitate the sustained development of strong markets for farmers' produce through the exchange of relevant information on the type, quantity and quality of produce and meat required by the hotel sector.

Agriculture in Jamaica ~ Prospects

International Environment

Towards the year 2000, world agriculture will be increasingly influenced by an acceleration in the pace of globalisation and trade liberalisation. Trade is identified as the driver of this emerging environment. The dynamics of the globalisation and liberalisation have also been extended to agricultural trade, which, prior to 1994, was very heavily regulated by regional, hemispheric and international agreements. The most significant of these The 1986-1994 Uruguay Round of negotiations on trade liberalisation.

These negotiations included for the first time, reducing the distortions in trade in agricultural products. These distortions resulted from government intervention and support for agriculture. The establishment of the World Trade Organisation in January 1995 thus marked the end of an era of protection the agricultural sector. The main WTO Agreements which impact the agricultural sector are summarized below. While developed countries were given a maximum period of six years for implementing

commitments (i.e., 1995-2000), developing countries were allowed a period of ten years (i.e., from 1995 - 2004).[11]

- Agreement on Agriculture: 3 Commitments
  Market Access commitments require the conversion of all non-tariff border measures (import quotas), to tariffs which provide the same protection (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% in 1995, to increase to 5% by 2004.

  Countries are, however 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 were also 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 commitments require reductions in the level of expenditures on domestic agricultural support measures which distort genuine trade (called amber box aggregate measures of support (AMS)), by 13.3% between 1995-2004. AMS include acreage payments, certain subsidised loan programmes, input subsidies and price supports.

  Export Subsidies commitments require reductions in the value of direct export subsidies by 21% and in the volume of subsidised exports by 14% between 1995-2004. Developing countries are exempted from commitments on marketing of agricultural exports or internal transport subsidies.

- Sanitary & Phytosanitary (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.

- Ministerial Decisions
  The Decisions on Measures Concerning the possible Negative Effects of the Reform Programme on LDCs and NFIDC 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.

The basic objective of agricultural trade liberalisation is to reduce the level of protection which imposed constraints to other potential suppliers of the specific agricultural commodities. The agreements may negatively affect some participants in agricultural trade, particularly the least efficient producers. However, for most, tariff reductions and the elimination of quantitative restrictions may impact positively on their production costs, particularly as the cost of imported inputs are reduced. While lower costs of imported inputs is one element in enhancing commodity competitiveness, other factors, such as increased productivity, improved fruit quality and improved commodity marketing are equally important in producing a cost and quality competitive commodity.

International - Domestic Economy Link

The Government Jamaica is a signatory of the WTO and by virtue of its membership, committed to implementing these reforms within the 10-year period. The WTO also specifies that all commitments are to be included in the country's schedules of agricultural concessions and commitments. Jamaica has been among the

[11] "The Trading System After the Uruguay Round" John Whalley and Colleen Hamilton, Institute for International Economics, Washington DC, July 1996.

few Caribbean countries which have undertaken reforms in agriculture and trade. Concerns regarding import competition, particularly from products which continue to benefit from domestic supports and export subsidies have, however, contributed to the slow pace of implementation of WTO commitments in specific industries, such as poultry meat.

The Jamaican economy is 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. In addition to fulfilling WTO commitments, Jamaica must now prepare for the next Uruguay Round Agriculture negotiations scheduled to begin in 1999. It is very likely that this Round will place additional pressures in the EU to further liberalise its internal agricultural policy. The EU and the ACP are currently engaged in discussions towards the development of a post-Lomé IV arrangement and preparations are also underway for the review of the EU's Common Agriculture Policy (CAP). The outcome of negotiations will undoubtedly affect the EU's ACP trade preference regime, particularly the special commodity protocols in particular (sugar and rum).

Commodity Market Trends[12]

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 Jamaica's main export commodities.

Guidelines for Policy Formulation

Against the backdrop of the WTO Agreements, all actors in the sector are challenged to develop WTO-consistent mechanisms to increase productivity and competitiveness in agriculture

> *...."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."*[13]

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 of 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

[12] 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.

[13] AGRIFORUM - Towards an Agenda for Agriculture in the Americas, DIREXCOM, IICA Costa Rica, August, 1997.

impact on agricultural performance in the Caribbean over the last decade and a half. Despite social repercussions, 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 and development of specialist institutions, such as relates to the provision of credit, insurance, market promotion, among other services.

- **Technology Generation**
  No country can maintain leadership in industry unless its research can continue to innovate technology for improved efficiency. 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, the establishment and effective operation of a Caribbean research centre for technology generation and transfer may be a pre-requisite for the attainment and maintenance of competitiveness and sustainability in the agricultural sector.

  Given the resource limitations of most countries of the Region, the only way to effect this may be to pool regional 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 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.

Additional Statistics

Table 1: Origin of Gross Domestic Product, Jamaica

J $ Millions @ 1986 prices	1991	1992	1993	1994	1995
Primary Sector:					
Agriculture, Forestry & Fishing	1,078.5	1,217.5	1,339.5	1439.6	1467.9
Sugarcane	110.3	101.6	108.0	99.9	93.1
Non-sugar Agriculture	916.3	1,064.2	1,182	1286.7	1321.8
Fishing	51.9	51.7	49.6	53.0	53.0
Mining & Quarrying	1,606.7	1,565.9	1,571.3	1,679.9	1565.2
Secondary Sector:					
Manufacturing:	3,401.0	3,454.4	3,389.4	3,400.6	3360.8
Construction	1,718.2	1,725.5	1,716.9	1608.7	1724.9
Services Sector:					
Utilities - Electricity & Water	745.5	778.2	798.7	798.5	827.0
Transport, Storage & Communications	1,714.7	1,808.0	1,974.1	2074.0	2275.7
Wholesale & Retail Trade	3,462.1	3,645.3	3,791.2	3855.2	4008.0
Tourism	368.3	371.2	395.2	389.5	404.7
Business & General Services[1]	3247.5	3,471.2	3370.2	4407.7	4430.3
Government Services[2]	1,237.2	1,238.6	1234.0	1213.9	1216.9
Gross Domestic Product @ Factor Cost	17,486.9	17,756.7	18,011.2	18,210.0	18,294.4

1. Consist of Financial, Insurance and Real Estate Services
2. Central & Local Government

Source: Social and Economic Survey of Jamaica , 1997.

Table 2: Savings and Investment , Jamaica

J $ Millions	1991	1992	1993	1994
Gross Domestic Savings[1]	11712.1	23388.3	24458.8	33408.2
Transfers from Abroad (Net)	263.8	278.0	333.4	517.7
Gross Domestic Investment	12055.3	24155.6	34506.8	43824.7
Foreign Savings[3]	211.7	-46.6	239.2	116.6

1 - defined as the difference between GDP and total consumption; 2 defined as domestic savings plus transfers from abroad less factor payments.; 3 equals the current account of the BOP with the sign reversed.

Source. Social and Economic Indicators 1994; Caribbean Development Bank 1996.

Table 3:All Jamaica Price Index (Jan 1988=100): Annual Percentage Change (Averages)

	Weights	1991	1992	1993	1994	1995
ALL GROUP	100	51.0	77.3	22.1	35.1	19.9
Food & Drink	55.6	54.8	77.5	21.1	38.4	20.3
Housing	7.86	28.8	83.7	13.7	34.1	18.5
Household Furnishing	2.83	39.7	68.9	23.0	26.8	18.3
Fuels & Other H/hold Items	7.35	65.2	77.1	12.2	24.2	14.2
Personal Clothing & Footwear	5.07	42.4	100.1	31.6	24.6	17.5
HealthCare & Personal Exp.	6.97	56.4	75.6	26.7	28.9	16.0
Transportation	6.44	40.6	53.9	24.5	33.4	20.4
Miscellaneous Expenses	7.85	49.6	72.5	36.3	37.3	27.9

Source:: Social and Economic Survey of Jamaica,1996. PIOJ.

Table 4: Summary Central Government Fiscal Operations and Composition of PSIP, Jamaica

J $ Millions	1991/92	1992/93	1993/94	1994/95	1995/96
Central Government Current Account:	12167.9	20261.0	30490.8	40002.0	53847.7
Current Revenue	11386.0	19046.3	28946.6	38071.6	50262.6
Taxes	781.9	1214.7	1544.2	1930.4	3585.1
Non-Tax	10638.9	16321.9	25369.3	34454.6	44441.8
Current Expenditure	3886.4	3991.5	10295.4	11142.6	15805.7
Wages & Salaries	4140.6	6872.9	9876.2	15015.0	17971.2
Interest Payments	2611.9	5457.5	5197.7	8297.0	10664.9
Other	1529.0	3939.1	5121.5	5547.4	9405.9
Current Account Balance	849.6	728.4	905.9	877.0	678.8
Capital Revenue	2379.4	4059.8	4627.4	588.2	11201.2
Capital Expenditure	2016.1	3254.8	7136.7	13648.0	-764.3
Overall Surplus/Deficit					

Source: Social and Economic Survey of Jamaica, 1997

- Errors are due to rounding

Table 5: Commercial Banks Loans & Advances

J$ Millions, End of Period	1991	1992	1993	1994	1995
Total Commercial Bank					
Agriculture	940.2	1,117.1	1,416.7	2,038.5	1,879.0
Manufacturing	1,897.1	2,119.9	3,027.0	3,867.2	6,092.6
Mining & Quarrying	47.4	73.4	118.1	236.4	354.1
Distributive Trades	639.5	844.3	1,667.2	2,061.7	3,513.7
Tourism & Entertainment	835.3	1,298.1	2,147.6	3,087.4	4,118.5
Transport, Storage & Communication	1,175.9	1,137.7	2,163.6	3,026.9	4,399.9
Public Utilities (Electricit, Gas, Water)	12.7	238.5	155.6	197.4	93.7
Construction	2,361.7	2,473.9	3,321.1	4,616.1	5,587.3
Government	705.4	813.2	1,299.4	2,674.3	3,353.0
Financial Institutions	369.2	325.5	784.6	1,232.1	2,352.7
Personal	1,340.6	2,129.2	4,053.6	5,642.0	8,918.5
Professional & Other Services	1,554.2	1,524.3	3,460.3	3,614.4	5,201.3

Source: Economic and Social Survey: Jamaica, 1996.

Table 6: Balance of Payments , Jamaica

US $ Millions	1991	1992	1993	1994	1995
Current Account Balance	-255.8	10.9	-194.2	18.3	-192.3
Trade Balance	-424.3	-475.6	-804.7	-648.7	-989.6
Exports (f.o.b.)	1150.7	1053.6	1075.4	1219.5	1436.
Imports (f.o.b.)	1575.0	1529.2	1880.1	1868.2	8
Services (Net)	-84.3	146.7	233.6	191.7	2426.
Invest. Income (Net)	-478.9	-348.2	-240.2	-284.3	4
Net Private Transfers	153.3	248.2	306.4	447.2	189.5
Net Capital Movement	150.6	326.3	307.6	319.2	-296.9
Change in Reserves (BOJ)	105.2	-337.2	-113.4	-337.5	550.1
(minus = increase)					212.0
					-19.7

Sources: Economic and Social Survey: Jamaica, 1996

Table 7: Composition of Merchandise Exports and Imports, Jamaica

US $ Millions	1991	1992	1993	1994	1995[p]
Total Exports:	1,150.7	1,053.6	1,075.4	1,219.5	1,436.
Dom. Exports of Trad. Commod. (Total)	830.1	735.8	713.3	776.9	8
Bauxite	112.9	88.8	84.2	72.0	910.3
Alumina	542.9	471.1	439.8	537.2	70.9
Gypsum	0.6	0.7	1.1	1.0	632.0
Sugar	87.4	82.5	97.5	68.6	1.1
Bananas	45.1	39.6	35.6	46.1	96.0
Citrus & Citrus Products	4.5	8.1	5.7	3.4	45.7
Coffee & Coffee Products	12.2	16.7	19.7	16.8	5.9
Cocoa & Cocoa Products	5.5	5.9	4.2	5.7	26.9
Pimento	3.5	4.5	3.8	3.7	5.2
Rum	15.4	18.0	21.6	20.8	4.3
Domestic Non-Traditional Exports (Total)	226.5	296.0	345.0	407.2	22.2
0 Food &Live Animals	46.4	52.8	60.0	64.7	477.8
1 Beverages & Tobacco	17.4	17.2	19.1	19.5	77.1
2 Crude Material	5.7	6.2	6.9	7.7	21.0
3 Minerals Fuels	11.6	10.1	6.5	6.0	7.6
4 Animal & Vegetable Fats & Oils	0.26	0.04	1.5	1.5	8.3
5 Chemicals	22.6	25.4	24.7	24.0	0.9
6 Manufactured Goods	16.9	16.3	13.5	17.8	44.9
7 Machinery, Transport, etc	3.7	3.6	2.3	2.3	15.2
8 Misc, Manufactured Goods	101.9	164.3	210.5	263.4	3.4
9 Misc. Transactions	-	-	-	-	299.3
					-
Re-Exports	94.1	23.0	17.1	36.7	48.7
Imports:	1762.3	1775.4	2189.2	1,777.6	2828.
0 Food &Live Animals	185.3	208.4	259.7	*	7
1 Beverages & Tobacco	14.8	11.1	16.7	194.8	
2 Crude Material	53.1	63.1	63.2	22.6	
3 Minerals Fuels	330.4	316.9	343.9	52.1	
4 Animal & Vegetable Fats & Oils	14.0	11.3	11.6	269.6	
5 Chemicals	223.2	226.8	205.1	15.2	
6 Manufactured Goods	287.3	296.3	358.2	178.1	
7 Machinery, Transport, etc	459.5	391.8	564.4	283.7	
8 Misc, Manufactured Goods	174.6	219.8	313.0	428.8	
9 Misc. Transactions	19.6	29.7	53.4	293.2	
				39.6	

* January-October

Sources: Social and Economic Survey of Jamaica (1995, 1996, 1997); Bank of Jamaica Statistical Digest, January 1995.

Table 8: Value of Selected Imported Food Commodities (SITC 0), Jamaica

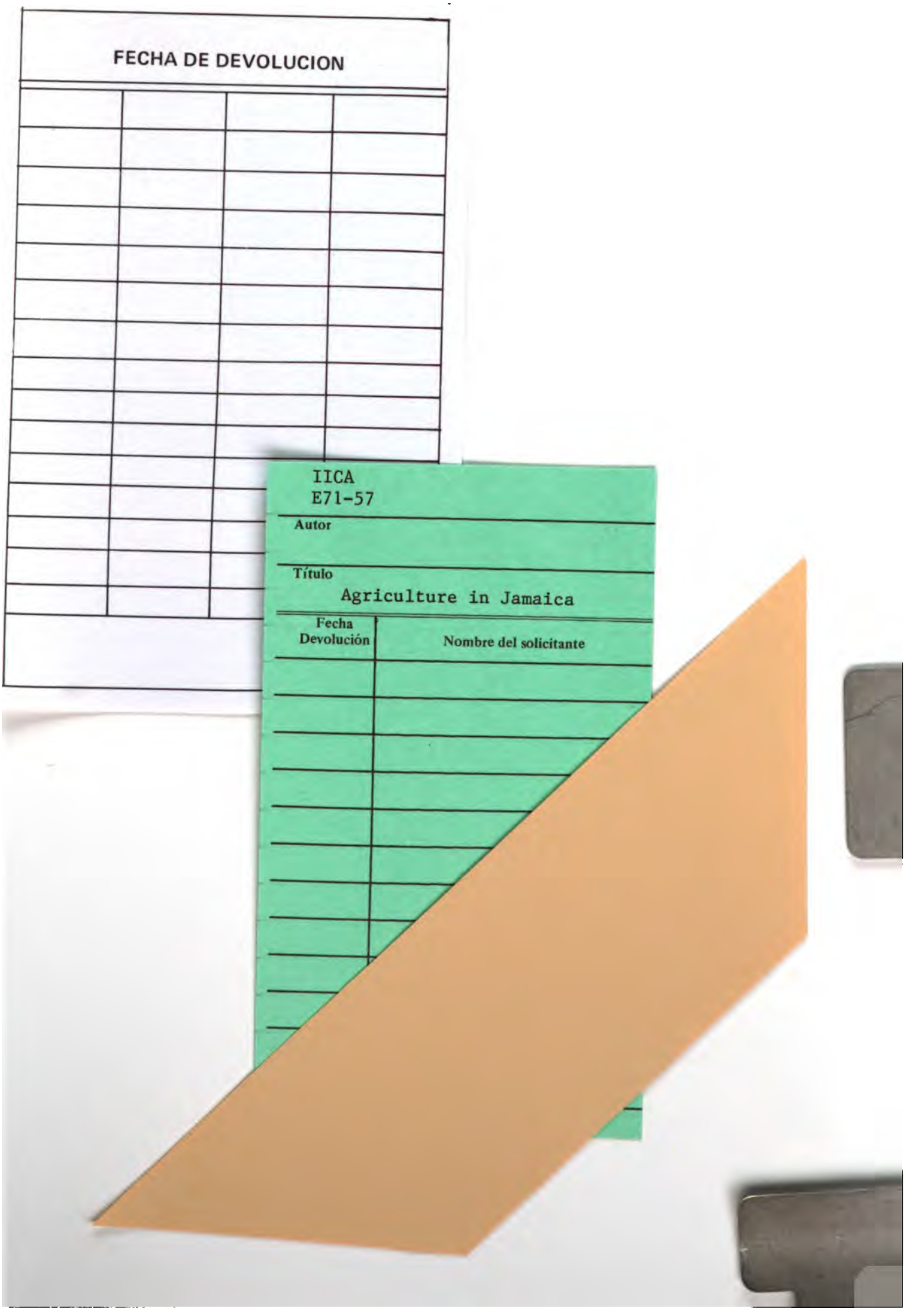
J $ Millions	1991	1992	1993	1994	1995p
Meat	26.2	26.6	37.7	31.5	39
Dairy Products	32.1	28.0	43.9	21.4	9.5
Fish & Fish Preparation	20.8	12.2	16.4	14.0	32.1
Cereals	57.8	77.3	72.9	60.6	67.7
Vegetables	1.8	1.6	3.0	3.3	3.9

Source: Social and Economic Survey of Jamaica, 1996 & 1997.

Table 9: Direction of Trade in Percent of Total

	1991	1992	1993
Total Exports f.o.b (I$M)	13,079.2	24,099.1	25,545.6
Trade Shares			
European Common Market	28.8	23.6	25.1
	41.8	47.9	47.6
North America	5.7	5.7	5.8
CARICOM Countries	23.7	22.8	21.5
Other			
Total Imports c.i.f ($)	20,237.0	38,267.5	53,138.0
Trade Shares			
European Common Market	12.6	9.6	8.7
	55.6	56.3	53.4
North America	6.4	5.0	8.6
Japan	3.9	4.0	5.6
CARICOM Countries	21.5	25.1	23.7
Other			

Sources: Statistical Digest of Jamaica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