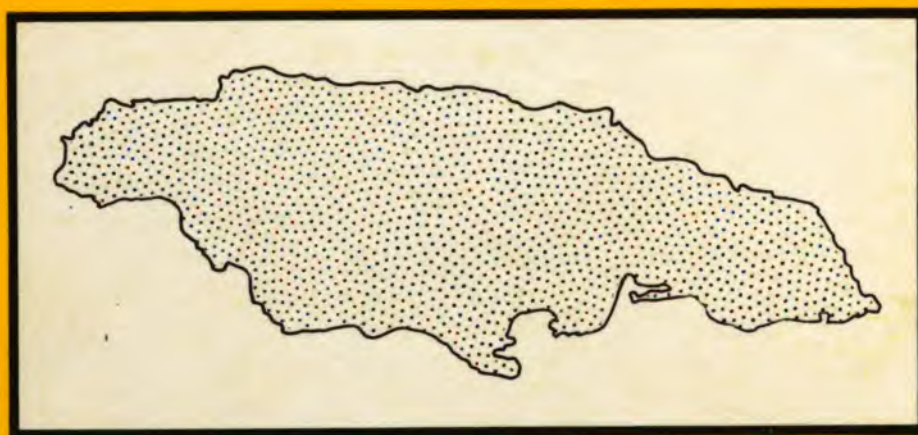




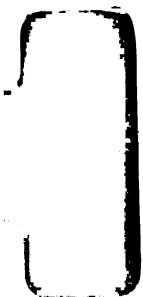
**IFAD**  
INTERNATIONAL FUND  
FOR AGRICULTURAL  
DEVELOPMENT

**IICA**



**JAMAICA: A STRATEGIC PROPOSAL  
FOR RURAL DEVELOPMENT**

January 1994



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**JAMAICA:  
A STRATEGIC PROPOSAL FOR  
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## **FOREWORD**

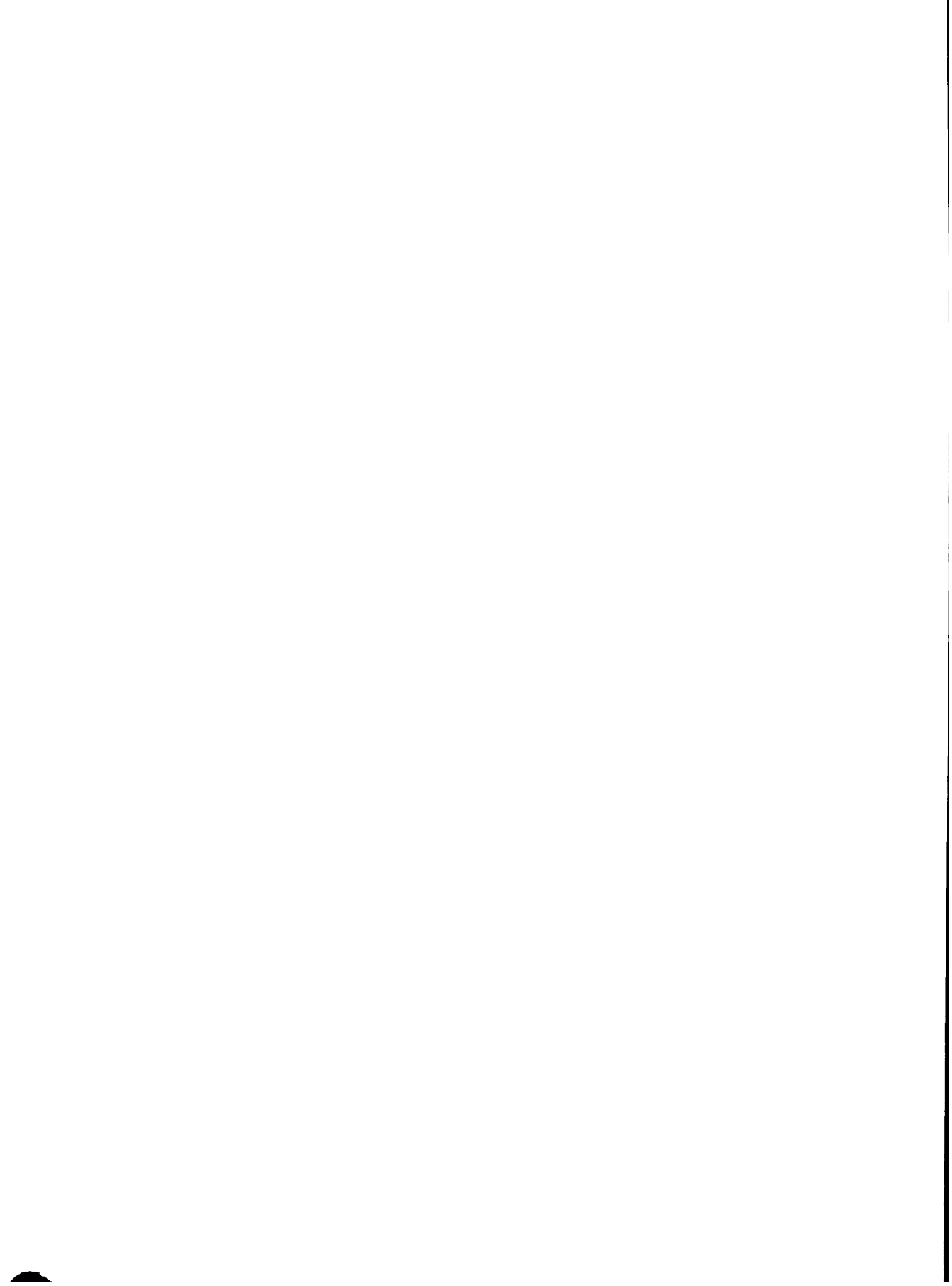
IFAD started its operations in Jamaica back in 1982 with a credit project for smallholders (100-JA) cofinanced by the Inter-American Development Bank (IDB). The total cost of the project was USD 25 million, of which IFAD financed USD 10 million, the IDB USD 10 million, and the beneficiary country the remaining USD 5 million. Project 100-JA was completed in 1989 with generally good results.

The second IFAD intervention was Project 217-JA, a rural development project for hillside farmers, approved in 1987, with effectivity conditions met in December 1988. The cost of this project is USD 14.2 million, of which USD 6.7 million are being lent by IFAD, USD 1.4 million by the Government of the Netherlands, and USD 6.1 million by the beneficiary country. A third project, aimed at providing rural financial services, was approved in 1991 (with a total cost of USD 12.6 million) and is currently being implemented.

This study is the result of a joint effort between IFAD and the Inter-American Institute for Cooperation on Agriculture (IICA) and is dealing with rural poverty in Jamaica. Its specific objectives are: to identify the main groups of rural poor; evaluate their basic resources; examine the structure of the real and potential demand for Jamaica's agricultural products; assess the principal political and institutional obstacles that limit small farmers' possibilities to realize their comparative advantages; propose a strategy to fight poverty; and suggest priority areas for IFAD intervention in the country.

The report consists of nine chapters. An overview of the country is presented in chapter one. Jamaica's macroeconomic performance is considered in chapter two. Chapter three deals with the agricultural resource base, production and potential while chapter four looks at recent agricultural policies. Agricultural institutions are examined in chapter five. Chapter six makes an in-depth analysis of poverty in the rural sector and chapter seven identifies the main constraints to small farmers' development. The last two chapters outline a development strategy to fight rural poverty in Jamaica and identify specific areas for IFAD intervention.

A number of institutions and professionals contributed to the development of this study. Among them, special thanks should be given to the following organizations in Jamaica for supplying fundamental information: Ministry of Agriculture, Ministry of Labour and Social Welfare, Fisheries Division of MINAGRI, Planning Institute of Jamaica, Food and Agriculture Organization (FAO) (Field Office in Jamaica), USAID/Jamaica, Inter-American Development Bank (Office in Jamaica), Jamaica Agricultural Development Foundation, National Development Foundation of Jamaica, Projects for People, and Jamaica's Agricultural Society.



## ACRONYMS

<b>ACB</b>	<b>Agricultural Credit Bank of Jamaica Ltd.</b>
<b>ACBoard</b>	<b>Agricultural Credit Board</b>
<b>ACP</b>	<b>African, Caribbean and Pacific Countries</b>
<b>ADA</b>	<b>Association Development Agency</b>
<b>AIBGA</b>	<b>All Island Banana Growers Association</b>
<b>AMC</b>	<b>Agricultural Marketing Corporation</b>
<b>ARDD</b>	<b>Agricultural Research and Development Division</b>
<b>ASAL</b>	<b>Agricultural Sector Adjustment Loan</b>
<b>ASSIST</b>	<b>Agency for the Selection and Support of Individuals Starting Trade</b>
<b>BECO</b>	<b>Banana Export Company</b>
<b>BOJ</b>	<b>Bank of Jamaica</b>
<b>CARDI</b>	<b>Caribbean Agricultural Research and Development Institute</b>
<b>CARICOM</b>	<b>Caribbean Community</b>
<b>CDC</b>	<b>Commonwealth Development Corporation</b>
<b>CET</b>	<b>Common External Tariff</b>
<b>CGA</b>	<b>Citrus Growers Association</b>
<b>CIAT</b>	<b>International Center for Tropical Agriculture</b>
<b>CIB</b>	<b>Coffee Industry Board</b>
<b>CIDA</b>	<b>Canadian International Development Agency</b>
<b>CIDCO</b>	<b>Coffee Industry Development Company</b>
<b>CIMMYT</b>	<b>International Center for Corn and Wheat Improvement</b>
<b>CIP</b>	<b>International Potato Center</b>
<b>COIB</b>	<b>Cocoa Industry Board</b>
<b>CRIES</b>	<b>Comprehensive Resource Inventory and Evaluation System</b>
<b>CU</b>	<b>Credit Union</b>
<b>CUSO</b>	<b>Canadian University Service Overseas</b>
<b>CVSS</b>	<b>Council of Voluntary Social Service</b>
<b>EEC</b>	<b>European Economic Community</b>
<b>EMO</b>	<b>External Marketing Organization</b>
<b>ESSJ</b>	<b>Economic and Social Survey of Jamaica</b>
<b>FAO</b>	<b>Food and Agricultural Organization</b>
<b>FAP</b>	<b>Food Aid Program</b>
<b>FSP</b>	<b>Food Stamp Program</b>
<b>FY</b>	<b>Fiscal Year</b>
<b>GDP</b>	<b>Gross Domestic Product</b>
<b>GFS</b>	<b>General Food Subsidy</b>
<b>GNFS</b>	<b>Goods and Non-Factor Services</b>
<b>GNP</b>	<b>Gross National Product</b>
<b>GOJ</b>	<b>Government of Jamaica</b>
<b>GTZ</b>	<b>German Technical Cooperation Agency</b>
<b>HAP</b>	<b>Hillside Agriculture Project</b>

<b>HEART</b>	<b>Human Employment and Resources Training</b>
<b>HGP</b>	<b>Housing Guaranty Program</b>
<b>HRDP</b>	<b>Human Resource Development Program</b>
<b>IBRD</b>	<b>International Bank for Reconstruction and Development</b>
<b>IDB</b>	<b>Inter-American Development Bank</b>
<b>IFAD</b>	<b>International Fund for Agricultural Development</b>
<b>IFS</b>	<b>International Financial Statistics</b>
<b>IICA</b>	<b>Inter-American Institute for Cooperation on Agriculture</b>
<b>IMF</b>	<b>International Monetary Fund</b>
<b>IPCBN</b>	<b>Integrated People's Cooperative Bank Network</b>
<b>ISER</b>	<b>Institute of Social and Economic Research</b>
<b>JADF</b>	<b>Jamaica Agricultural Development Foundation</b>
<b>JARP</b>	<b>Jamaica Agriculture Research Program</b>
<b>JAS</b>	<b>Jamaica Agricultural Society</b>
<b>JBPA</b>	<b>Jamaica Banana Producers Association Limited</b>
<b>JCTC</b>	<b>Jamaica Commodity Trading Corporation</b>
<b>JEA</b>	<b>Jamaica Exporters' Association</b>
<b>JLA</b>	<b>Jamaica Livestock Association Ltd.</b>
<b>JLP</b>	<b>Jamaica Labor Party</b>
<b>KMA</b>	<b>Kingston Metropolitan Area</b>
<b>KSA</b>	<b>Kingston and St. Andrew</b>
<b>LFS</b>	<b>Labor Force Service Survey</b>
<b>MCP</b>	<b>Milk Collection Program</b>
<b>MIDA</b>	<b>Micro-Enterprise Development Agency</b>
<b>MINAG</b>	<b>Ministry of Agriculture</b>
<b>NDFJ</b>	<b>National Development Foundation of Jamaica</b>
<b>NFAP</b>	<b>National Forestry Action Plan</b>
<b>NGO</b>	<b>Non-Governmental Organization</b>
<b>NHT</b>	<b>National Housing Trust</b>
<b>NIS</b>	<b>National Insurance Scheme</b>
<b>NPC</b>	<b>National Production Council</b>
<b>NSSS</b>	<b>National Shelter Sector Strategy</b>
<b>ODA</b>	<b>Overseas Development Agency</b>
<b>PADF</b>	<b>Pan American Development Foundation</b>
<b>PACE</b>	<b>Program for the Advancement of Childhood Education</b>
<b>PACER</b>	<b>Project Completion Evaluation Report</b>
<b>PAMCO</b>	<b>Project Analysis and Monitoring Company</b>
<b>PCB</b>	<b>People's Cooperative Bank</b>
<b>PCER</b>	<b>Project Completion Evaluation Report</b>
<b>PFP</b>	<b>Projects for People Ltd.</b>
<b>PIOJ</b>	<b>Planning Institute of Jamaica</b>
<b>PL</b>	<b>Public Law</b>
<b>PMO</b>	<b>Producer Marketing Organization</b>
<b>PMU</b>	<b>Project Management Unit</b>



<b>PNP</b>	<b>People's National Party</b>
<b>PSIP</b>	<b>Public Sector Investment Program in Agriculture</b>
<b>R&amp;D</b>	<b>Research and Development</b>
<b>RADA</b>	<b>Rural Agricultural Development Authority</b>
<b>SAC</b>	<b>Social Action Center Ltd.</b>
<b>SAL</b>	<b>Structural Adjustment Loan</b>
<b>SAP</b>	<b>Structural Adjustment Program</b>
<b>SBAJ</b>	<b>Small Business Association of Jamaica</b>
<b>SDR</b>	<b>Special Drawing Rights</b>
<b>SFCP</b>	<b>Small Farmers Credit Project</b>
<b>SFP</b>	<b>School Feeding Program</b>
<b>SIA</b>	<b>Sugar Industry Authority</b>
<b>SIAS</b>	<b>Sugar Industry Associations</b>
<b>SIRI</b>	<b>Sugar Industry Research Institute</b>
<b>SLC</b>	<b>Survey of Living Conditions</b>
<b>SRC</b>	<b>Scientific Research Council</b>
<b>STATIN</b>	<b>Statistical Institute of Jamaica</b>
<b>SWBP</b>	<b>Social Well Being Program</b>
<b>UK</b>	<b>United Kingdom</b>
<b>UNCED</b>	<b>United Nations Commission on the Environment and Development</b>
<b>UNDP</b>	<b>United Nations Development Program</b>
<b>USAID</b>	<b>United States Agency for International Development</b>
<b>UWI</b>	<b>University of the West Indies</b>
<b>UWJ</b>	<b>United Way of Jamaica</b>
<b>WB</b>	<b>World Bank</b>
<b>WFP</b>	<b>World Food Program</b>

### CURRENCY EQUIVALENTS

US\$ 1.00	=	J\$ 22
J\$ 1.00	=	US\$ 0.045

### WEIGHTS AND MEASURES

British		Metric
1 foot	=	0.345 meters (m)
1 mile	=	1.61 Kilometers (km)
1 acre	=	0.45 hectares (ha)
1 square mile	=	2.6 square kilometers (km)
1 pound (lb)	=	0.4 kilograms (kg)
1 cwt	=	50.8 Kilograms
1 ton	=	1.016 tonne
2205 lb	=	1 tonne

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## **EXECUTIVE SUMMARY**

Jamaica is the third largest island in the Caribbean. The physiography of the country is largely mountainous with less than one-half of it being 1,000 feet and more above sea level. It also has plateaux and plains mainly in the southern and central areas, respectively.

The country is a Constitutional Monarchy, having a Parliamentary Democracy and is a member of the British Commonwealth. The Queen is represented by a Governor General who is appointed on the advice of the Prime Minister. The Parliament is composed of the Queen, House of Representatives and the Senate. The main political parties are the Jamaica Labour Party (JLP) and the Peoples National Party (PNP). The PNP governed Jamaica between 1972 and 1980. Subsequently, the country was ruled by the JLP until 1988 after which the PNP took power.

Between 1980 and 1991, Jamaica's population recorded an average annual rate of growth of 1.2% expanding from 2.14 million to 2.44 million respectively. In 1991, approximately 50% of the population lived in rural areas and almost 5% was in the country's capital, Kingston.

**Recent Economic Trends.** The principal sectors of the Jamaican economy are services, manufacturing, mining and agriculture (including forestry and fisheries). Of these, the services sector is the most important in terms of contribution to GDP. In 1980-91, the average contribution of this sector to GDP was 64.4%, while manufacturing accounted for 12.6%, construction and installation 7.6%, mining and quarrying 7.4%, and agriculture 6.9%. The economic structure also includes a sizeable informal sector which has progressively increased in the last three decades. It is estimated that the contribution of the informal economy to GDP averaged between 14% and 23% in the 1962-85 period.

After experiencing a significant deterioration in the 1970s, the Jamaican economy declined further in 1980-85 and then recuperated during the rest of the decade. In recent years, the domestic growth have slowed. The economy recorded real growth of 4.8% in 1990 but only 0.2% in 1991.

The services sector performed relatively well in the last decade. It recorded an average real growth rate of more than 3.5% per year and increased its contribution to GDP from 58% in 1980 to nearly 63% in 1991. Growth in the construction sector was very impressive in the 1987-89 period, averaging nearly 16% per year, before declining rapidly in 1990 and 1991.

Following a period of stagnation in 1980-85, the manufacturing sector experienced a resurgence in growth, averaging more than 4.5% per year in real terms between 1986 and 1990. The mining sector performed poorly in the first half of the 1980s, declining by an average of 6% per year. However, the low performance was arrested in the second half of that decade. By 1990, output and exports of bauxite and alumina were almost double the level achieved in 1985. The tourism sector also experienced strong growth in the second half of the 1980s. Total visitor arrivals exceeded 1 million for the first time in 1987, with the number of stopover visitors increasing approximately 6% per year and cruise passengers nearly doubling over the 1985-90 period.

The agricultural sector did not expand during the 1980s. Between 1980 and 1989, this sector recorded an average real growth of -0.9% per year, with positive growth occurring in only four years of that period. The performance has varied in recent years, with real growth in 1990 being the highest in the last fifteen years (12.1%) followed by a -0.4% decline in 1991.

Jamaica's balance of payments presented mixed results during the last decade. The current account balance experienced a cyclical movement in the period 1980-91. It increased by more than 100% between 1980 and 1982, declined in 1983-84 and increased again in 1985. Since 1986, it reduced rapidly in response to a decline in oil prices, the recovery of external demand for bauxite-alumina and the lagged effects of exchange rate depreciation on earnings from tourism and non-traditional exports. As a proportion of GDP, the current account balance peaked in 1985 at 17.3%. Between 1980-85, it averaged 11.7% compared to 5.5% from 1986 to 1991.

Jamaica has relied on large inflows of foreign capital to improve its balance of payments situation. With the exception of 1986, net capital inflow averaged more than US\$ 250 million per year since 1980. In 1986, the capital account was only marginally positive because of a reduction in the disbursements from bilateral and multilateral donors, particularly for balance of payments support. Since 1987, capital inflows have improved marginally, in part due to the government's divestment program and foreign direct investment in tourism, agriculture and manufacturing. In 1991, net capital inflow was reduced significantly to only US\$ 77.4 million, and the country's international reserves deteriorated.

The persistence of large fiscal deficits, together with the government's reluctance to devalue the Jamaican dollar and its unwillingness to implement tight demand-management policies, contributed to a current account deficit of 11.3% of GDP in 1981. This deficit continued to increase thereafter averaging 13.8% of GDP in 1982-85. In view of the previous economic results, the government implemented a comprehensive reform program in 1986-89. Revenue enhancing measures together with fundamental tax and financial sector reforms were implemented. These measures reduced dramatically the overall deficit of the Central Government from 15.7% of GDP in 1982-84 to 2.3% in Fiscal Year (FY) 1986/87. Since FY 1988/89, however, the favorable trend in deficit reduction was reversed in large part due to the surge in reconstruction related to expenditures made necessary by Hurricane Gilbert.

Total consumption expenditure experienced a steady real growth in the 1980s that averaged about 2.4% per year. This performance was largely due to increases in private consumption since public consumption expanded by less than 0.5% per year. In the 1990's, real consumption has declined sharply as the government continued its efforts of tight demand management.

Jamaica had an exceptionally high dependence on external savings during a large part of the 1980s. It jumped from 5.4% of GDP in 1980 to an almost constant 12% in 1981-85. For the most part, this was a consequence of the trade imbalance. The importance of external savings

declined in the second half of the 1980s. It decreased to about 3.1% of GDP in 1986 and remained at relatively low levels through the rest of the decade.

Jamaica entered the 1980s with a high inflation rate: 27% in the first year. The rate declined sharply in 1981 (12%) but accelerated in 1983-85 due to public sector wage increase, higher private sector wage settlements and depreciation of the Jamaica dollar. Subsequently, the rate declined significantly in 1986 (14.8%) and 1987 (6.7%). In the first quarter of 1988, the growth in prices further decelerated, due to lower food price changes and the introduction of a national wage guideline in FY 1987/88 which allowed only for a 10% wage increase. Since 1989 inflation has trended upward recording 14.3% in that year, 22.0% in 1990 and 51% in 1991.

Jamaica's labor force grew from 0.98 million in 1980 to 1.07 million in 1991. Parallel to this, the employment level grew from 72.7% of the labor force to 84.6% over that same period. In recent years, the employment rates for both males and females have increased significantly. In 1991, employment for males and females expanded by 1.0% and 1.7% respectively, with more females securing employment compared with males. Moreover, employment among female-headed households increased (2,100) while that of male-headed households decreased marginally (900). Despite this, the unemployment rate among women continued to be high averaging more than 20% in 1987-91 compared to 15% for men.

Real wages barely increased in Jamaica in the last decade and a half. While nominal wages increased due to high inflation rates and trade union pressures, real wages often lagged behind changes in the cost of living. The national minimum real wage in 1990 was only J\$ 2 per day higher than the 1980 level. Since 1990, inflation rates have been high and it is estimated that real wages have declined between 10% and 20%, particularly for minimum wage and lower income groups.

Jamaica's foreign debt imposes a significant burden on future economic growth. The country's total outstanding external debt at the end of 1991 amounted to US\$ 3.9 billion (116% of nominal GDP) while the debt service absorbed about 27% of total export earnings (Table A.6)<sup>1</sup>. Parallel to this, net capital inflows have declined in recent years. Thus, the debt service has increasingly required the use of domestic saving, and the fiscal position has become severely constrained because of the costs to meet accumulated debt obligations.

**Agricultural Policies.** The development of Jamaica's agricultural sector during the last decade was influenced primarily by policies aimed at economic stabilization and structural adjustment. During the 1980-86 period, the program for the agricultural sector was intended to increase production, productivity and agricultural exports through a set of incentives and reforms in the areas of marketing, pricing, credit, trade, land titling, disease control, agricultural research and extension.

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<sup>1</sup> At the end of 1992, Jamaica's external debt is estimated to be in excess of US\$4,3 billion.

In 1987-89, the government continued to implement the agricultural policy reforms that were initiated in the first half of the decade. In this three year period, a major review of the agricultural sector was done by the government and the multilateral agencies. This review resulted in the design of the ASAL which began in 1987 and continued through 1990, when an agreement was reached with the IBRD on certain policy conditionalities. As with the SAP, attempts were made to rationalize macroeconomic policies with some sector-specific policies that were proposed. In addition, with other sectoral adjustment loans coming on stream during this period, the multilateral institutions placed conditionalities in these loans that related specifically to the agricultural sector, such as adjustments in the trade and food pricing policies under the Trade and Finance Sector Loans. Furthermore, a land titling project funded by the IDB was initiated in 1988 to accelerate the land titling efforts of the government.

Agriculture was the first sector to execute a Sector Adjustment Loan in the 1990s. The ASAL became effective on March 28, 1990, with the first tranche of US\$ 12.5m disbursed on March 30, and the second tranche of US\$ 12.5m disbursed on March 26, 1991.

The ASAL was aimed at supporting the implementation of those structural reform measures in the sector that were delayed under the earlier SALs, as well as encouraging more efficient allocation of resources, and removing the monopoly and monopsony powers of private and public sector entities involved in trade. The rationale for implementing the ASAL was the need for specific agricultural policy and institutional reforms. Most of these reforms were supportive of the earlier reforms in the sector and they were aimed at: (i) improving agricultural pricing policy by rationalizing the trade regime and eliminating untargeted food subsidies administered through the JCTC; (ii) adjusting agricultural credit policy; (iii) further deregulation of citrus and cocoa marketing; (iv) supporting the land divestment and land titling programs; (v) addressing the problems of pesticide use; and (vi) ensuring the pursuit of appropriate macroeconomic policies that were consistent with efficient development of the agricultural sector.

**Impacts of the Agricultural Policies.** The structural adjustment policies placed strict limits on the government's budget, resulting in a consistent reduction in the allocation of resource to various sectors, including agriculture. There were significant expenditure reductions in agricultural extension, research, physical planning and soil conservation. Small farmers were significantly affected by the decline in government expenditure in the sector since they constitute the principal target group for the support services provided in these areas.

The trend in domestic food production in 1980-91 was one of stagnation. Although there were large fluctuations over the period, the output level of the domestic sub-sector in 1991 was slightly above the 1981 level. What is significant is that agricultural production in general and domestic food production in particular did not keep pace with population growth over that period.

With the exception of the roots and tubers group, the domestic crop sub-sector was essentially the most affected by the early SAP policies. This sub-sector was further affected by the significant reduction in the delivery of support services to small farmers. In addition, the

devaluations which occurred over the years, increased the cost of imported inputs but output prices did not increase commensurately because of the decline in consumers' real incomes.

The overall performance of the export sector was mixed but encouraging. After a decline of nearly 16% in 1985, agricultural export earnings grew by almost 25% in 1986, 22% in 1987 and 12% in 1988. By 1991, foreign exchange earnings from traditional exports had risen to US\$ 160 millions an increase of more than 100% over the 1981 level.

The traditional export crop sub-sector showed some improvements over the 1984-86 period, although these were less than expected under the SAP. Since 1986, the value of traditional exports have grown steadily. Exports of non-traditional crops has also increased in some years, indicating a positive response to the policy initiatives undertaken by the government.

The private sector responded favorably to the government's program of diversifying agricultural production and creating new export opportunities. As a result of the reform initiatives, exports of winter vegetables increased rapidly up to 1986, but fluctuated since and have generally been below their targets. Foreign exchange earnings, however, increased fairly steadily up to 1987 and then levelled off.

**Agricultural Institutions.** There are two sets of institutions which provide support to the agricultural sector in Jamaica: public and non-public. The major public agencies are: the Ministry of Agriculture (MINAG), the Agriculture Credit Bank (ACB), and the Rural Agricultural Development Authority (RADA). There are a number of External Marketing Organizations (EMOs) or Commodity Boards, which, although largely composed of producers and not supported by the Ministry's Budget, are linked legally to the Ministry.

**Agricultural Public Institutions.** The public sector institutional framework has undergone fairly significant changes over the past ten years, as the government has implemented its Adjustment Programs. Since 1989, the government's policy has been to return to the MINAG the responsibility for the implementation of all major policies, the overall supervision and control of the government's agricultural program, and the re-building of the support services, especially research and extension for the small farm sector. In addition, the government has maintained its focus on attracting investors, and continued its policy of facilitating the private sector in productive activities. As the economic liberalization process continues, new avenues of collaboration with the private sector are being developed not only at the operational or implementation level, but also at the policy and planning level. The creation of the National Production Council (NPC), is an example of this latter type of collaboration. In addition, the MINAG has been reviewing its functions with a view to determining which of these could be best dealt with by the private sector.

**Producers' Organizations.** Beginning in 1983, significant changes took place in the operations of the Commodity Boards, with the objective of reducing their monopsony powers. In March of that year, the Ministry of Agriculture issued deregulation guidelines for coffee,

cocoa, citrus and pimento which relaxed the export monopoly of the Boards and other agencies by allowing approved growers/exporters to export directly if certain conditions were satisfied.

The institutional framework and functioning of the Commodity Boards have been the focus of World Bank (WB) reviews. Thus certain changes were included as conditionalities in the three Structural Adjustment Loans (SAL). In general the restructuring carried out under those SALs was intended to streamline the operation of the Commodity Boards, to make them more efficient in their marketing function and offer a more market-related price to farmers. Consequent to this restructuring, most of the auxiliary services such as R&D, extension and crop care were transferred from the Commodity Boards to other agencies and institutions including the Ministry of Agriculture.

**Non-Governmental Organizations (NGOs).** There are approximately 300 private voluntary organizations in Jamaica, from which only 20 can be considered organized NGOs. Many of these organizations work as an umbrella to smaller NGOs, such as: Jamaica Agricultural Society (JAS), Product Market Organizations (PMOs) and Peoples Cooperative Banks (PCBs). Others organizations are fairly active in rural development like the National Foundation of Jamaica (NDFJ).

**Rural Poverty.** based on a least-cost basic-needs basket, a poverty line, defined as the money income necessary to purchase this basket was calculated for both urban and rural areas. In the case of rural inhabitants, it was estimated that, in 1989, an adult needed J\$ 3,568/year (US\$ 621) to purchase the basic needs basket. According to that poverty measure, in 1989 nearly one-third of Jamaicans did not have that income, and approximately 70% of those falling below the poverty line lived in rural areas.

The high concentration of poverty in rural Jamaica is further supported by the fact that, approximately 82% of the poorest quintile of the population live in rural areas. Moreover, the higher welfare status of urban inhabitants is also indicated by the mean per capita consumption expenditure. In rural areas this is J\$ 613 while in "Other Towns" and in Kingston Metropolitan Area (KMA) it is J\$ 944 and J\$ 1,208, respectively.

A further characteristic of poverty in Jamaica is that one of the poorest groups are persons mainly self-employed in agricultural activities. Data from the 1989 SLC shows that households headed by a self-employed agricultural worker have a mean per capita expenditure of US\$ 690, which is 71% of that of the typical Jamaican household. In contrast, households headed by professional, technical or administrative workers have a mean per capita expenditure of US\$ 2,109.

In addition to the above, the existing poverty situation in Jamaica is further complemented by the evolution of the following social indicators.

**Access to basic services.** According to the SLC, in 1991, 24% of the country's population lacked access to potable water and more than one-half did not have modern sanitary facilities.

**In the case of rural areas the corresponding figures were worse. Specifically, 94% of the urban population had access to private tap water vis-a-vis 60% in rural areas. With regard to sanitation, the ratio of people lacking proper sanitary facilities in rural areas compared to the KMA is more than 3 to 1. There is a predominance of pit latrines (73%) in rural areas with only 25% having access to water closets. In contrast, in the KMA and in "Other Towns", 80% and 47% of the respective populations had access to water closets.**

**Education Status.** According to the 1988-89 indicator on educational status, Jamaica has achieved universal primary education. At this level of education, the island is on par with most Caribbean countries. In the case of secondary and tertiary education, however, the enrolment ratios for that period were lower than the average of other Caribbean countries.

**Health Status.** Jamaica compares favorably with its Caribbean neighbors in infant mortality rate (under age one and under age five). In 1990, the mortality rates for the under age one and under age 5 groups in Jamaica were 16 and 20 per 1,000 live births, respectively. Of the other Caribbean countries only Barbados and Trinidad and Tobago had lower rates. The country also compares favorably with other Caribbean countries in the area of low birth-weight babies. For the 1980-88 period, Jamaica had only 8.0% low birth-weight babies, the lowest rate relative to that of other countries in the region.

**Food Security and Nutritional Status.** Jamaica is dependent on imports to meet a large part of its food needs. The country increased its import dependence, from an average of 61% in the 1970s to 66% in 1986-88. Although food imports declined in the first two years of the current decade, this was largely associated with a significant depreciation of the Jamaican dollar, as well as with unusually high imports in 1989 following the hurricane, and the removal of subsidies from some basic food items.

With regard to food consumption, the latest two SLC show that in absolute terms, the mean annual food consumption expenditure in 1991 was smaller than that of 1990 for all categories of consumers. However, as a percentage of total consumption, food consumption expenditure by both the poorest and rich increased in 1991 to 65.6% and 51.4%, respectively. This is largely explained by the surge in food price increases and a general decline in real incomes.

At the national level, Jamaica's malnutrition status is high (affects 9% of the population). In terms of geographical distribution, the rural areas recorded almost 10% in 1989-91 compared to 5% for KMA and nearly 11% for other towns. The SLC of 1989, 1990 and 1991 indicate that malnutrition in children (based on weight-for-age criterion) was more prevalent in the poorest quintile of the population.

With regard to the nutritional status of children, three indicators are used to measure it: weight, wasting and stunting. The geographic distribution of underweight children shows no discernible pattern, but both the 1989 and 1991 SLC indicate a larger number in the rural areas compared to the other regions of the country. In the case of stunting and wasting, there is no

indication of the predominance of these among the poorest quintile or it being concentrated in the rural areas.

**The Rural Poor.** Using income as a proxy for welfare level, six main groups of rural poor could be identified in Jamaica as living below the poverty line: small farmers, artisanal fishermen, households headed by women, unskilled wage laborers, unemployed youth and the retired and aged rural citizens. Based on demographic data for 1991, it is estimated that the six groups identified comprise about 713,000 persons or approximately 60% of the rural population.

**Recent Evolution of Poverty.** The magnitude of poverty seems to have increased in the last decade relative to earlier periods. There are two indications that reflect this increase: (i) the decline in the average welfare level as indicated by lower per capita real income; and (ii) an increase in programs by both the government and non-government organizations to alleviate poverty.

**Government's Efforts to Alleviate Poverty.** There have been a number of public programs to address poverty in Jamaica. In keeping consistent with a market-oriented approach to economic management, poverty alleviation has taken two main forms: (i) the provision of more resources for production (land, materials, credit and extension services); and (ii) targeted food and education supports for the most vulnerable (Food Aid Program, and Program for the Advancement of Childhood Education). Added to these are the regular programs such as school feeding, provision of pensions and various public assistance activities.

**Constraints to Smallfarm Development.** Jamaica's topography poses a serious constraint to agricultural development. Approximately 80% of the land has been classified as having slopes between 15 - 30 degrees. These slopes make the production of annual crops difficult and make soil conservation an imperative if massive soil erosion is to be prevented. In addition to the above, the main environmental constraints include the following: (i) soil erosion and salinization; (ii) underground water; (iii) deforestation; (iv) environment management; and (v) institutional coordination.

Agricultural production in Jamaica is greatly constrained by widespread dependence on rainfall and by a deficient irrigation system. The result is erratic production and unreliable supplies of products to the domestic market. Total irrigated area amounts to 36,100 ha. However, due to the deterioration of intakes, wells and distribution systems, only 25,700 ha. are currently irrigated. The operation of an efficient irrigation system in Jamaica has been constrained by a number of factors, such as: (i) budgetary allocation; (ii) operation and maintenance support; (iii) water loss, distribution and salinity; and (iv) energy supply.

The need for land reform or better rationalization of the land distribution system has been recognized by successive governments in Jamaica. Consequently, there has been a large number of settlement programs including land lease schemes; integrated rural development programs with settlement components; pioneer farms for landless youths; and more currently, land divestment programs. In spite of the efforts made, there is a number of constraints related to the



land tenure system that limits smallfarm development. Among them the following should be highlighted in view of their greater importance: (i) land titling; (ii) proof of ownership; (iii) rented or leased land; and (v) institutional arrangements.

The agricultural research system is in need of reorganization and requires clearly defined policies and priorities as well as an appropriate institutional structure. At the moment, agricultural research is fragmented with a number of institutions and agencies involved. In addition to this the agricultural research service face a limited budget and an inadequate research work program. Parallel to this, the agricultural extension service provided by the Rural Agricultural Development Authority (RADA) face the following constraints: (i) inadequate institutional arrangement; (ii) limited budget; (iii) poor management and inadequate staff; and (iv) limited resources to train farmers.

There has been a general inefficiency in the domestic marketing system, due largely to inadequate market intelligence, insufficient information dissemination, underdeveloped marketing infrastructure, and poor marketing organization. This has contributed in many cases to heavy post harvest losses, and to artificial gluts and shortages with corresponding fluctuation in prices.

Experience of credit programs for small farmers indicates that their access to credit is frequently affected by their inability to meet collateral requirements; the stringent credit conditions; and a perception that payment schedules are too burdensome. The smallfarm development has been also constrained by a relatively high interest rate for agricultural credit. The decision to link interest rates for agricultural loans with the treasury bill rate has contributed to substantially increases the former. This interest rate regime has been blamed for the current low investment in the sector and has curtailed the development of new projects for funding by international donors.

The Cooperative movement has not had a very successful history in Jamaica. The main reason is that these organizations did not evolve in Jamaica as a result of the perceived needs of people. They were mainly promoted as part of the government's program rather than as organizations that could assist to develop the sector. In addition, the individualistic behavior of the agricultural producers has also been a deterrent cultural constraint to the development of these organizations.

In spite of the importance of this kind of organization for agricultural development, it has been difficult to operationalize it successfully, because of the above-mentioned problems. It should be mentioned however, that some of the difficulties are closely related to the approach used to establish these organizations rather than to their acceptance by farmers. Therefore, if adequately presented to farmers the cooperative organization could become an important institution for the development of the smallfarm sector.

In the last decade, Jamaica experienced an increasing tendency for donor agencies to use NGOs as the main vehicle of disbursement of funds. This trend is likely to continue in the near future, since there is an expressed concern to move away from centralization and

bureaucratization. Moreover, there is a favorable legal framework and political climate which encourages collaboration between the Government and NGOs. An evidence of this is that the Government has become involved in direct and indirect funding to NGOs.

Notwithstanding the collaboration that NGOs can provide, they face a number of constraints that affect their role. Among others, they lack working capital and are under-capitalized; they are highly dependent on donors, and have inadequate staffing and technical expertise; they lack financial management capability and specialization; and their diversified activities constrain them from accumulating a critical mass of skills and experience.

**Towards a Strategy for IFAD in Jamaica.** The government's basic strategy for agricultural development consists of achieving a level of sectoral self-sustaining growth with small farmers playing a major role. The Five-Year National Plan 1990-95 emphasizes the expansion of traditional and non-traditional export crops, as well as production of selected crops and livestock products for the domestic market to improve food security and increase import substitution. It also places emphasis on the adoption of appropriate technology and expansion of research and extension activities to assist farmers to improve productivity, farm income and living standards. Furthermore, the strategy includes a continuation of earlier programs such as the land divestment program, the land titling program, the hillside development program and improvement of the credit delivery system.

The major lessons learned by IFAD from the Small Farmers Credit Project showed that: (i) there were no sound agronomic or technical bases for the anticipated increases in yields under the project; (ii) the project did not include activities for savings mobilization or other financial services which could have improved the ability of the small farmer credit system to move towards greater sustainability; (iii) inadequate attention was paid to institutional development, particularly to the PCBs as it was assumed that these institutions would develop with increased credit activities financed by the project; (iv) project monitoring was not an integral part of project management; (v) the problems experienced between the various agencies (MINAG and the ACB) suggest that only one institution should play a lead role and that institutional responsibilities should be clearly defined; and (vi) credit and marketing activities in agriculture was not closely linked.

Regarding the Small Hillside Farmers Support Project, a project's management review done in June 1992, found that the project was achieving its objectives with respect to the number and volume of loans approved and regarding the acreage developed. By that date, 1,193 loans were approved, comprising 74% of the total projected (1,606). However, the rate of disbursements to commitments were low, mainly because: (i) many farmers who had loans approved had not proceeded with the development of their farm development plans; and (ii) delay by the Commodity Boards in submitting claims to PC Banks for material supplied to farmers.

The Rural Financial Services Project was approved in 1991 but it has not been implemented yet because the ACB is putting in place the necessary conditions for project implementation. The

project's development is based on the PCER of the Small Farmers Credit Project, which indicates that the demand for financial services in rural areas could be met by the development of grassroots institutions capable of meeting the needs of the rural poor. Accordingly, the projects' objectives are: (i) institutional support to the PCBs; ii) providing credit to the target group; and iii) strengthening support services, primarily through RADA and CIDCO. The total cost of the project is US\$ 13 million.

Given the specific situation of the rural poor and the severe constraints of the government to execute its programs to alleviate rural poverty, IFAD's strategic framework for intervention in Jamaica should be to support on-going efforts and implement additional rural development activities. This strategy should be a four-pronged one that focuses on four main areas: (i) small farm agriculture and agro-ecology; (ii) agro-industry; (iii) institutions, and (iv) infrastructure.

The small farm and agro-ecological activities should seek to: (i) promote the development of appropriate farming systems for small hillside farmers that could increase productivity, food supply and farm incomes; and (ii) improve protection and management of the natural resource base. It focuses on addressing specific constraints at the farm level, taking into consideration the short and medium term objectives of small farmers and environmental consequences. They also include targeting activities that will increase incomes of farmers who are women and those of small scale fishermen.

The agro-industrial activities should seek to strengthen and expand linkages between the agricultural and agro-processing sectors, in order to alleviate market constraints for small farmers and increase rural employment opportunities for women, the unemployed and the landless. The strategy is to address those constraints that contribute to the weak linkages between agriculture and industry such as high production costs, irregularity of supplies, poor product development, use of inadequate processing technology and underutilization of plant capacity. Among other factors, it would involve increasing farm production of better quality products (fruits and vegetables), providing credit to improve and expand processing operations, developing appropriate technology and promoting training activities.

The institutional activities are mainly supportive of the previous areas of the strategy. The objectives of these are: (i) to support and strengthen those institutions that have responsibility for implementing activities related to the agro-ecological and agro-industry approaches; and, (ii) to improve the socio-economic status of rural women and unemployed youths by providing them with increased access to resources (land, credit and technology) and training.

The infrastructural activities focus on addressing the problems of poor infrastructure that affect small farm agricultural production, marine fishery and agro-industry. These are supportive also of the first two areas and they consist of investment activities to improve and upgrade the basic infrastructure - roads, transportation, processing facilities, marketing facilities (packaging, warehousing, cold storage, etc.). These activities should be specific to meet the needs of each target group and their location. The strategy includes collaboration with the public and private sectors as well with non-government organizations.

Given the activities executed by other institutions and considering the proposed strategy, IFAD should examine the possibilities to develop joint efforts against poverty with other donors and international organizations. Specific areas of institutional cooperation should be explored that focuses on the main rural poverty groups identified previously.

**Possible Areas for IFAD's Intervention.** IFAD's possible areas of intervention include: (i) agro-forestry; (ii) agro-processing; (iii) research and development; (iv) extension services; (v) credit; (vi) dairy industry; (vii) rural women; (viii) assistance to JAS; and (ix) infrastructural support.

IFAD's intervention in agro-forestry would support the government's efforts as well as complement initiatives of other organizations to invest in agro-forestry development, by funding activities related to establishment of demonstration farms, seedling production, reforestation of severely damaged areas and development of tree plantations. Incentives will have to be provided for farmers to participate. These could include input subsidies, grant funding (to reduce risk of income loss), support funding and technical assistance to the government and NGOs to organize and train farmers in agro-forestry activities. Three specific areas of intervention related to this activity include: (i) supporting agro-forestry activities on hillsides; (ii) support to yam production; and (iii) assistance to the GOJ's NFAP.

IFAD's support to agro-processing could be provided in collaboration with the government, farm groups, the JAS, womens' organizations and NGOs. There are six possible areas in which IFAD could intervene: (i) technical assistance to the GOJ to identify priority commodities to be processed, based on the existing processing facilities, local and export market potential; (ii) support to the development of fruit orchards; (iii) funding to rehabilitate existing plants and to invest in new plants and equipment; (iv) support development of small micro-enterprises and home-based processing activities; (v) develop training programs for rural women and unemployed youths in agro-processing activities; and (vi) provide assistance to develop and monitor acceptable standards for products.

IFAD's intervention in research and development could be to support the Government's effort and those of other institutions (IICA, UWI, CARDI, and JARP) to develop an effective research system to address the technology constraints of hillside farmers. More specifically, the possible areas of intervention are: (i) technical assistance to restructure and improve the agricultural research system, starting with a clear definition of the institutional framework and a research program; (ii) support to the development of a farming systems approach to hillside agriculture; (iii) complement the government's resource base to develop strong and effective public sector institutions involved in research in crop and livestock production, forestry and fisheries; (iv) support activities to generate and adapt appropriate technology for small farmers, artisanal fishermen and for agro-processing; (v) finance development of strong information base to support research and development; (vi) assistance to develop adequate legislation to reduce praedial larceny and regulate natural resource use including exploitation of forestry and fishery resources, land security and its utilization; and, (vii) assist the government to develop adequate

**mechanisms to coordinate the agricultural research activities of public, non-public and international organizations.**

**While research is focused on developing appropriate technologies for the small farmers, there is a clear need to disseminate these effectively. Several institutions including RADA, JAS, JADF and other NGOs could be supported by IFAD to improve extension services to farmers. Through technical assistance and funding for training, IFAD could assist RADA and other institutions to develop stronger linkages with the MINAG's Research Division, and develop least cost methods of providing extension support to farmers.**

**The strategy should include the provision of a line of credit to the Micro Enterprise Development Agency (MIDA) to develop non-agricultural enterprises which could support a wide cross-section of the rural poor, including the landless, women, young persons and the unemployed. Short and medium-term loans could therefore be made available to finance activities including food processing, dressmaking, retailing, transportation, bricklaying, carpentry and masonry.**

**Through IFAD, marketing credit could be provided for crop purchasing (short term), transportation (medium term) and for rudimentary infrastructure for assembly, grading and storage of products handled by groups. This type of credit would benefit women higglers in particular, given their high participation in this activity. Assistance could be provided to the IPCBN's strategy to include development of a savings program, which could provide the PCBs with additional resources to sustain their lending operations, and also provide farmers a future source of equity.**

**IFAD support to the dairy industry should involve support to the MINAG's Research Development Division for herd development of the Jamaica Hope. This would involve providing financial support to purchase and rearing breeding stocks for eventual delivery to farmers, using the facilities at Bodles and Montpelier research stations to breed these animals. It would also include an outreach program in which in-calf heifers would be distributed to participating farmers by RADA.**

**IFAD's intervention to improve the technology and to strengthen the extension system would contribute to the alleviation of women's workload in agricultural production. IFAD's strategy should also include support to a comprehensive training program for rural girls and adult women in a wide range of skills including those traditionally reserved for men. A critical part of the strategy should therefore include the expansion of rural day care centers. Most centers currently target children of the middle class, while those from poor families are precluded because of the high costs. The expansion of such centers in the rural areas would allow women to participate more effectively in the development process. In addition, proper training of staff and strengthening rural institutions could be done to sensitize women's concerns.**

**IFAD's strategy could include technical assistance to help the JAS play a more effective role as a farmers organization. Assistance is also required to implement a modern accounting**

system to improve the organization's viability and to develop a comprehensive training program to upgrade the staff on modern ways of organizing farmers. Support could also be provided to the JAS staff more mobile, so they can easily access small farmers located in remote areas.

The resources of the public sector to maintain and develop the infrastructural support for the development of small farmers and other rural activities are very limited. IFAD's intervention could possibly be to assist the government, farmer organizations and NGOs to upgrade certain public infrastructure such as rural farm roads, small farm irrigation systems, rural market facilities and transport.

## I. OVERVIEW

### 1.1 Main Physical Aspects

Jamaica, with an area of 4,411 square miles, is the third largest island in the Caribbean. It is located 90 miles south of Cuba and 100 miles west of Haiti. The physiography of the country is largely mountainous with more than one-half of it being 300 meters or more above sea level. It also has plateaux and plains mainly in the southern and central areas, respectively. The eastern portion of the island is largely composed of metamorphic rocks. This part of the country has unique climatic conditions favoring coffee cultivation. The island is divided into 13 political sub-divisions or parishes which are the principal administrative units (Figure I.1).

### 1.2 Population And Employment

Between 1980 and 1991, Jamaica's population recorded an average annual rate of growth of 1.2% expanding from 2.14 million to 2.44 million respectively (Table I.1). In 1991, approximately 50% of the population lived in rural areas and almost 5% was in the country's capital, Kingston<sup>1</sup>. During the 1980-91 period, the parishes that experienced the highest average population growth rates were St. James (1.6%), Manchester (1.5%) and St. Andrew (1.3%).

Among the major factors affecting population growth, the crude birth rate and the crude death rate have displayed downward trends, while net emigration has increased.

Over the last decade, migration has averaged 20,000 annually, with 80% of these going to the USA, 18% to Canada and 2% to the UK<sup>2</sup>. Contemporary migration patterns show the highest movements occurring among youths (less than 20 years), with an estimated 45% of the total migrants being students and children. This steady pattern of migration

TABLE I.1  
POPULATION STATISTICS, 1980-1991

YEAR	END OF YEAR POPULA.	CRUDE BIRTH RATE*	CRUDE DEATH RATE*	RATE OF NATURAL INCREASE*	GROWTH RATE PER YEAR (%)
1980	2,143.2	27.5	6.8	20.7	0.9
1981	2,181.5	27.5	7.0	20.5	1.8
1982	2,218.7	27.9	6.6	21.3	1.7
1983	2,263.2	27.4	5.6	21.8	2.0
1984	2,296.8	25.2	5.9	18.3	1.5
1985	2,325.7	24.3	6.0	18.3	1.3
1986	2,346.4	23.2	5.7	17.5	0.9
1987	2,355.4	22.3	5.3	17.0	0.4
1988	2,357.9	22.7	5.2	17.5	0.1
1989	2,392.3	24.9	6.0	18.9	1.4
1990	2,415.1	24.8	5.1	19.7	1.0
1991	2,435.8	24.7	5.5	19.2	0.9

\* PER 1000.  
SOURCE: ESSJ.

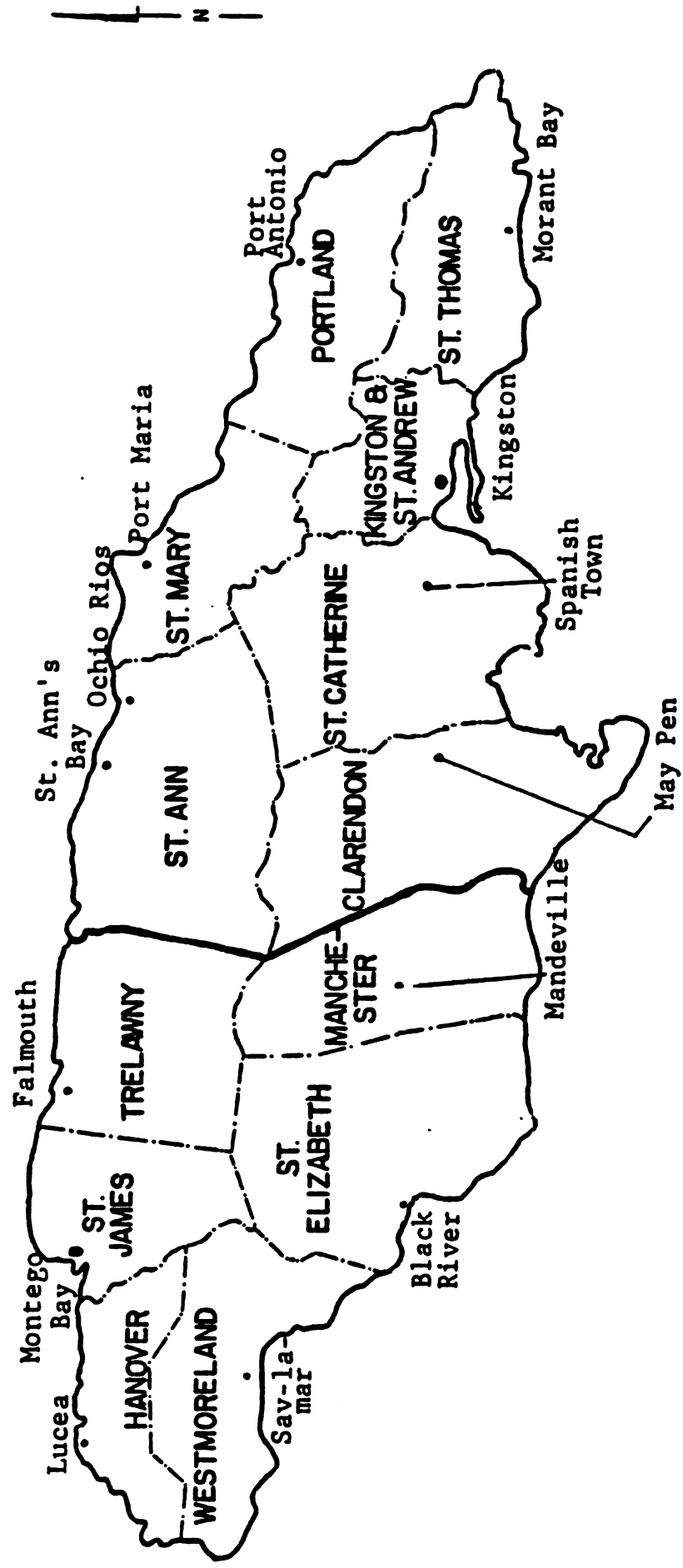
has contributed markedly to the modest rate of population growth.

At the end of 1991, the Jamaican population was almost evenly distributed between males (49.98%) and females (50.02%). In the last decade, the school age population (3-18 years) declined by almost 3%, the working age population (15-59 years) increased by 4% and the dependant population (less than 15 years and over 60 years) expanded marginally by almost 2%.

Jamaica's labor force grew from 0.98 million in 1980 to 1.07 million in 1991. Parallel to this, the employment level grew from 72.7% of the labor force to 84.6%. In recent years, the employment rates for both males and females have increased significantly. In 1991, employment for males and females expanded by 1.0% and 1.7% respectively, with more females securing employment compared with males. Moreover, employment among female-headed households increased (2,100) while that of male-headed households decreased marginally (900). Despite this, the unemployment rate among women continued to be high, averaging more than 20% in 1987-91 compared to 15% for men.

With regard to the sectoral contribution to employment, the services sector remains the major source of jobs. It provided more than 40% of the new job opportunities in

**FIGURE I.1**  
**JAMAICA: PARISHES & MAIN TOWNS**



SOURCE: RURAL PHYSICAL PLANNING UNIT, MINAG.



1987-91. Most of the jobs created were in hotels and restaurants, the wholesale, and in the financial and business sectors. During that same period, total employment declined in the productive sectors, particularly in agriculture, forestry and fishing, and manufacturing, while significant increases occurred in construction.

### 1.3 Political Background

Jamaica attained independence from Britain in 1962. The country is a Constitutional Monarchy, having a Parliamentary Democracy and is a member of the British Commonwealth. The Queen is represented by a Governor General who is appointed on the advice of the Prime Minister. The Parliament consists of a majority party, which is the effective government, and a minority party called "the Opposition". It is composed of the Queen, House of Representatives and the Senate.

The main political parties are the Jamaica Labour Party (JLP) and the Peoples National Party (PNP). The PNP governed Jamaica between 1972 and 1980. Subsequently, the country was ruled by the JLP until 1988, after which the PNP took power.

### 1.4 Social Aspects

Jamaica's social system has evolved largely from that of the pre-independence era. Both color and class, often interrelated, have been critical dimensions of the social system. The society is largely stratified in terms of three classes - usually designated upper, middle, and lower - characterized by distinctive institutional systems. Individual social mobility has put the upper class and especially the middle class in a constant state of flux. Independence and political power have created groups based on ethnicity and/or economics that compete for entrance into the upper class. Downward mobility is also

present, especially among members of the middle class.

The family structure in Jamaica could be considered as fairly unique in the Caribbean. It is characterized by a range of alternative conjugal union types, including visiting unions, common-law unions, and legal marriage. With women's entry into first conjugal union being relatively early (16.8 years), this pattern results in very high illegitimacy rates, with an estimated 70% of children born out of wedlock (non-resident fathers) and a high rate of female-headed households. In addition, especially among the poor and rural people, women and men succumb to cultural values which encourage having as many children as they can.

The education system is comprised of public and private schools. The country is a notable exception of the widespread existence of privately owned, grant-aided schools in the English-speaking Caribbean. In recent years, the estimated enrollments in private primary and secondary schools represented about 7% and 4%, respectively, of the total. Compared to other Caribbean countries, the distribution of expenditures in the sector shows that the share allocated to tertiary education is significantly higher (about 23%) while the amount for primary education is one of the lowest.

During the past decade, when Jamaica experienced acute economic pressures and austerity measures were implemented, there were reductions in public expenditure on education and training. Real expenditures in education in both total and per capita terms peaked in 1982 and has since consistently declined. This has resulted in inadequate provision of physical facilities and equipment, teaching and managerial staff, and appropriate instructional material. The operational efficiency of the sector has been constrained by factors such as a highly centralized bureaucracy, lack of an adequate management information system, insufficient

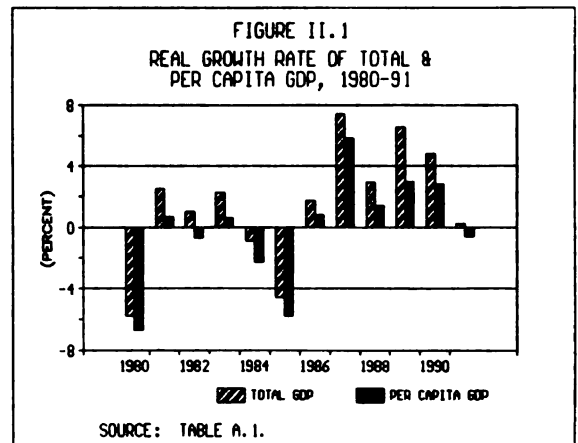
co-ordination and monitoring of programs, unsatisfactory achievement rates, low teacher retention and morale. External factors that adversely affect the system include: fragile family structure and deficient home and community environment; insufficient parental and community participation in educational and training institutions; violence; drugs; low nutritional levels among approximately 15% of pre-primary children; and other negative factors associated with conditions of poverty.

## II. MACROECONOMIC ENVIRONMENT

### 2.1 Economic Structure and Sectoral Growth

The principal sectors of the Jamaican economy are services, manufacturing, mining and agriculture (including forestry and fisheries). Of these, the services sector is the most important in terms of contribution to GDP. In 1980-91, the average contribution of the services sector to GDP was 64.4%, while manufacturing accounted for 12.6%, construction and installation 7.6%, mining and quarrying 7.4% and agriculture 6.9% (Table II.1). The economic structure also includes a sizeable informal sector which has progressively increased in the last three decades. It is estimated that the contribution of the informal economy to GDP averaged between 14% and 23% in the 1962-85 period<sup>3</sup>.

After experiencing a significant deterioration in the 1970s, the Jamaican economy declined further in 1980-85 and then recuperated during the rest of the decade (Figure II.1). The stagnant growth was attributed to both, external and internal factors. In the first case, the most significant factor was the unfavorable international prices for bauxite and alumina. The decline in these prices caused the combined export



earnings of these minerals to drop from an average of two-thirds of total exports in 1980-81 to one-half in 1985.

With respect to the internal factors, failure to fully implement a series of structural adjustment policies contributed significantly to only modest economic achievements.

The fiscal deficit increased in Fiscal Year (FY) 1980/81, and thereafter declined moderately. The persistence of large fiscal deficits, together with the government's reluctance to devalue the Jamaican dollar and its unwillingness to implement tight demand-management policies, contributed to a current account deficit of 11.3% of GDP in 1981. This deficit continued to increase thereafter averaging 13.8% of GDP in 1982-85. In addition, the external debt increased dramatically from US\$ 938.8 million in 1980 to US\$ 2.9 billion in 1983, and to US\$ 3.6 billion by 1985.

In view of the previous economic results, the government implemented a comprehensive reform program in 1986-89. Revenue enhancing measures together with fundamental tax and financial sector reforms were implemented. These measures reduced dramatically the overall deficit of the Central Government from 15.7% of GDP in 1982-84 to 2.3% in FY 1986/87. There

TABLE II.1  
SECTORAL CONTRIBUTION TO GDP, 1980-91 (%)

SECTOR	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
AGRICULTURE, FORESTRY AND FISHING	8.3	8.3	7.6	7.9	8.8	8.9	6.2	6.0	5.6	4.9	5.2	5.2
EXPORT AGRICULTURE	1.4	1.3	1.3	1.2	1.3	1.3	1.1	1.0	1.1	0.9	1.0	1.0
DOMESTIC AGRICULTURE	4.2	4.2	3.7	3.9	4.5	4.7	3.1	3.0	2.6	2.2	2.4	2.4
LIVESTOCK AND HUNTING	2.8	2.4	2.2	2.4	2.5	2.4	1.8	1.8	1.6	1.6	1.8	1.7
FORESTRY	-	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.1	0.1
MINING AND QUARRYING	11.2	8.8	6.2	6.1	6.2	5.2	6.6	6.5	6.0	7.7	8.6	9.1
MANUFACTURING	15.4	15.1	16.0	16.0	15.5	16.3	7.9	8.4	9.4	10.4	10.1	10.1
CONSTRUCTION AND INSTALLATION	5.4	5.3	6.1	6.3	5.9	5.7	7.9	8.4	9.4	10.4	10.1	10.1
SERVICES:	59.7	66.8	66.8	68.2	67.4	67.7	62.8	63.0	63.4	62.1	61.6	62.7
BASIC SERVICES	8.0	8.0	8.0	8.3	8.6	9.2	13.1	13.5	13.4	13.3	13.2	13.4
OTHER SERVICES	51.7	58.8	58.8	59.9	58.8	58.5	49.6	49.5	50.0	48.9	48.4	49.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

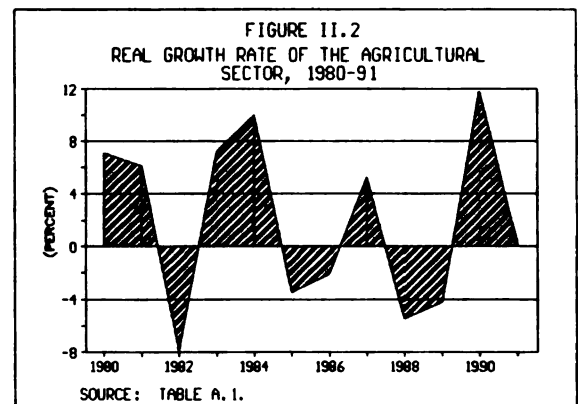
SOURCE: ESSJ.

were also significant increases in both domestic and national savings due to: restoration of positive real interest rates; the return of capital from abroad; increases in public and private sector investment; and lagged effects of devaluation. The depreciation in the real exchange rate also boosted non-traditional exports which doubled in 1988 in comparison to 1980. The tourism sector also rebounded, in part due to a more competitive exchange rate. In addition, inflation slowed considerably, averaging 9.8% per year in 1987-89 compared to an average of 21.5% in 1983-86. Given the impact of the policies, real GDP grew markedly in the 1986-89 period (4.6% per year), particularly in 1987, when the largest increase in GDP in the last 15 years was achieved (7.4%).

In recent years, the impact of the economic recession of the industrialized economies, exchange rate devaluation and high rates of inflation have slowed domestic growth. The economy recorded real growth of 4.8% in 1990 (due to the impacts of earlier reform measures), but only 0.2% in 1991.

Among the various sectors that comprise the economy, mining has traditionally been one of the most important primary sectors in terms of contribution to GDP (Table II.1) and generation of foreign exchange earnings. This sector performed poorly in the first half of the 1980s, declining by an average of 6% per year. However, the low performance was arrested in the second half of that decade. In response to higher export prices and government initiatives in the bauxite sector, both output and exports increased steadily during the period. By 1990, output and exports of bauxite and alumina were almost double the level achieved in 1985. As a result, the sector increased its relative contribution to GDP and to total exports by nearly 20% and 11%, respectively.

The agricultural sector has been subjected to several reform measures throughout the period of the Structural Adjustment Program (SAP). The macroeconomic reforms undertaken have improved the sector's incentive system and contributed to a better allocation of resources<sup>4</sup>. Nevertheless, the sector did not expand during the 1980s as expected. Between 1980 and 1989, agriculture recorded an average real growth of -0.9% per year, with positive growth occurring in only four years of that period. The performance has varied in recent years, with real growth in 1990 being the highest in the last fifteen years (12.1%) followed by a -0.4% decline in 1991 (Figure II.2). At the same time, the sector reduced its contribution to GDP, from 8.3% in 1980 to 5.2% in 1991. This decline reflects not only the expansion of other sectors, but also the decreasing output of the principal commodities, sugar and bananas.



Following a period of stagnation in 1980-85, the manufacturing sector experienced a resurgence in growth, averaging more than 4.5% per year in real terms between 1986 and 1990. This was mainly attributed to a devaluation of the real exchange rate and to the tax and trade reform measures introduced in the mid-1980s which improved the sector's export competitiveness.

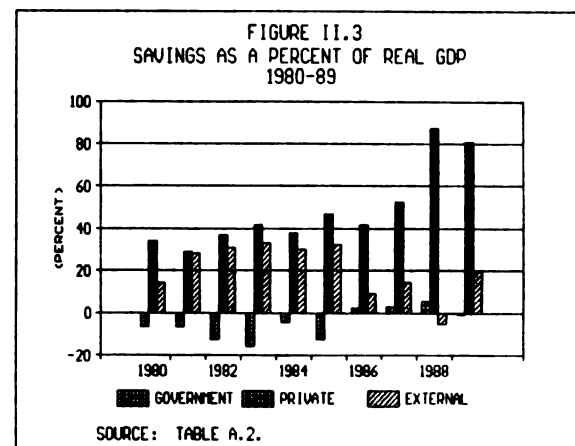
The tourism sector, which makes the largest contribution to foreign exchange earnings, also experienced strong growth in the second half of the last decade. Total visitor arrivals exceeded 1 million for the first time in 1987, with the number of stopover visitors increasing approximately 6% per year and cruise passengers nearly doubling over the 1985-90 period. The factors contributing to this performance include the real devaluation of the Jamaican dollar which increased the country's competitive position as a tourist destination, the lease and/or sale of government-owned hotels and major investments in the sector.

The services sector performed relatively well in the last decade. It recorded an average real growth rate of more than 3.5% per year and increased its contribution to GDP from 58% in 1980 to nearly 63% in 1991. Growth in the construction sector was very impressive in the 1987-89 period, averaging nearly 16% per year, before declining rapidly in 1990 and 1991.

## 2.2 Consumption, Savings and Investment

In the 1980s total consumption expenditure experienced a steady real growth that averaged about 2.4% per year. This performance was largely due to increases in private consumption since public consumption expanded by less than 0.5% per year. The government's pursuit of fiscal austerity under the structural adjustment program was the main factor that contributed to the marginal growth in public sector consumption. In the 1990s, real consumption has declined sharply as the government continued its efforts of tight demand management. Total imports of consumer goods fell by more than 35% in 1990-91 while consumer credit grew substantially as a consequence of inflationary and speculative demand rather than a real expansion in consumption.

Jamaica had an exceptionally high dependence on external savings during a large part of the 1980s. It jumped from 5.4% of GDP in 1980 to an almost constant 12% in 1981-85 (Figure II.3). For the most part, this was a consequence of the excess of imports of Goods and Non-Factor Services (GNFS) over Exports of GNFS. In contrast, net factor payments averaged only 2.1% in 1981-85 reflecting, to a large extent, the favorable terms under which Jamaica was able to contract past external debt.



Several factors contributed to the high use of external savings in the first half of the 1980s, the most important being a significant expansion in the country's external debt. The increased resort to external savings, however, was not utilized efficiently since it was not accompanied by significant positive changes in the country's productive and export capacities. Although the total foreign debt declined in later years because of divestment and reduced borrowing requirements, it continues to be one of the highest in the region in per capita terms, and it is a serious constraint to improving the balance of payments situation.

The importance of external savings declined in the second half of the 1980s. It decreased to about 3.1% of GDP in 1986 and remained at relatively low levels

throughout the rest of the decade. The decline in petroleum imports together with the positive response of exports to the devaluation of the Jamaican dollar more than offset the gradual increase in net factor payments. External savings became negative in 1988 for the first time in many years, mainly because of a large increase in transfers (mostly hurricane-related reinsurance flows). Government dissaving was reversed and private sector saving increased after 1985 due largely to the policy measures included in the structural adjustment program.

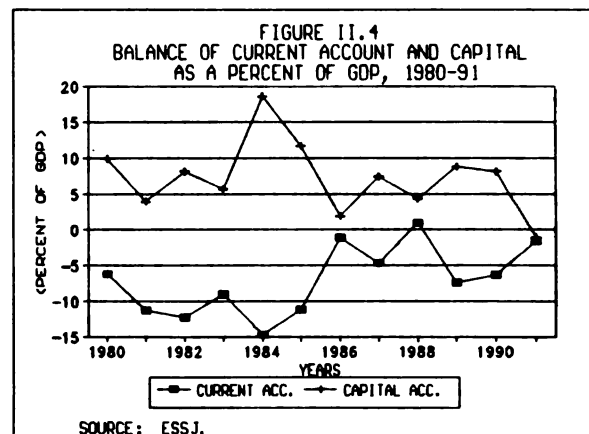
At the end of the decade, the country's productive capacity did not expand significantly despite the increases in total savings. In large part, most of the savings were used to finance non-investment expenditure after hurricane Gilbert. In addition, the restrictive demand management policies adopted by the government to arrest the deficit and protect the exchange rate contributed, in part, to higher savings but discouraged productive investment. Although inflation was high (20% per year), the cost of credit was greater than 30%, which was well above the returns from various financial instruments and productive investments. For these reasons, many investors turned to the Jamaican stock market which experienced a dramatic boom between 1989 and 1992<sup>5</sup>.

Given the government's economic policies and the country's overall economic performance in the 1980s, it is not surprising that real investment rose at 1.1% per year during the 1980-89 period, an improvement over the previous decade but well below the 6.8% annual growth rate recorded in the 1960s. Much of the investment in the 1980-85 period was largely related to the accumulation of unsold inventories in the mining sector. In recent years, as the economy has experienced a downturn and both private and public sector investment has declined, construction

activities which usually account for on average approximately one-half of gross capital formation, were well below the normal level. Similarly, imports of non-consumer capital goods declined by more than 25% in 1990-91.

### 2.3 Balance of Payments and External Trade

The current account balance experienced a cyclical movement in the period 1980-91. It increased by more than 100% between 1980 and 1982, declined in 1983-84 and increased again in 1985. Since 1986, it reduced rapidly in response to a decline in oil prices, the recovery of external demand for bauxite-alumina and the lagged effects of exchange rate depreciation on earnings from tourism and non-traditional exports. As a proportion of GDP, the current account balance peaked in 1985 at 15% (Figure II.4). Between 1980-85, it averaged 11.7% compared to 5.5% from 1986 to 1991.



Jamaica has relied on large inflows of foreign capital to improve its balance of payments situation. With the exception of 1986, net capital inflow has averaged more than US\$ 250 million per year since 1980. In 1986, the capital account was only marginally positive because of a reduction in the disbursements from bilateral and multilateral donors, particularly for

balance of payments support. Since 1987, capital inflows have improved marginally, in part due to the government's divestment program and direct foreign investment in tourism, agriculture and manufacturing. In 1991, net capital inflow was reduced significantly to only US\$ 77.4 million, and the country's international reserves deteriorated.

Movements in the exchange rate have also influenced the country's external trade<sup>6</sup>. The real appreciation of the Jamaican dollar in the first years of the 1980s encouraged imports and was a disincentive to the export sector (Figure A.1). The real devaluation in 1984 and 1985 contributed to a resurgence of growth, particularly in the export-oriented manufacturing sector. In recent years, real exchange rate appreciation has placed some pressure on the balance of payments and eroded part of the significant improvements, both in the external accounts and in the rate of economic growth that were registered in 1986-87.

Jamaica's trade balance presented mixed results during the last decade. In general, the performance of the export sector, particularly of traditional exports, was very disappointing. In the first half of the period, traditional exports declined 60%, primarily because of international economic conditions as well as for domestic reasons. The bauxite-alumina sector was the most affected by the tight export market conditions and this contributed in large part to the downward trend in total exports. Sugar and bananas also performed poorly for most years in this period, mainly because of production problems. With the exception of 1983, when sugar exports increased to US\$ 53 million, export earnings declined by nearly 10% in the period. Both the volume and value of banana exports recovered in 1985 and since then the trend has been one of continued expansion. This is because of restructuring and revitalization initiatives in the industry

and the improved value of the pound sterling.

There was a reversal in the country's export performance in the second half of the 1980s due to: higher export prices particularly for alumina, sugar and bananas; the positive impacts of the government's stabilization and economic reform measures; and rehabilitation and improvements in the major productive sectors. As a result merchandise exports more than doubled, from US\$ 568 million in 1985 to US\$ 1,145 million in 1991. Export earnings increased by almost tenfold for bananas, 60% for alumina, 43% for sugar and rum, 36% for coffee, 32% for bauxite and almost 30% for non-traditional exports (particularly garment/apparel). Gross earnings from tourism increased significantly also, by approximately 87% in the period. Parallel to these expansions a few traditional exports experienced declines (cocoa and pimento) and stagnation (citrus).

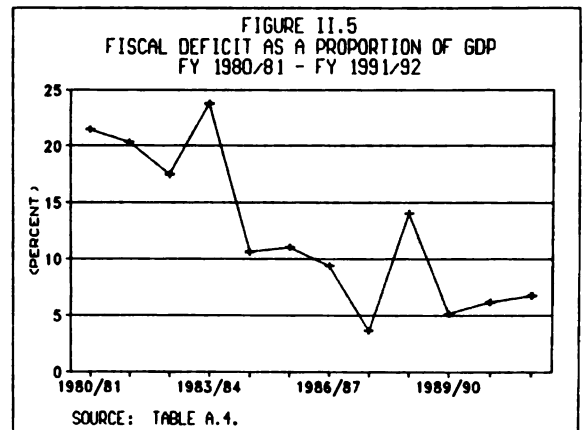
With regard to imports, the trend varied over the decade and three periods could be identified: 1980-83, 1984-86 and 1987-90. Imports, particularly of capital and consumer goods, increased rapidly in 1980-83 due to high levels of capital flows and utilization of foreign reserves. Food imports increased by 64% while consumer durables (particularly motor vehicles) doubled. Since 1983, however, imports grew slowly, in response to the price level, availability of foreign exchange, trade policies and austerity measures of the government. Imports declined 18% in the 1984-86 period, due to restrictive measures implemented to contain imports such as lower credit from the banking sector, upward adjustments of the interest rate, changes in the auction system for foreign exchange, dismantling of the quota and licensing system for a range of goods, and preferential allocation of foreign exchange for raw material imports rather than for consumer goods. These measures affected

the three main import categories in 1984 and 1985: consumer goods imports declined 23% and 6%, respectively, in the two years, and the cumulative decline in raw materials and capital goods was 34% and 16%, respectively. The largest reductions took place in food and fuels, both of which declined by almost 50% in these years vis-a-vis the 1983 level.

The 1987-90 period was marked by a sharp reversal in the import trend. Imports grew by almost 12% per year, in part due to higher oil prices but more importantly because of larger expenditures for raw materials and capital goods. This was motivated by a more robust expansion of the economy, higher investment levels and the growth of commercial bank lending to the private sector. The rate of growth of imports slowed considerably in 1990 and declined by 7% in 1991 as demand management measures affected the trade sector<sup>7</sup>.

## 2.4 Public Finance

One of the major objectives of Jamaica's structural adjustment program in the 1980s was to reduce fiscal imbalances. The implementation of the corresponding policy measures, improved the country's fiscal situation marginally in its early stages. The fiscal deficit (including interest payments) declined from almost 22% of GDP in FY 1980/81 to nearly 18% in FY 1982/83 (Figure II.5). With the resurgence of the deficit in FY 1983/84, tighter deficit reduction measures were implemented to both curtail expenditure and increase revenues<sup>8</sup>. Considerable success was achieved in reducing the central government deficit in 1983-87. Since FY 1988/89, however, the favorable trend in deficit reduction was reversed in large part due to the surge in reconstruction related to expenditures made necessary by Hurricane Gilbert.



With regard to revenue reductions, various measures were introduced. Among these were: a fundamental reform of the Personal Income Tax; introduction of a windfall profits tax on the government-owned petroleum monopoly to absorb the gains resulting from lower petroleum prices; and a tax package that raised the levies on specific items such as cigarettes, beer and rum. These measures, together with increased economic activities, enabled total current revenue (excluding grants) of the central government to achieve a record of 31.2% of GDP in FY 1986/87. Since then, current revenues have remained high, 35% in FY 1989/90.

In addition to raising revenue, the government implemented measures to curtail public expenditures in the mid 1980s. These included a reduction in capital expenditures followed by deep cuts in recurrent outlays, especially expenditures on goods and services. The largest cuts in this last category occurred in wages and salaries. They were nearly halved from 14% of GDP in FY 1980/81 to 7.6% in FY 1987/88. This was made possible by massive reductions in public sector employment during 1984-86 and through declines in real wages. These measures reduced government expenditures from approximately 41% in 1980-84 to 32.2% in



1985-88. In recent years, the fiscal performance deteriorated, with total expenditures expanding more and the overall fiscal deficit increasing from 5.1% of GDP in 1989/90 to 6.2% in 1990/91, and to 6.7% in 1991/92.

## 2.5 Money, Credit and Prices

In most years of the 1970s and early 1980s monetary policy focused on financing large public sector deficits. During the 1982-91 period, growth in the money supply fluctuated widely, the highest rate being 55% in 1988 and the lowest 6% in 1989. As a proportion of GDP, it averaged about 13% during the same period<sup>9</sup>. In March 1986, a revision of the banking legislation was approved which clarified the Central Bank's role in monetary policy. As a result, a special emphasis was placed on base money management, which utilized to a larger extent open market and rediscounting operations.

In the first years of the 1980s, the domestic credit by the banking system followed a similar trend to the one of the late 1970s. Net domestic credit continued to increase rapidly between 1980 and 1983, averaging nearly 20% per year. Much of the credit, particularly in 1980 and 1981 was financed by the BOJ through declining foreign reserves.

The tightening of fiscal policy began in FY 1984/85 and it precipitated important changes in the growth and composition of credit. The public sector's net use of credit from the financial system decelerated abruptly beginning in 1984 and, with the exception of 1986, declined throughout the 1987-89 period. The restrictions on credit expansion were accompanied by a set of measures aimed at adjusting the interest rate level, improving the efficiency of financial intermediation, controlling the BOJ's

monetary and credit aggregates, banking legislation and a further tightening of monetary policy.

While reductions took place in public sector borrowing, the monetary authorities resorted to the considerable use of open market operations, particularly the sale of Treasury Bills, to finance the deficit. At the same time, the accelerated growth in BOJ losses further pushed the authorities to limit domestic credit expansion. As a consequence of these factors, net domestic credit declined from its peak of 80.6% of GDP in 1983 to 40.1% of GDP in 1989, and Jamaica's net foreign asset position improved significantly, especially in 1987-88.

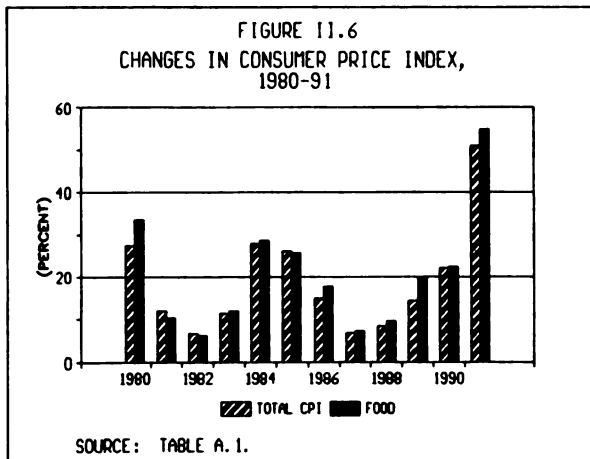
One of the significant achievements of the financial sector's reform was to change the interest rate structure in a way that the rates became more market determined. The real weighted interest rates (loan, savings and deposit) of the commercial banks rose sharply after 1984 to peak in 1987 (Table II.2). This result reflected primarily the sharp drop in inflation. Lower inflation also enabled the monetary authorities to reduce progressively the minimum savings rate in 1988<sup>10</sup>.

TABLE II.2  
REAL INTEREST RATES: LOAN, DEPOSIT  
AND SAVINGS  
1980-91 (%)

YEAR	WEIGHTED AVERAGE LOAN RATE	WEIGHTED AVERAGE DEPOSIT RATE	SAVINGS RATE
1980	-12.3	-20.0	-20.0
1981	11.6	6.8	4.4
1982	9.9	4.9	2.5
1983	0.5	-4.4	-7.7
1984	-11.1	-14.0	-18.2
1985	5.8	-3.8	-3.4
1986	15.2	-0.1	0.4
1987	17.3	8.2	7.8
1988	15.3	5.5	4.3
1989	12.2	5.2	3.2
1990	7.9	2.0	-2.3
1991	-11.3	-15.6	-21.5

SOURCE: ESSJ.

Jamaica entered the 1980s with a high inflation rate: 27% in the first year. The rate declined sharply in 1981 (12%) due to a combination of factors: lower import prices, increased supply of imported goods, and reduced inflationary expectations. Inflation further moderated in 1982 (6.5%), but accelerated in 1983-85 (Figure II.6) due to public sector wage increase, higher private sector wage settlements and depreciation of the Jamaica dollar. Subsequently, the rate declined significantly in 1986 (14.8%) and 1987 (6.7%), in part because of a maintenance of exchange parity of the Jamaican dollar and a decline in overall import prices (mostly oil). In addition, the significant decline in the overall public sector borrowing requirement, together with the pursuit of a tight monetary policy contributed to lower inflation rates. In the first quarter of 1988, the growth in prices further decelerated, due to lower food price changes and the introduction of a national wage guideline in FY 1987/88 which allowed for only a 10% wage increase.

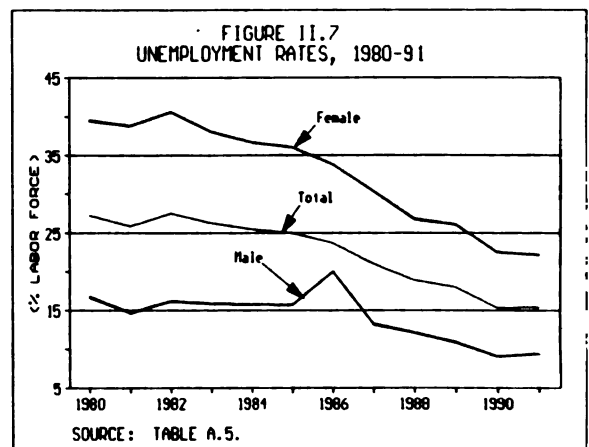


Since 1989 inflation has trended upward recording 14.3% in that year, 22.0% in 1990 and 51% in 1991. The further removal of subsidies, liberalization of the foreign exchange regime and higher domestic prices for imported fuel were the main factors contributing to these increases. While all

groups in the consumer price index experienced significant increases, those which recorded the highest were food and "fuels and other household supplies".

## 2.6 Employment and Wages

Much progress has been made to lower unemployment, which, after averaging 27.3% of the labor force in 1980, dropped to 15.4% in 1991, the lowest level in two decades (Figure II.7). A large part of the decline is attributed to higher job creation in the non-public sector, particularly in manufacturing, construction and services. In spite of the results achieved, a persistent problem has been high unemployment among women. In 1990-91 this group had an unemployment rate almost 2.5 higher than among men (22.3% versus 9.2%). In absolute terms, the number of females unemployed has consistently outnumbered unemployed males by more than two to one in the last two decades. It is unlikely that this situation will change significantly in the medium term, since growth of the female labor force, despite reducing in the last decade, continues to be higher than the increase of the male labor force by a considerable margin.



At the sectoral level, employment was influenced by the structural adjustment

program and by the overall performance of the economy. The employment growth observed in 1974-80, particularly in agriculture, was partially reduced in the first half of the 1980s. After that, an overall positive trend was established. Employment growth was not strong in the primary sector, but was impressive in manufacturing, construction and commerce since the corresponding rates were two to three times greater than the average of 2.3% recorded for all sectors. There was growth in the employed labor force despite the sharp decline in public sector employment (about 4.4% annually in 1981-85).

The declining trend in public sector employment continued in 1986-90; by 1990, the labor force in the public sector was nearly one-third less than in 1980. With the exception of mining, whose share of the employed labor force is very small, employment growth was distributed evenly in most other sectors, with the largest increase taking place in construction and manufacturing<sup>11</sup>.

Since 1990, the unemployment rate has averaged 15.2% per year, and for the first time in almost two decades, the rate for males declined to a single digit. However, the ratio of female to male unemployment has remained unchanged although more females were able to secure employment compared to males. Employment grew among female-headed households and younger women in commerce and in "other service" sectors which have traditionally employed a large number of women. Much of the employment increase was in low salaried jobs ("other services" sector) rather than in the broad-based modern sectors.

Real wages barely increased in Jamaica in the last decade and a half. While nominal wages increased due to high inflation rates and trade union pressures, real wages often lagged behind changes in the cost of living. The national minimum

real wage in 1990 was only J\$ 2 per day higher than the 1980 level. Since 1990, inflation rates have been high and it is estimated that real wages have declined between 10% and 20%, particularly for minimum wage and lower income groups<sup>12</sup>.

## 2.7 Privatization Trends

Jamaica started its privatization program in 1981, but progress was quite slow during that decade. The divestments comprised dissolution of the public transportation system, leasing and sale of most government-owned hotels, reorganization of the public sector component of the sugar industry and divestment in the banana sub-sector. Since 1989, however, the government accelerated the pace of privatization with 263 public sector enterprises divested and/or targeted for divestment<sup>13</sup>. These include major parts of public utilities, hotels, farm holdings, banks, service industries, municipal markets and factories.

While Jamaica's private sector has responded very enthusiastically to the program, the rate of divestment in recent years has been slower than anticipated. By early 1992, 124 entities that could have been divested were still in the public sector. Overall, privatization revenues between 1992 and 1993 are expected to be in the neighborhood of J\$ 2 billion (approximately 4% of 1992 GDP) from the divestiture of 25 to 30 entities.

Though it is still early to assess the results of divestment, a research on 162 divested entities in 1991 (out of 202) indicates that the program has so far been a success<sup>14</sup>. In general, there was no overall decline in employment in public companies sold to the Jamaican private sector. Public markets, cleansing and corporate entities lost 413 jobs, but privatized hotels and

agriculture enterprises added 1,140 new ones, more than offsetting that reduction. With regard to agriculture, 68% of the area divested (34 farms comprising 12,956 ha.) was put into production, compared to only 14% that was being utilized prior to divestment<sup>15</sup>. Productivity expanded 25% on average and the larger use of land increased employment by more than 100% at peak harvesting periods.

## **2.8 Major Macroeconomic Constraints and Possibilities**

Jamaica's economic problems and constraints include a fragile economy, low economic growth, high unemployment, a heavy external debt burden, deficiencies in the economic infrastructure, poverty, inadequate social services, reduced economic efficiency and environmental degradation. These factors have undermined developmental efforts and constrained the pace of economic adjustment.

In spite of the government's efforts to diversify the economic base, the economy is still largely dependent on bauxite, alumina, sugar, bananas, and tourism. This dependence has made the economy vulnerable to export price fluctuations, changes in foreign markets and income stagnation in the industrial countries. In addition, high dependence on petroleum imports, occasional risk of natural disasters (especially hurricanes), and limited foreign exchange reserves have compounded the problem of vulnerability.

Jamaica's foreign debt imposes a significant burden on future economic growth. The country's total outstanding external debt at the end of 1991 amounted to US\$ 3.9 billion (116% of nominal GDP) while the debt service absorbed about 27% of total export earnings (Table A.6)<sup>16</sup>. Parallel to this, net capital inflows have declined in recent years. Thus, the debt service has increasingly required the use of

domestic saving, and the fiscal position has become severely constrained because of the costs of meeting accumulated debt obligations. Debt restructuring through rescheduling and forgiveness has alleviated the situation in the medium term, but the size of the debt could preclude significant future borrowing if the economy experiences problems similar to those of the 1976-84 period.

While the economy recovered in the second half of the 1980s, the actual trend in recent years is one of decline. Unemployment has declined during the last decade but it remains an important problem. Emigration has helped in earlier years but it is no longer an important factor to ease the situation. In recent years, the informal sector has played an increasing role in job creation but this has not been sufficient. Population growth averages around 1.0% per annum and the labor force, reflecting a young age structure is growing faster. This situation will impose a burden on growth unless more employment opportunities are created. Although economic restructuring and public sector reform has helped in the short run, Jamaica needs to achieve both higher growth rates and a reduction in unemployment in the longer run.

The reliability and quality of the infrastructure services (roads, transport, communications, power and water supply) are not adequate to attract large private investment over a long period of time. The reliability is uneven, in part due to inclement weather (hurricanes, floods and drought), deteriorating facilities and weak management. Fiscal austerity has aggravated the situation, both for essential investments and maintenance programs. Various measures established by the economic reform program such as deregulation, privatization (of transport) and price adjustments have helped significantly, but the quantum of some services need to be

expanded. Improved management is still required to prevent bottlenecks.

Poverty appears to be on the increase in Jamaica. Real wages in recent years, especially in the public sector, have declined, and the growth of private consumption has been slow. Food prices have risen sharply and this has threatened the nutritional status of a large segment of the population<sup>17</sup>. Efforts are being made by public and non-government organizations through various programs to increase the food supply and other resources to the lower income and disadvantaged groups. Progress has been slow, in large part because of expenditure cuts and slow disbursement of external financing.

The country faces serious environmental problems including high levels of soil erosion, toxic emission from motor vehicles, pollution of the groundwater, and a systematic elimination of indigenous flora and fauna. If the abuse of the environment continues, this could adversely affect sustained growth and people's health.

The potential to improve and sustain adequate economic growth will largely depend on the government's ability to continue economic reform and adjustment in the short and medium term. The government's priorities should include addressing the debt problem; containing inflation; improving the incentive framework for production, investment and trade; undertaking additional financial sector reform; improving infrastructure investment; and human resource development.

Jamaica's future growth possibilities also will largely depend on a continued program of tight economic management combined with the provision of incentives for export growth. There is much potential for growth of tourism, financial services and non-traditional exports such

as garments, fruits and ornamentals. These sub-sectors have responded positively in the past to policies implemented, and there is still much potential for development given the country's human and natural resource base and proximity to the large US market.

### III. AGRICULTURE: RESOURCE BASE, PRODUCTION AND POTENTIAL

#### 3.1 Resource Base

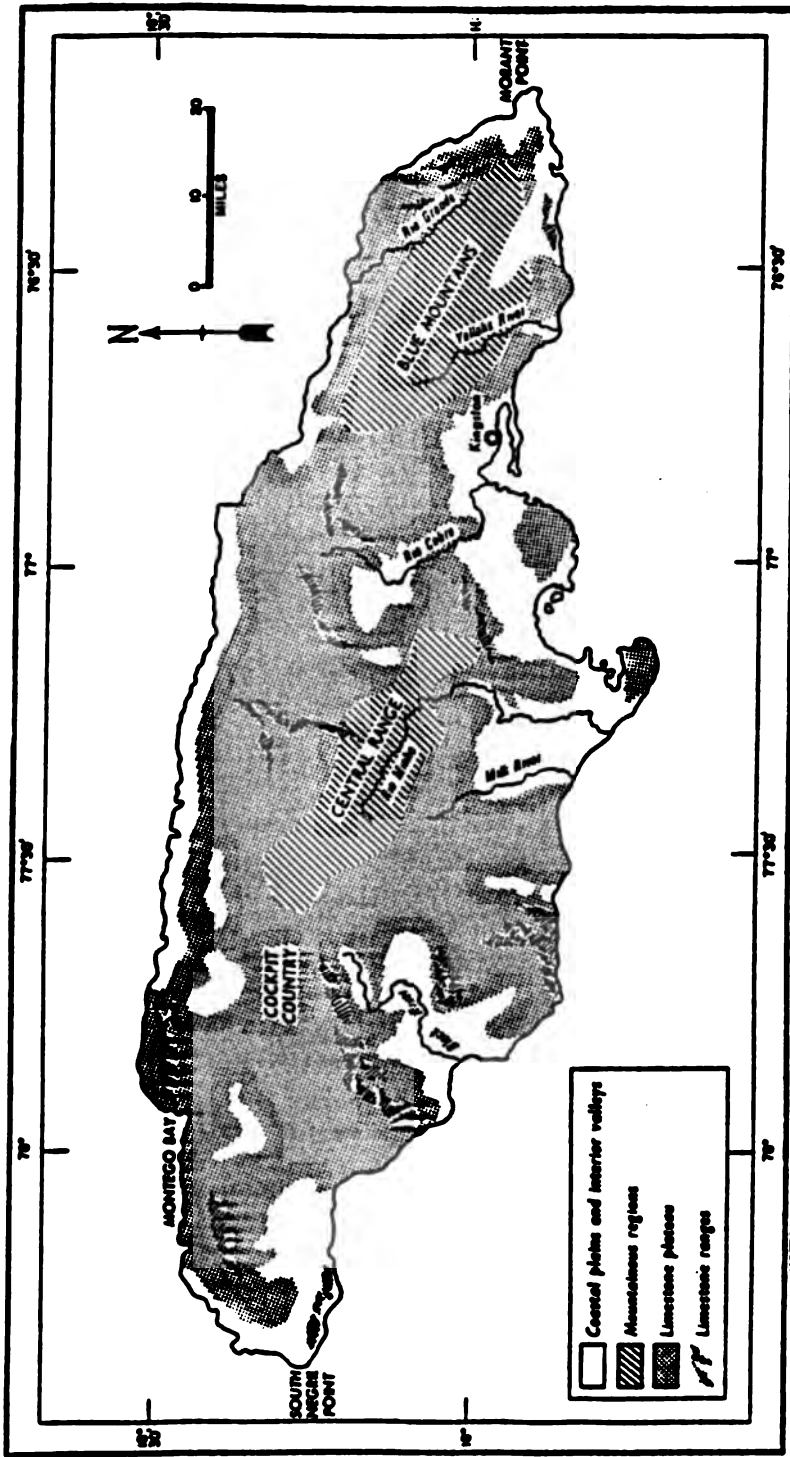
##### 3.1.1 Physiography

Jamaica has three main physiographic regions: the interior mountain ranges, the dissected limestone plateaux and hills, and the coastal plains and interior valleys (Figure III.1). The interior mountain ranges comprise the Blue Mountain range, the Port Royal Mountains, the central range and a few elevations in the western part of the island. The first is located at the axial part of the eastern portion of the country. It has the highest peak in Jamaica, the Blue

Mountain Peak with 2,258 meters. The second is situated in the south and has several peaks over 1,200 meters high. The latter two have much lower altitude, with a few points rising slightly over 900 meters.

The coastal plain is less than 3.5 km. wide along most of the coast area. In some places it widens to form broad embayments, the most extensive of which are at the eastern and western ends of the island, and at the Clarendon and St. Catherine Plains on the south coast. In addition, there are three major interior valleys: St. Thomas, the Queen of Spain Valley and the Nassau Valley. The coastal plains and interior valleys have the prime agricultural lands, but some areas are swampland, the major

**FIGURE III.1**  
**TOPOGRAPHY OF JAMAICA**



Source: Area Handbook for Jamaica, 1976.

ones being the Upper Morass, the Great Morass and the Westmoreland Plain.

The limestone hills and plateaux occupy the central and western two-thirds of the island. The highest areas have 600-700 meters of altitude, while the majority of the plateaux is 300-600 meters high.

### 3.1.2 Climate

Jamaica has a maritime tropical climate that is mainly distinguished by warm trade winds that generally blow from east to north-east. There are two main rainy periods, April to June and September to December, with March being the driest month of the year. The island's annual mean rainfall is about 198 cm., but around 80% of the country receives between 125 cm. and 250 cm. annually. There is high rainfall (above 250 cm.) on the central and north-eastern slopes of the Blue Mountains and in the central and western regions. Low rainfall (less than 125 cm.) is limited to a small strip along the north coast between Montego Bay and St. Ann's Bay, and to a part of the southern plains from Kingston to the parish of St. Elizabeth.

Apart from rapid fluctuations, the island's temperature is fairly constant all year. In coastal areas, daily temperatures average 79.2°F (26.2°C), with an average maximum of 87°F (31°C) and an average minimum of 72°F (22°C). For most of the year, the daily wind pattern is dominated by the northeast trades. The country is susceptible to severe storms, primarily hurricanes, which are frequent during the late summer and early autumn. The most recent hurricane that hit the country was Gilbert. It devastated the island in 1988. The damages done were considered to be the worst natural disaster in Jamaica's modern history.

### 3.1.3 Land

Jamaica has 1,008,822 ha. of land, 38,6% of which is suitable for cultivation (Classes I, II and III) and 10,6% can be used only for limited cultivation (Table III.1). The country has only 27% of flat land (292,410 ha.), the rest being of moderate to steep slopes. More than 75% of the land has a slope in excess of 10 degrees<sup>18</sup>.

Land use is dominated by agriculture (46%), forests (24%), scrubland and woodland (20%) and urban uses (4%)<sup>19</sup>. The pattern of land use over the past 30 years is characterized by increases in area under permanent crops (37%) and in irrigated land (50%); and decreases in arable land (20%), the area under permanent pasture (25%) and in land under forests (11%).

Although there are limitations to land use imposed by topography and accessibility, land alone is not considered a limitation to agricultural development. The more serious constraints are those imposed by unsuitable land use practices, the absence of land titles, inappropriate technology, insufficient labor (especially on small farms), fragmentation and small plot size. A large share of the national food output is produced as annual crops in areas where the land should, instead, have a permanent vegetative cover to conserve the soil and prevent flooding and water loss.

Soil erosion is severe in some areas (approaching 100 metric tons/ha./year in the Upper Yallahs Valley). Several studies have estimated the rate of soil loss under different management conditions and all have concluded that soil losses are rampant in most areas of the country. Eroded soil has been causing significant downstream problems (e.g., silting water supplies, damaging reefs, reducing

TABLE III.1  
LAND CAPABILITY CLASSES IN JAMAICA

CLASS	HECTARES	PERCENT	MOST INTENSIVE SUITABLE USE
I	31,762.6	3.2	SUITABLE FOR CULTIVATION WITH LITTLE OR NO LIMITATION
II	113,532.4	11.3	SUITABLE FOR CULTIVATION WITH MODERATE LIMITATIONS
III	242,443.3	24.1	SUITABLE FOR CULTIVATION WITH STRONG LIMITATIONS
IV	106,382.2	10.6	SUITABLE FOR TREE CROPS, GRASSES & VERY LIMITED CULTIVATION
V	188,920.2	18.6	NOT SUITABLE FOR CULTIVATION, BUT SUITABLE FOR COMMERCIAL FOREST
VI	318,677.3	31.7	NOT SUITABLE FOR CULTIVATION, BUT SUITABLE FOR FORESTRY
VII	7,104.0	0.7	LITTLE OR NO PRODUCTIVE USE
TOTAL	1,008,822.1	100.0	-

SOURCE: RURAL PHYSICAL PLANNING UNIT, MINAG.

productivity of streams and rivers) in hillside and watershed areas of the country. Besides the adverse impacts on productivity, soil erosion results in serious ecological damage to the streams, wetlands, mangroves and reefs of the island.

Parallel to the degradation of hillsides, there are large areas of land suitable for intensive cultivation that are idle or underutilized. This problem of underutilization is observed on both public and private-owned land. It has been caused, in part, by the decline of export agriculture over time, labor shortages due to out-migration and the low level of technology used in small farming. In recent years, the government has attempted to encourage the productive use of public land by transferring it to private ownership, granting long term leases and providing titles to farmers.

### 3.1.4 Water

Jamaica has been divided into 10 basins and has 33 declared watersheds. The island has a wide variety of water sources. Rainfall is the major one, but seasonal variability is high, with an average of 35% occurring between September to November, 21% from May to June and 56%

in the remaining seven months. Of the total rainfall water, 56% of the mean annual amount is lost through evapotranspiration and the rest contributes to ground and surface waters.

The north-draining basins are the major source of surface water. They account for 56% and 48%, respectively, of the national annual average and reliable yields. The Blue Mountains Basin alone contributes 29% of the total annual average yield and 14% of the annual reliable yield. Other sources of water include karstic springs which are outlets of major aquifers in the western two-thirds of the island and several rivers that cross the lowlands and enter large wetlands on the coast (e.g., the Great Morass, the Black River Morass).

The total quantity of water available on the island (i.e., total runoff per land surface area) is typical of other Caribbean islands. Reliable ground and surface water yield is about 4,260 m<sup>3</sup> per year or 20% of the mean annual rainfall/year. Of this amount, 79% is provided by the limestone aquifer, 18% comes from surface water runoff and 3% is accounted for by the alluvial aquifer (Table III.2). Agriculture utilizes between 65% and 75% of total water



TABLE III.2  
AVERAGE ANNUAL DISTRIBUTION OF WATER TYPES

BASINS	RAINFALL VOLUME (2)	EVAPOTRANS- PIRATION	AVERAGE YIELD (3)	RELIABLE YIELD					
				S.W RUN OFF	G.W.		TOTAL		
					LS.	AL.	AMT.	% OF	
							(2)	(3)	
BLUE MTN. (S) (4)	1690	907	783	96	36	17	149	9	19
KINGSTON (4)	310	179	131	10	15	21	45	15	35
RIO COBRE (4)	2010	1369	641	15	378	25	418	20	65
RIO MINHO (4)	2420	1602	818	31	361	78	471	19	58
BLACK RIVER (4)	2530	1559	971	49	625	-	674	27	69
CABARITA RIVER (4)	1890	1073	817	-	451	-	451	24	55
GREAT RIVER	1680	858	822	65	316	-	381	23	46
MARTHA BRAE RIVER	1150	668	482	20	202	-	221	19	46
DRY HARBOUR MTN.	2450	1302	1148	154	691	-	845	34	74
BLUE MTN. (N)	5070	2348	2722	334	270	-	604	12	22
TOTAL AMOUNT	21203	11868	9335	774	3345	141	4260	-	-
PERCENT	100	56	44	-				20	46
% OF AV. YIELD	-	-	100	18	79	3	-	-	-

(1) UNITS IN MM<sup>3</sup>/YEAR.

(2) PRODUCT OF DEPTH (MM) X AREA (KM<sup>2</sup>).

(3) GROUND PLUS SURFACE WATERS.

(4) SOUTH DRAINING BASINS. OTHERS NORTH DRAINING.

SOURCE: COUNTRY ENVIRONMENTAL PROFILE, 1987.

availability, 10% is used for domestic purposes and 8% by industry.

Although the average level of precipitation in Jamaica is high, the spatial and temporal distribution is such that in certain areas of the country, especially in the southern coastal region, most crops cannot be grown without irrigation. Approximately 36,100 ha. or 13% of the cropland is irrigated. The Rio Cobre and Rio Minho Basins together account for 80% of the irrigated area.

Presently, many management practices impact negatively on Jamaica's water resources. Watershed degradation is contributing to the loss of biodiversity and also of habitat in the streams and rivers. Various public water supply systems are routinely contaminated by pathogens, sediment and agricultural run-off. Agricultural activities on the southern plains are sedimenting streams and, in some areas, there is over-harvesting of the groundwater. The plains of St.

Catherine have shown a significant increase in the incidence of saline springs, seeps and wells during the last three decades. Thousands of hectares of soils in this parish have become salinized, and the process is continuing at a rate of 1.5 to 2% of the area per year due to mismanagement of surface irrigation water and over-pumping of the groundwater.

### 3.2 Farm Structure and Land Tenure

The farm structure of Jamaica has been characterized by a skewed distribution of land with the pattern biased against small farmers. Moreover, large farmers have occupied the best land on the plains, while small farmers are concentrated in the watershed areas, cultivating steep slopes and often marginal land.

According to the last agricultural census (1978-79), an increasingly large number of farms belonged to the small farm category. In 1954, about 70% of all farms had less

than 5 acres (2.02 ha.) and together occupied 13% of the land. Large farms (over 500 acres or 202 ha.) accounted for 0.002% of all farms and occupied 37% of the area (Table III.3). In 1978 almost 82% of the farms were under 5 acres. On the other hand, the proportion of farms in excess of 500 acres remained the same but accounted for a larger area (44%). After the last agricultural census, the proportion of small farmers declined to 77%. In the most recent years, however, there might have been an increase in view of the expansion in the total number of small farms<sup>20</sup>.

In addition to a predominance of small farms, the farm structure is also characterized by a relatively high level of property fragmentation. The 1978/79 Agricultural Census shows that about 50% of the acreage farmed were on two plots or more<sup>21</sup>. Fragmentation is particularly prevalent among the small farm group who have an average of 2.2 parcels per farm. The major factors that have contributed to farm fragmentation are the family inheritance system and the lack of available land adjacent to the farm for the expansion of the farm enterprise. It is possible that farm fragmentation might have worsened in recent years as a result of divestment and redistribution of agricultural land, and an increase in the number of farms.

Jamaica's land tenure system is deeply rooted in the country's colonial history, whereby rights to the most fertile and flat lands were distributed to large export crop growers (particularly of sugarcane), while peasant farmers settled on government lands. Redistribution of public lands through settlement schemes to small farmers and land fragmentation have added further to the sector's tenurial problems. Tenure security, especially of small farmers has remained a major agricultural policy issue; however, little progress has been made by the government to resolve the problem.

Land is held under a variety of tenurial arrangements: ownership or freehold land (through purchase or inheritance), rental, lease (short or long term), family land, rent free and squatting. The 1978/79 Agricultural Census shows that although 80% of all agricultural land is owned, only 56% of the small holdings (< 5 acres) is owner-operated. Moreover, less than 50% of farmers have titles to the land they own<sup>22</sup>. Since land title is accepted as collateral (often preferred) for credit, small farmers who are willing to borrow are sometimes restricted to access finance for farm improvements. To some extent therefore, tenure insecurity could be associated with the low credit levels of small farmers.

TABLE III.3  
NUMBER OF FARMS BY LAND SIZE GROUPS, 1954-79

YEARS	ALL FARMS	LESS THAN 5 ACRES	5 ACRES TO UNDER 25 ACRES	25 ACRES TO UNDER 100 ACRES	100 ACRES TO UNDER 500 ACRES	500 ACRES AND OVER
1954	198,883	139,043	53,024	5,603	881	332
1958	199,489	141,224	53,300	4,012	639	314
1961	192,000	146,000	41,053	3,785	766	347
1968/69	193,359	151,705	37,607	3,055	699	293
1978/79	183,988	150,633	29,839	2,400	821	295

SOURCE: STATIN.

Leased land is the second most important tenurial form. It accounts for 9% of the area, followed by rent free (5%) and rented land (4%)<sup>23</sup>. When the information on tenure is related to that of size distribution, a higher proportion of the land is owned as farm size increases. Approximately 83% of the area is owned for holdings in the 50-100 acres group, compared to 91% being owned in the largest farm size group (> 100 acres). In the small farm category, 43% of the land is held rent free, indicating the lower economic status of this group.

Single holders are the overwhelming majority of land users in the country (99.1%), but they only farm 62.6% of the total area. Small farmers that are landless and those that operate less than 5 acres are the largest group of single holders (82%). Together, however, they operate only 25% of the total area farmed. The government, corporations and cooperatives account for a high proportion of land utilization. This picture, however, could have changed significantly in recent years as a result of the divestment of public lands and various public sector enterprises operating in the agricultural sector.

Landless farmers comprise 4.2% of all farmers in Jamaica. The largest groups are found in St. Catherine (22.7%), Clarendon (21.7%) and St. Thomas (10.4%) and the least in Hanover (1.5%). The remainder is more or less evenly distributed among the various parishes. This category of farmers consists mainly of small livestock growers who utilize idle public lands to rear cattle, goats and sheep.

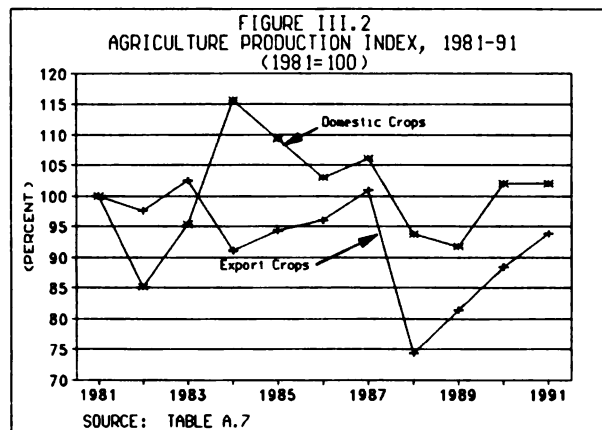
### 3.3 Production Trends

#### 3.3.1 Domestic Crops

The domestic crop sub-sector includes root and tuber crops (yams, cassava, potatoes and others) which are the most

important in terms of output volume and value. Other crops which make up the traditional diet are legumes, plantains and vegetables. Grain production is a minor activity. Yearly output of the two major grains, corn and rice, meets less than 5% of total domestic requirements.

Crop production is the largest sub-sector. It accounted for about two-thirds of the value added by the agricultural sector in the last decade. Production for domestic consumption is the principal sectoral activity. Nearly one-half of agricultural GDP has been associated with its development. Since 1981, output of domestic crops has been cyclical, with an overall downward trend (Figure III.2). Root crops, which contribute approximately 18% to domestic crop output, has declined since 1986, while other domestic crops have trended upwards. Tubers, fruits and ornamentals have also increased their importance as non-traditional export crops in the 1980s.



One of the main objectives of Jamaica's agricultural policy in the last decade was to compensate the decline in traditional exports (bauxite, alumina, sugar and bananas) by expanding foreign sales of domestic crops. The sector's response to this objective, however, was mixed. The value of non-traditional agricultural exports almost doubled in 1983-87, largely due to exchange

rate appreciation and favorable export prices<sup>24</sup> rather than increases in the export volume. This was followed by a decline in both export volume (28%) and value (17%) during 1988-90 and a strong recovery in 1991 (14%) in value terms.

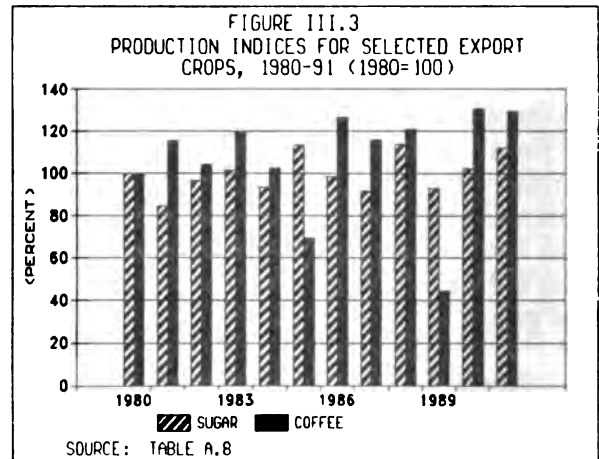
The future of crop production for the domestic market does not seem bright. Among other factors, the growth of this sub-sector is affected by: (i) the existence of a large number of small and fragmented holdings operating on steep terrain and generally, on infertile soils; (ii) deterioration of resources through soil erosion; (iii) the use of inappropriate technology; (iv) inadequate research and support services; and (v) the income elasticity of demand for the typical food products of hillside farmers is low or negative, and these commodities are increasingly of less importance in the diets of urban consumers. In spite of these factors, the potential for expanding domestic crop output could be conceivably greater if production is shifted from the hillsides to the valleys and coastal plains. This however raises several issues, the most important being the competition for land between traditional and non-traditional export products.

### 3.3.2 Export Crops

Export crops include sugar, bananas, cocoa, coffee, citrus and pimento (allspice). Since 1981, this sector has performed poorly, with output levels often below that of the beginning of the decade (Figure III.2).

Sugar is the most important export crop. In 1991 it accounted for 13% of agricultural output and 53% of the total value of agricultural exports. It is grown on approximately 50,000 ha. scattered on the plains, representing more than 20% of the cropland cultivated in Jamaica. It is currently produced by eight sugar factories, cooperatives and about 15,000 independent

farmers. Sugar production fluctuated in the 1980s, but the overall performance was a positive one (Figure III.3).



More than 60% of the sugar output is exported under quota arrangements to preferential markets. The United Kingdom is the most important. It absorbs about 85% of Jamaica's exports and contributes 90% to sugar export earnings. Exports are made also to the United States, averaging about 15,000 mt/year since 1988. The remainder of the production has been insufficient to meet domestic needs in some years, resulting in imports of about 25,000 mt/year (in 1988-90).

The sugar industry has been affected by nationalization of factories and estates, labor unrest, declining productivity, inadequate irrigation system and poorly maintained roads. Efforts are being made through a rehabilitation program and more efficient management practices (since 1985) to improve the sector's performance and meet a production target of 245,000 mt/year. This level of production would satisfy both, the preferential market quotas and the domestic needs.

A major uncertainty concerns the future of Jamaica's access to the premium price European market<sup>25</sup>. This access depends upon the continued existence of sufficient

cane sugar refining capacity in the United Kingdom, a condition which is questionable once trade liberalization is achieved in the single EEC market in 1993.

Banana is the second most important export crop of Jamaica. Like sugar, it enjoys preferential access to the UK market under the Lome EEC-ACP agreement. This crop is grown by medium-size producers and a large number of small farmers (<5 acres) in several areas where the rainfall, temperature and soil conditions are suitable.

Production declined markedly over the long run, in regards to both quantity and quality, but in recent years the sub-sector's performance has shown some signs of recuperation. Output declined by almost two-thirds in 1980-84, largely due to factors such as low prices paid to farmers (a practice which has been eliminated through privatization of the marketing function), failure to combat plant diseases and poor quality control. Since 1984 production grew substantially increasing from 11,559 mt to 75,290 mt in 1991 (Table A.9). Export earnings have more than doubled and fruit quality has improved<sup>26</sup>. The factors contributing to this improved performance include a restructuring program, the use of improved technology in some enterprises, increased yields, and additional loan financing and other services to small and medium farmers, the use of improved technology in some enterprises and increased yields.

As in the case of sugar, Jamaica's bananas are not viable for export to the world market at present cost of production. Moreover, the sector faces an uncertain future with the single EEC market coming into force<sup>27</sup>. If the EEC does not provide for a continuation of the guaranteed market access, Jamaica would be hard pressed to compete on even terms with cheaper Latin American bananas.

Coffee ranks third among the export crops in terms of contribution to agricultural export earnings. This crop is traditionally grown by small farmers on the hills and mountain slopes with minimal managerial and technical inputs. It is the export crop that contributes the most to the earnings of small farmers.

There is a substantial premium on the price of Jamaica's coffee, based mainly on quality characteristics rather than special market access. Jamaican Blue Mountain coffee, almost all of which is sold to Japan, is paid nearly five times the international price, and non-Blue Mountain coffee has sold at over twice this price. In spite of this, the domestic production of coffee was stagnant during the last decade (Figure III.3).

In view of the favorable market conditions for Jamaican coffee, a development program was outlined by the Coffee Board to allow for an expansion by 1995, and an increase in yields of non-Blue Mountain types on the existing planted areas. The Blue Mountain component of the program has proceeded slower than had been expected due to delays and setbacks. The non-blue Mountain component has not been successful because the rehabilitation of farms has lacked funding, and small farmers have been reluctant to purchase the required inputs to increase productivity.

Cocoa production indicates a cyclical behavior in the last decade with an overall upward trend. It increased from 4,200 mt in 1980 to 7,128 in 1983 and then dropped in the following years until reaching 4,374 mt in 1991. The bulk of the production is sold to the Cocoa Industry Board, and all that is exported goes to the European market, where it receives a modest price premium based on flavor. The Board has continued its policy to reduce production constraints concentrating its efforts on improved cropping patterns and rehabilitation of

enterprises through externally funded projects. It is expected that the implementation of these projects will increase yields by more than 50% to reach 36 boxes per hectare.

The typical cocoa farmer is a small-scale producer of advanced age, who produces a variety of commodities, often on fragmented holdings. Like the small-scale coffee producer, the cocoa farmer does not take advantage of yield increasing technology in spite of the benefits that could be obtained. Given the resource protection characteristics of cocoa production, the government is promoting its cultivation on hillside areas.

Citrus production stagnated during most part of the 1980s, except in 1988 and 1990 when output was the highest. Devaluation of the Jamaican dollar together with deregulation of the sector (since 1984) contributed to output increases in a few years but not on a sustained basis. Deliveries to processing plants averaged less than 33,000 mt/year in the period, with oranges comprising more than 60% of total citrus output.

Other traditional crops include pimento (allspice) and coconuts. The performance of the pimento sub-sector has been cyclical but generally stagnant during 1980-91, with production peaking at 3, 723 mt in 1989. Exports of pimento are currently about one-half of their historic peak in the 1930s, when the country's output accounted for 95% of world exports. So far, Jamaica's allspice has received a substantial export price premium, which the export board has been unwilling to jeopardize by increasing the export volume. Since 1988, foreign sales have averaged about US\$ 4.0 million. Coconut production has been cyclical with a downward trend in the 1980s. Output peaked in 1988 at 32,000 mt and has since declined to an average of 10,000 mt in 1989-90, mainly due to the effects of

hurricane Gilbert. In 1991 however, coconut production increased significantly (34%) due to a rehabilitation of planted areas.

### 3.4 Agricultural Productivity

Jamaica's agricultural productivity per unit area is relatively low vis-a-vis other countries. A comparison of the productivity level of 13 crops in selected Caribbean countries shows that Jamaica has high yields in 5 crops (sugarcane, sweet potato, cassava, onions and pigeon peas), and low yields in 3 others (Table A.10). Outside the region, Jamaica's competitiveness is worse, producing below 40% of the yield in the highest producing countries in seven of twelve crops<sup>24</sup>.

A number of factors have contributed to the low productivity level of Jamaican agriculture. They include: (i) the small size and fragmentation of holdings; (ii) inadequate land security; (iii) limited private and public institutional capacity to generate, test, adapt and transfer appropriate agricultural technologies; (iv) decline in the real levels of public sector support, particularly in the last decade; (v) inappropriate as well as low utilization of existing technologies; (vi) inadequate irrigation of cropland; (vii) labor shortages; and (viii) praedial larceny.

### 3.5 Livestock Sector: Structure and Performance

The livestock sector comprises a large number of small farmers, many of whom are subsistence producers. There are also some medium-size enterprises and a few large, commercial-oriented producers. According to the latest Livestock Census, in 1990 there were 20,633 beef cattle farmers, 753 dairy farmers and 651 pig farmers. Except for an increase in the number of beef cattle farmers (9%), the other figures are significantly smaller than the ones observed since 1982 (Table A.11). The parishes with

the highest concentration of beef cattle are St. Ann, Westmoreland and St. Elizabeth. The majority of the dairy herd is located in St. Thomas, St. Catherine and Manchester.

Poultry is the major local source of animal protein. This has influenced structural changes of the poultry industry in the last two decades, from small family flocks to larger commercial broiler operations. Most cattle is produced for beef, which is the second most important source of locally produced animal protein (Table III.4). Beef production supplies most of the local requirements and has been increasing in recent years, despite being more expensive than chicken and pork. Improved breeds for beef production (the Jamaican Brahman, the Jamaican Red Poll and the Jamaican Black) are usually raised on large commercial farms, while most subsistence farms use crossbreeds. Sheep production is not significant but goats and pigs are reared throughout the country, with goats being a major source of meat, particularly in rural areas.

The dairy industry in Jamaica is fairly developed compared to most Caribbean countries. Milk production and processing

are the major activities in the sector. It is largely in the hands of small farmers many of whom operate at a subsistence level. These farmers comprise more than 80% of all dairy farmers. They own about 60% of dairy and dual purpose cattle at an average of 2.4 animals per farm. There are also some medium-size farms and three large commercial dairies, Nestle, Alcan Dairy and Sergie Island. The latter two provides approximately 50% of total milk supply. The industry meets only 15% of the domestic requirements, the remainder is made up of imported products. The removal of input and output price subsidies, deregulation and currency devaluation have induced both higher imports of dairy products and a significant reduction in small farm dairying.

Livestock production presented an upward trend in the last decade. It increased in 1981-84, declined in 1985-86 and followed an upward trend until 1991 (Figure III.4). Total meat production increased, output of milk declined (1.6% per year) and pork production stagnated during the 1980-91 period (Table III.4). In contrast to this situation, in the second half of the 1980s,

TABLE III.4  
THE PRODUCTION OF MEAT, FISH AND LIVESTOCK PRODUCTS 1980-91

YEAR	MEAT (MILLION KGS)					FISH (KGS)	EGGS	MILK (LITERS)
	BEEF	PORK	LAMB & MUTTON	POULTRY	TOTAL MEAT			
1980	12.0	7.4	0.4	31.2	51.0	7.9	98.0	N.A
1981	11.8	7.5	0.4	29.4	49.1	7.8	95.4	N.A
1982	12.2	7.3	0.5	26.6	46.6	8.1	84.2	34.3
1983	14.1	6.6	0.6	32.7	53.9	8.3	99.5	34.3
1984	14.5	7.2	0.7	39.6	62.0	8.4	134.1	30.3
1985	13.5	7.3	0.7	27.9	49.4	8.7	100.3	21.4
1986	14.6	6.1	0.7	31.2	52.6	9.9	85.6	27.7
1987	13.9	6.5	0.6	37.7	58.7	10.5	114.7	30.8
1988	13.6	7.3	0.7	34.2	55.8	9.6	96.1	24.5
1989	13.4	7.5	0.5	38.9	60.4	9.9	99.4	24.9
1990	15.0	7.4	0.7	51.9	75.0	10.6	124.9	25.1
1991	16.1	4.7	0.6	53.4	74.9	10.3	110.3	23.0 *

1/ MILLIONS

\* PRODUCTION OF GRADE A MILK ONLY.

SOURCE: DATA BANK, MINAG.

### 3.6 Forestry Sector: Structure and Performance

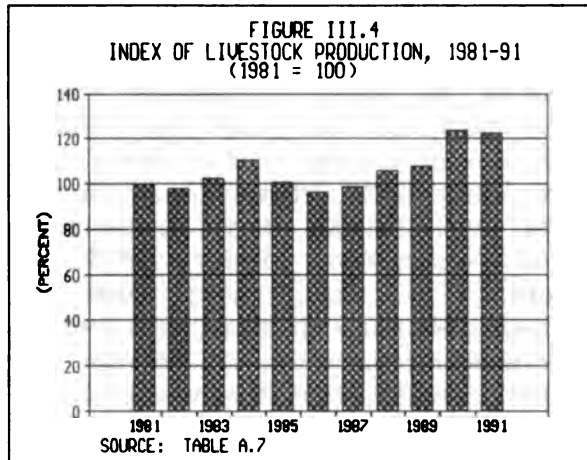
Forestry makes a relatively small contribution to national output. In 1980-91, it accounted for an average of 0.3% of GDP with output reflecting a downward trend (Table II.1). However, this sector is very critical to the economy because of the country's topography and its role in sustainable agricultural development.

Jamaica has four main types of forests: the limestone forests of the John Crow Mountains, central and western Jamaica; the shale forests of the Blue Mountains and Port Royal Mountains; the alluvial and wetland forests of the coastal plains; and, the anthropogenic forests. Of these, the limestone forests are the most common and widespread in the country.

Before the impacts of Hurricane Gilbert (1988), estimates of total forest area (more than 10% covered with trees) were between 308,000 ha. and 550,000 ha, including plantations and severely degraded rinate woodlands. Currently, less than 77,000 ha (6% of Jamaica's total land area) is undisturbed natural forests. There are over 21,000 ha. of plantation forests, mostly Caribbean Pine (*Pinus caribaea*). The forest species grown in plantations include timber trees and fruit trees such as cocoa, bananas, coconuts and citrus.

From a commercial standpoint, Jamaica's forest area is estimated to cover about 267,000 hectares. This area is subdivided into three major types: natural forests, rinate forests<sup>29</sup> and plantations (Table III.5). Ownership of the forests is divided into public (44%) and private (56%).

The area of productive natural forest for commercial timber is estimated at 77,000 ha. of which 77% is state-owned.



the output of beef, mutton and poultry increased significantly. Since 1990, poultry meat production has been the highest in the period, averaging more than 50.0 million kgs. per year. Per capita meat consumption increased steadily from 46 kgs. per year in 1980 to 53 kgs. in 1991.

The sector's development has been affected by several constraints that are related to its structure, public policies and institutions. It has a large number of subsistence farmers who have so far derived marginal benefits from improvements in technology and increased market opportunities. The level of public sector support, particularly technical services, has deteriorated in the last decade in view of fiscal austerity measures. Inflation and deregulation have affected production costs and product prices, making livestock activities uneconomic for many small farmers, and reducing the domestic demand for the industry's products. Moreover, with the reduction of trade tariffs and the removal of price subsidies (1992), small farm operations have been unable to compete with imported milk. These measures together with the elimination of the subsidy on imported feeds have also affected beef production, particularly fattening operations.



TABLE III.5  
PUBLIC AND PRIVATE FOREST OWNERSHIP, 1988  
('000 HA.)

TYPE	PUBLIC	PRIVATE	TOTAL
NATURAL FOREST	61	16	77
RUINATE FOREST	34	135	169
PLANTATIONS	19	2	21
TOTAL	114	153	267

SOURCE: NATIONAL FORESTRY ACTION PLAN, 1990.

The main producing areas are the Blue Mountains, the Cockpit country and the Dry Harbour Mountains. Although accurate information is lacking, commercial timber on private lands seems to be rapidly depleting and traditional quality species are becoming increasingly scarce. With regard to public forest land, much of it is steep or rugged and has no access. However, where accessible, trees are removed, often illegally.

Jamaica's economy benefits from the forestry sub-sector in several ways, namely production of wood products in various forms, wood-based fuels and environmental stability. The country's lumber production capacity is estimated to be approximately 50,000 m<sup>3</sup> (21 million board feet). Manufacturing is limited to output of logs for hardwood and softwood lumber, as fuelwood either for direct consumption or for charcoal production, as utility poles and sticks, agricultural posts and fence posts, and as carving blocks<sup>30</sup>. Tissue paper is produced also but from imported pulp. No manufacturing facility exists for veneer, plywood or other wood-based panels. The National Forestry Action Plan (NFAP) estimates that the current raw industrial roundwood requirements amounts to about 865,900 m<sup>3</sup>, of which 49% is utilized for charcoal production, 35% for fuelwood, 10% for hardwood lumber and 5% for softwood lumber.

In 1988, annual charcoal consumption was estimated at 60,000 mt, while

approximately 300,000 m<sup>3</sup> of wood were consumed directly as fuelwood, making wood-based fuels the largest share of forest products in Jamaica. Based on population growth, annual charcoal consumption is expected to grow at 1.6% per year. To produce the volume required on a sustained basis, 169,000 ha. of ruinate forests would have to produce in excess of 4 million m<sup>3</sup>/ha/year. The achievement of this goal seems quite unlikely in view of the poor condition of such forests.

Consumption of solid wood products consists mainly of softwood and hardwood lumber. Construction is one of the major end-uses of these types of lumber. Annual consumption of softwood lumber is estimated at approximately 106,000 m<sup>3</sup>, of which about 15% is produced locally. Prior to hurricane Gilbert, softwood lumber imports amounted to an average annual volume of 90,000 m<sup>3</sup>, but after it, local production has fallen to about 10,000 m<sup>3</sup>/year and imports have risen accordingly to meet demand. A modest volume of wood-based panels is also used, mostly in the form of plywood.

Jamaica's forests have been severely affected by human activities and poor management. High levels of poverty, both urban and rural, create a strong demand for inexpensive fuels (fuelwood and charcoal) which has contributed to extensive over-exploitation of the country's forests. Recent deforestation is primarily due to expansion of small scale farming and expansion of pastures. The current rate of deforestation is estimated to be between 3 and 3.3% per year, representing a loss or conversion to other uses of approximately 3,700 to 5,500 ha./year. At this rate, Jamaica will be denuded of all its forests in 30 years unless urgent steps are taken to arrest this process.

The sector also suffers from a lack of management and weak coordination among

the institutions and agencies involved in forest land management. Furthermore, access infrastructure is also a problem. This contributes to clandestine extraction, forest materials being exploited from increasingly remote areas and inadequate application of silvicultural practices to ensure regeneration.

### 3.7 Fishery Sector: Structure and Performance

The fishery sub-sector in Jamaica comprises freshwater and marine components. In 1991, it contributed less than 0.5% to GDP and 0.6% to total agricultural output. In 1992, it is estimated that the sector supported about 150,000 persons, of which 16,750 were registered artisanal fishermen.

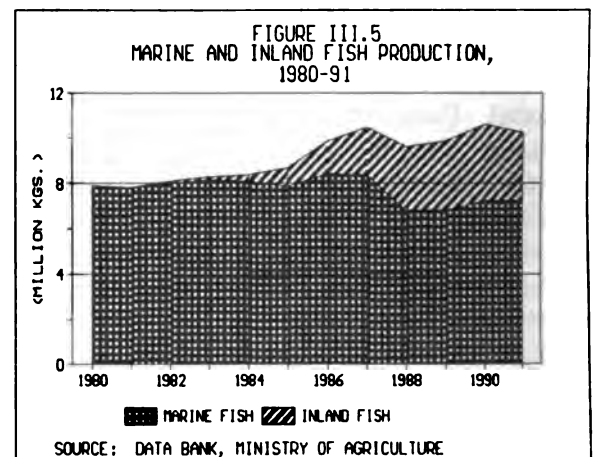
The marine fishing sub-sector is made up largely of small-scale fishermen operating from small open canoe-type vessels propelled by outboard motors or oars. Fishing occurs off both the north and south coast, but the major operations are located primarily off the southern coast. This fishery has two main regions, the inshore fishery and the offshore fishery. The in-shore fishery includes operations carried out on the continental shelf and in areas not exceeding 40 miles. Approximately 90% of the operators fish in these areas. The offshore fishery takes place outside the zone of nearby banks, and include the country's two largest banks and their small cays, the Morant and Pedro Banks, as well as operations in the territorial waters of other countries. Only 1,800 fishermen with larger mechanized canoes operate on these banks and on other offshore areas. The most important catch are groupers, snappers, welshman, kingfish, parrotfish and lobsters.

Freshwater fishery consists of aquaculture activities on fish farms. These activities are mainly located in the parishes

of St Catherine, Clarendon and St. Elizabeth. Inland fishery has expanded from a research activity in 1976 to commercial operations in the last decade. Fish farming is largely a private sector activity with extension and other technical support services and some inputs provided by the Ministry of Agriculture (MINAG). Fresh water snapper or tilapia, is the main fish farmed, but other species include carp and collosoma.

Currently, there are about 170 fish farmers operating a total of 1,800 pond acres (total surface water). Farmers are categorized as small (cultivating < 5 pond acres), medium (5-50 pond acres) and large (> 50 pond acres). More than 80% are considered to be small subsistence farmers that operate less than 1 pond acre, generally with minimal infrastructural developments. Most farmers are part-time and are involved in other economic activities such as farming and artisanal work.

Since 1981, there has been a steady growth in total fish output, with the exception of 1988 and 1991 when production fell by 8.2% and 3.4%, respectively (Figure III.5). Inland fish production increased by more than a hundred-fold in 1981-91. In 1988, Hurricane Gilbert adversely affected production of mainly marine fish, and in 1991, output of



inland fish declined by 11% due to a reduced water supply to major fish farming areas.

The country's marine and inland fisheries meet less than 45% of the domestic consumption of fish. Imports have fluctuated between 11.9 million kgs. and 17.2 million in the last 10 years. Even though fish constitutes an important item in the Jamaican diet, per capita consumption dropped from 30 kg./capita/year in the 1960s to an average of 10 kg./capita/year in the last decade. This decline could be attributed to several factors, including increased production of substitutes such as poultry and pigs and the lack of development of aquaculture.

Jamaica's fishery is over-harvested, under-managed and declining rapidly. Parallel to the decline in productivity, fishing activities are increasing. Marine fishery is characterized by falling catch rates, under-capitalization, declining real income of the fishermen, changes in species composition, reduction in the average size of fish caught and increasing conflict (e.g. a high incidence of fish pot stealing) among fishermen. Praedial larceny is a significant constraint to all aquaculture operations, and it is estimated that reef fishermen lose up to 23% of their catch to larceny and/or piracy.

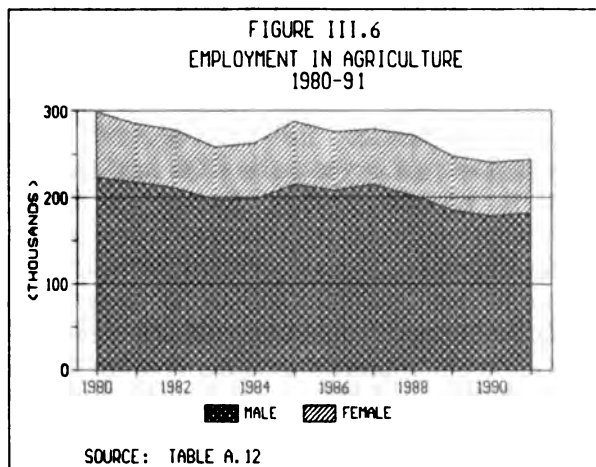
Water is an essential input for fish farming, and the competition for this resource has increased significantly in recent years, particularly with sugar cane and other crops. In some areas (e.g., Clarendon), the intrusion of saline water has reduced expansion of supply from underground aquifers, while the destruction of various watersheds has restricted supply in many rivers.

The sector suffers also from inadequate technology which limits productivity, particularly in the aquaculture sub-sector.

On the one hand, technology is transferred very slowly to small farmers; on the other, farmers are slow to adopt improved technology, probably because of their conservative nature (i.e., high risk aversion). With regard to public sector support, this has been very inadequate. Since 1988, the financial and other resources available to the principal supporting agency, the Fisheries Division of the MINAG, have decreased by about 50%.

### 3.8 Labor Force and Employment in Agriculture

Among the productive sectors, agriculture is the largest employer of labor, accounting for 243,700 jobs in 1991 or approximately 27% of the total employed labor force. The sector's employment, however, followed a downward trend during the last decade (Figure III.6). The proportion of people employed in agriculture dropped significantly in 1980-91 (10%) particularly in the last three years of that period when the sector's contribution to total employment dropped to less than 30%. Female participation has remained a constant proportion of the labor force in the last decade, accounting for 25%.



Compared with other sectors, unemployment in agriculture is estimated to be low<sup>31</sup>. Women in agriculture appear more at

risk than men with an estimated unemployment rate about three times that of men. It is estimated that, on average, labor actually employed in the agricultural sector is employed between 70 and 90 days per year.

The agricultural labor force is also characterized by the predominance of elderly workers. According to the 1978-79 Census of Agricultural, about 50% of the farmers were over 50 years old and 30% had more than 60 years of age. This feature still exists in the sector since policies in recent years have not been successful in encouraging the entry of younger people<sup>32</sup>.

Several studies show that there is a relatively low level of labor availability, particularly to small and medium-sized farms at affordable rates. At the farm level, a pool of unemployed family labor for farm work does not exist, mainly because of the non-attractiveness of agricultural occupation to people, particularly youngsters. However, deregulation of the economy and devaluation, have enabled farmers to receive higher prices and may have contributed to the 1.7% increase in agricultural employment in 1991. Increases in the cost of living in urban areas is also a factor that have induced some people to return and seek jobs in rural areas.

Remuneration in the sector also declined in real terms during the last decade and is a contributory factor to labor shortages. Within the sector, wage rates differ depending on the type of work done. Though the current minimum wage is J\$60/day, farm wages range from J\$80 to J\$100/day, with some workers earning more than J\$100/day for task work. Considering the cost of living, the low wage rate in the sector points to possible existence of other sources of revenue in addition to that from agricultural employment. These sources include one or more of the following: employment in services or in

the tourism sector; financial assistance from relatives in urban Jamaica or abroad; and work in ganja production and trade.

In recent years, many of the new developments in agriculture have taken place on land which was formerly part of sugar estates<sup>33</sup>. In so far as the labor force on such estates was predominantly male, the new high technology enterprises have a majority of female workers, indicating what appears to be a change in the structure of agricultural employment around former sugar estates. An additional characteristic is that these enterprises provide more benefits in the form of greater continuity of employment, particularly where vegetables are grown and other crops are planted in the off-season.

### 3.9 Women in Agriculture

Rural women have played an important role in Jamaican agriculture, particularly in the production and marketing of domestic crops and in fish marketing. The 1978-79 Census of Agriculture indicates that women operated 19.4% of all farms and 11.8% of the total area cultivated. The average farm size operated by women was about 1.1 ha., which is less than 50% of the average farm size operated by men<sup>34</sup>. The data also shows that approximately 39% of the women operated farms of less than 0.5 ha., and they comprised a significant percentage of landless farmers (40%). Factors which have contributed to the increased role of women in agriculture include the out-migration of youths from rural areas, the advanced age of male farmers and women's responsibility as heads of households.

Besides being farmers, marketers and heading rural households, women work as hired agricultural laborers, performing manual tasks such as weeding, molding, harvesting, assembling, transporting,

cleaning, grading and packing. The sector is the third highest contributor to female employment. Labor force statistics of 1991 show that women comprised about 46.7% of the employed labor force and about 25.2% of the agricultural labor force<sup>35</sup>.

Current information indicates that there are no significant wage differentials between male and female farm laborers if the same tasks are performed. However, male workers often prefer to be paid task rates rather than day rates, which could contribute to their earnings being higher than those of women at the end of the week.

On farms where both men and women are involved, their roles are complementary rather than separate. Men are mainly involved with land preparation, planting and weeding, while women's major responsibilities are for reaping, marketing, household chores, and many also work off-farm (domestic workers, sewing, etc.). Regarding crop specialization, yam cultivation is mainly men's responsibility, while women are most likely to be involved with vegetables. However, it is in the marketing and distribution of crops that women make the greatest contribution to domestic food production.

A survey of higglers (marketers), conducted in 1977, found approximately 14,000 operating in the island<sup>36</sup>; 83% were females and most had been "higglering" for 15 years or more. This situation is similar in the fishery sub-sector, where women are the major group of higglers. A large number of rural women market the household's products directly in local markets, or are involved in higglering.

The implementation of the structural adjustment program in the 1980s had an adverse impact on women, both as

producers and as wage earners. Specifically, it pushed women labor out of the sector. Approximately 8% of the female labor force left the sector between 1985 and 1989. In fact, more than 80% of the labor that left agriculture were women. The divestment and closure of sugar factories displaced women (who represented 25% of the labor) in the "temporary field gang category" on the affected estates. The privatization of the banana industry and the devastation caused by Hurricane Gilbert resulted in some boxing plants being closed and displacement of more than 80% of the female workers. Furthermore, there has been a drastic reduction in agricultural extension officers which affected the projects aimed at increasing production by small farmers including women<sup>37</sup>.

### 3.10 Role of the Small Farm System in Agriculture

The small farm system is the mainstay of the rural economy in Jamaica. Small farmers involvement in agriculture started in the colonization period, when most agricultural activity was done by slave labor. In the post colonial era, ex-slaves settled on marginal lands on the hillsides and around the former plantations. Thus, the pattern of land settlement contributed to the evolution of small farm agriculture with distinct characteristics in Jamaica.

Today, small farms are the principal production units in the sector. A substantial segment of the population depends on them for employment, income and source of food. According to the 1978/79 Agricultural Census, small farms (< 2.1 ha.) comprised the largest group in the sector, accounting for more than 80% of all farm enterprises. Furthermore, there were more than 150,000 small farms in Jamaica. Given an average of 4.4 persons per household, more than

660,000 people were linked to small farming. Furthermore, non-traditional agriculture contributed almost one-half to agricultural GDP in 1991.

Small farmers are the main food producers in the country, providing most of the food that make up the daily diet. They produce the bulk of more than 50 crops grown - roots and tubers, fruits, vegetables and legumes. Ground provisions (yams, coco, dasheen, sweet potatoes, cassava, Irish potatoes, etc.) are mainly grown for home consumption, although some, such as yams and dasheen, have a growing export market. They also grow tree crops such as coffee, cocoa, and pimento for the export market mainly. Fruits such as mangoes, citrus, ackees, breadfruit, bananas and plantains are cultivated for both home consumption or for sale to the local market and/or export. A variety of vegetables (tomatoes, cabbage, carrots, pumpkins, cucumbers, scallions and lettuce) are also produced for home consumption and for sale. Other minor crops grown both for home use and as a source of cash income include condiments, spices, herbs, beverage crops and legumes (mostly red peas, kidney beans, gungo peas or cowpeas).

Generally, the small farmer operates a complex farming system that integrates crop production with livestock (goats, cattle, pigs and chickens). Chickens, pigs, goats and cattle are among the livestock raised for home consumption and for sale in the local market. Goats are raised primarily for home consumption and for special occasions (e.g., Christmas). Sheep production is not very common but pigs and cattle are reared, while donkeys are used for transport by some farmers. Cattle are pasture fed, not tethered, and are marketed on a cash need basis, and when financial demands are large or growing. Persons regarded as landless farmers also rear some types of livestock. Besides crop and livestock activities, there are also a large number of small fishermen

who make a significant contribution to the fishing sub-sector.

Another common feature of the small farm system is fragmentation of farms. They are operated under different types of tenurial arrangements. The typical producing unit is between 1 and 2 hectares. It is fragmented into two to three plots which are often at a distance of between one to three kilometers from each other. Cash crops, especially tree crops, are normally cultivated on the plot(s) close to the house, which are often those with the most secure tenure. Other plot(s) are planted with annual crops.

The small farm production system is geared towards providing its own labor services and some income throughout the year. The household is the main labor source for small farmers. The average farming family of five has 1.5 labor units (husband full-time, wife part-time)<sup>38</sup>. With limited labor available in the family, most families have to resort to hiring labor, which is sometimes seasonal but fairly expensive. Other sources of labor could include youths, who may provide labor which often requires compensation.

Small farmers are not a homogeneous group in Jamaica. They could be categorized in several groups based on different criteria. For instance, they could be characterized by their geographic location: "non-hillside" and "hillside" farmers. While the first group are located throughout the country, they are mainly located on the plains around sugar estates and plantations. The average farm size in this category is often larger compared to other small farmers, and it is more likely that the farm unit is less fragmented and the plot is owner-operated. The farming system has evolved to be one of more monoculture and specialized production, in which there is dependency on one or two traditional crops (sugarcane, bananas, citrus, or coffee), a few non-traditional crops (vegetables) and

small dairy activities<sup>39</sup>. Production is market oriented with much of the output disposed of via marketing boards, as well as through higgler. The availability of secured markets has also induced these farmers towards greater specialization and intensive cultivation, achieving higher productivity and profitability than other small farmers.

The non-hillside small farm system in general, is more commercial oriented, and it utilizes hired labor, credit and irrigation water. The farmer may not own machinery, but he is likely to utilize more improved technology, mainly because of favorable soil conditions, easier access to extension services and exposure to various organizations (commodity boards, etc.) in the sector. With regard to their engagement in group organization, non-hillside farmers often have a higher participation rate than hillside farmers, because of their more specialized production system and exposure to various institutions (market organizations, extension services, etc.).

Although small non-hillside farmers have cultivated traditional crops predominantly, there is an increasing tendency for them to cultivate non-traditional crops for both the domestic and export markets. The topography of the land, possibilities for irrigation, proximity to markets and support services contribute to more intensive cultivation of non-traditional crops as well.

A large proportion of small non-hillside farm households depend on both farming and non-farm activities for supplementary income. Some individuals whose farms are not large enough to support the household, complement their income by hiring their services (and those of other household members) to other farmers. Off-farm activities are important sources for short-term cash and these include construction, shoe-making, service jobs in tourism, clerical and administrative work. The

income derived from these activities could be as high as that from farming.

Small hillside farmers are located at higher elevations, on marginal lands with slopes greater than 10 degrees and erodible limestone-based soils. Besides those small farms that cultivate coffee mainly in the Blue Mountains and other specialized crops, the rest of hillside farms are characterized by a small plot size with a mix of crops (food crops and permanent tree crops) and a few livestock animals. Compared with the non-hillside small farmers, hillside farms are more fragmented with approximately 80% of the total land being cultivated for domestic food production and the balance planted with a few export crops, mainly cocoa. Rainfed agriculture is practiced and inter-cropping is widely done, with production activities often influenced by factors such as farm size, location, water availability, altitude and soil conditions<sup>40</sup>.

Unlike the non-hillside farms, farming by this group is a labor intensive activity, with the farm household being the principal source of labor. Hired labor is used only for special operations. The level of technology is very low with little used of credit, and the farm is operated at or near subsistence levels, with production targeted mainly to meet the household food requirements and the surplus to meet cash needs. As a result, income security in the short run rather than profit maximization is the main economic objective of hillside farmers, and the farming system is not market oriented.

Because hillside farmers are more advanced in age and there is labor scarcity, farming is a full-time occupation and the land is sometimes under utilized. There is also a larger proportion of women farmers on the hillsides. With regard to group organization, this is very limited especially for those farmers that are located at higher elevations. They have less proximity to

support services, markets and tourist centers which reduces their interaction with existing institutions. Marketing of surplus products is mainly done by the farmer's wife in nearby markets or villages.

The farming practices of small hillside farmers in general, have negative impacts on the environment. Because of the fragility of the soil and the technology used, hillside farming contributes to soil loss and environmental degradation of watersheds, with adverse consequences on downstream farming, water pollution and destruction of wildlife and habitat.

#### IV. AGRICULTURAL POLICIES

In the 1980-92 period, the development of Jamaica's economy and of the agricultural sector was influenced primarily by policies aimed at economic stabilization and structural adjustment. The evolution of the agricultural policy in this period can be divided in three main sub-periods, based on the implementation of three Structural Adjustment Loans (SAL) and one Agricultural Sector Adjustment Loan (ASAL)<sup>41</sup>: (i) agricultural policy adjustment under the SALs: 1980-86; (ii) transition period between SAL and ASAL: 1987-89; and (iii) implementation of the ASAL: 1990-92. The major agricultural policy measures during these periods are presented below.

##### 4.1 Agricultural Policy Adjustment Under the SALs: 1980-86

Beginning in 1982, the government together with the multilateral (IMF, World Bank and IDB) and some bilateral funding agencies began to undertake major macroeconomic and sectoral policy reforms for economic stabilization and adjustment. In the early 1980s, the program for the agricultural sector was intended to increase production, productivity and agricultural exports through a set of

incentives and reforms in the following areas.

**Marketing.** In 1980 the support provided to the Marketing and Credit Division of the Ministry of Agriculture under a USAID project, resulted in the setting up of Producer Marketing Organizations (PMOs) with associated assembly and grading stations for agricultural products. At the same time, the Commodity Boards (EMOs) were deregulated and their non-marketing activities were divested to achieve greater marketing efficiency and improve pricing policy. As a result, the monopoly power of the EMOs for coffee, cocoa, citrus and pimento were formally abolished and approved producers and traders were allowed to export these products directly. Moreover, a management audit of the EMOs was started in 1982 and was completed in 1983. This resulted in the closure of the Agriculture Marketing Corporation (AMC), and its facilities were converted to an export center with capabilities for grading, storage and communication. In 1985 there were further deregulations in the external marketing system of the EMOs and continued divestment of their non-marketing activities. In that year also, a Rural Parish Markets Program funded by the IDB was initiated to improve the marketing facilities of 10 rural markets for domestic food products.

**Pricing.** In 1984 the EMOs initiated the design of a new farmgate pricing formula for the six main export crops - sugar, bananas, coffee, cocoa, citrus and pimento. Basically, the farmgate prices of these commodities were adjusted upwards to reflect export prices received.

**Credit.** In 1982, the agricultural credit system was rationalized by the establishment of the Agricultural Credit Bank (ACB). As a result agricultural credit operations were



centralized under the ACB structure, with the People's Cooperative Banks (PCBs) serving as channels for credit to small farmers. The new system was also supported by an IBRD-funded project aimed at the provision of credit for the expansion of export crops, infrastructure development and improvements in support services.

**Trade Policy.** A two-tiered foreign exchange rate regime was introduced in 1983 (official and market rates). Export earnings from non-traditional crops were allowed to be converted at the higher market rate, while earnings from traditional crops were converted at the official rate. In 1985, marketing arrangements for bananas were reorganized with the establishment of the Banana Export Company (BECO). Moreover, all remaining quantitative restrictions on imports were abolished, with the exception of some food commodities (wheat, rice, corn and soya) imported by the Jamaica Commodity Trading Company (JCTC). Import duty concessions were given to approved farmers based on certain factors such as: exporting to markets outside of CARICOM; earning foreign exchange; creating employment; and, their farming practices being compatible with conservation. These incentives are still available to both new and existing farmers.

**Land Policy.** A land titling project was initiated to provide titles to farmers, which would facilitate their access to credit. In addition, the government sold or leased some of its lands to existing tenants. Under SAL I about 3,600 ha. of these lands were divested. In 1983, the Agro-21 Program was launched to bring 8,100 ha into production over a 4-year period, and to facilitate and encourage private investment in agriculture on a commercial scale using improved technology.

**Disease control.** There were institutional changes in the MINAG resulting in the integration of the plant quarantine and product inspection units. In 1985, a fumigation and certification program was initiated, that established facilities for the fumigation and certification of agricultural products passing through the country's two international airports and the Kingston Port.

**Agricultural Research and Extension.** The agriculture research policy during the period was within the context of an Agricultural Research Project that was funded by IDB. Specifically, the policy was aimed at redressing the imbalance of the research efforts that concentrated mainly on export crops and cropping systems. The project involved the upgrading of the physical facilities at the Bodles Research Station, with the objective of centralizing public research in agriculture. However, the Commodity Boards (EMOs) continued their respective research efforts through the Sugar Industry Research Institute (SIRI), the Coconut Industry Board, the Banana Board, and to a lesser extent the Coffee and Cocoa Boards, respectively. Extension support was provided through the Small Farmer Development Program that was jointly funded by the Government, the IDB and IFAD, for delivery of credit efficiently and improving extension services to farmers.

**Others reforms** included a merging of the marketing and credit division of the MINAG with its production and extension division to improve program implementation and the delivery of services to farmers. In the crop-specific areas, other major policy initiatives were made to improve the output performance of mainly export crops - sugar, bananas and coffee. In the sugar sub-sector, efforts were directed to diversify from sugar to non-traditional export crops, so as to encourage greater efficiency in the use of sugar lands and broaden the export base. As a

result some sugar factories were closed and in 1984, under an IBRD-funded Sugar Project, the two largest publicly-owned sugar estates were placed under the management of a foreign private firm, Tate and Lyle. In addition funds were provided to rehabilitate sugar estates and factories, and for institutional strengthening of SIRI.

The banana sub-sector was restructured to facilitate production on large farms mainly, using high technology. Small farmers producing bananas that were located within a reasonable distance from the shipping port were also encouraged to re-enter into banana production for export. In the coffee sub-sector, the Coffee Industry Development Company (CIDCO) was established in 1981 to undertake production and extension related activities of the Coffee Industry Board. With regard to other products, the Agro-21 Program announced a program aimed at achieving self-sufficiency in milk, meat, rice, soya and fish. In addition, the increased production of cassava was targeted for use as a substitute for imported corn in animal feed.

#### **4.2 Transition between SAL and ASAL: 1987-89**

During the 1987-89 period, the government's agricultural policy included maintenance of the program and policy reforms that were initiated in the 1980-86 period. In this period, a major review of the agricultural sector was done by the government and the multilateral agencies. This review resulted in the design of the ASAL which began in 1987 and continued through 1990, when an agreement was reached with the IBRD on certain policy conditionalities. As with the SAP, attempts were made to rationalize macroeconomic policies with some sector-specific policies that were proposed. In addition, with other sectoral adjustment loans coming on stream during this period, the multilateral institutions placed conditionalities in these

loans that related specifically to the agricultural sector, such as adjustments in the trade and food pricing policies under the Trade and Finance Sector Loans. Furthermore, a land titling project funded by the IDB was initiated in 1988 to accelerate the land titling efforts of the government.

#### **4.3 Implementation of the ASAL: 1990-92**

Agriculture was the first to negotiate a Sectoral Adjustment Loan in the 1980s but it was not implemented until the beginning of the 1990s. The ASAL became effective on March 28, 1990, with the first tranche of US\$ 12.5 million disbursed on March 30, and the second of US\$ 12.5 million disbursed on March 26, 1991. Co-financing was provided by Japan's Overseas Economic Cooperation Fund, the IDB and the German government.

The ASAL was aimed at supporting the implementation of those structural reform measures in the sector that were delayed under the SALs, as well as encouraging more efficient allocation of resources, and removing the monopoly and monopsony powers of private and public sector entities involved in trade. The rationale for implementing the ASAL was the need for specific agricultural policy and institutional reforms. Most of these reforms were supportive of the earlier reforms in the sector and they were aimed at: (i) improving agricultural pricing policy by rationalizing the trade regime and eliminating untargeted food subsidies administered through the JCTC; (ii) adjusting agricultural credit policy; (iii) further de-regulation of citrus and cocoa marketing; (iv) supporting the land divestment and land titling programs; (v) addressing the problems of pesticide use; and (vi) ensuring the pursuit of appropriate macroeconomic policies that

were consistent with efficient development of the agricultural sector.

The scope of the specific policies implemented under the ASAL were:

**Trade Policies.** The government eliminated all quantitative import restrictions and the use of reference prices which had been put in place for the protection of small farmers. A new tariff structure and stamp duties were implemented for the relevant commodities that provided, initially, an equivalent level of protection as under the old regime. Simultaneously, a timetable for reducing these tariff rates to the level of CARICOM's Common External Tariff (CET) was announced. The new schedule would reduce the tariff rates of most items over a 5 year period to reach CET levels (5-30%), and between 5 to 7 years for selected items.

**Pricing Policies.** The government further rationalized food pricing by removing distortions, particularly on food imports and reducing the role of the JCTC. Prior to the ASAL, government had already begun to reduce the level of subsidies on various food items. Under the Generalized Food Subsidy (GFS) program, there was a system of cross subsidization, in which basic foods were sold by the JCTC to consumers at subsidized prices and price controls were enforced. Under ASAL, the government terminated JCTC's import monopoly of all foodstuffs and other commodities<sup>42</sup>, thereby allowing private sector to import these products, subject to the corresponding tariffs. In order to improve fiscal transparency, the full cost of the GFS program was incorporated in the Central Government's budget, starting in Fiscal Year 1989/90 as a separate line item and this would be reduced over time. In addition, under the IDB Trade and Finance Sector Adjustment Loan II, the monopoly powers of the JCTC were phased

out beginning in 1990, and eventually the GFS was eliminated in 1991.

**Agricultural Credit.** The three main issues addressed were the adjustment in the interest rate structure of agricultural loans from the ACB, arrears of the PCBs and widening the distribution channels of loans to small farmers. Up to December 1990, the interest rates on agricultural loans were 12% for small farmers (those with < 25 acres) with a maximum of US\$ 5,000 to any farmer, and 15% for medium and large farmers (> 25 acres), with the maximum financing reduced from 80% to 60%. These rates were low relative to the average weighted rates of 31.6% for non-agricultural loans. After December 1990, the rates for medium and large farmers were adjusted to equal market lending rates of commercial banks, while that for small farmers was equal to the 90-day Treasury Bill yield.

In 1991, under the ASAL, an agreement was reached between the Government, the IBRD and the IDB on a new agricultural interest rate policy. It was agreed that after all the conditionalities were implemented, the interest rates for small farmers would be equal to 7 points below the average yield of T-Bills that existed in the 12 months prior to the date on which the new system became effective. The agreed rate would also be revised for new loans at the end of every quarter. Later, the IDB negotiated a further reform under one of its sector adjustment loans, which adjusted the rate for small farmers to equal the T-Bill rate, thus eliminating the implicit subsidy. Each small farmer would be limited to a maximum of US\$5,000; above this, they could borrow additional funds but at rates applicable to those charged to medium and large farmers.

The loan rates for medium and large farmers were set initially equal to the average yield of T-Bills in the previous 12-

month period, and revised quarterly for new loans. As in the case of small farmers, this rate was also adjusted upwardly under the IDB's Sector Adjustment Loan, with the result that it now equals market lending rates set by the commercial banks (Table IV.1). In April 1992, the rate for small farmers increased sharply to 49% while that for medium and large farmers was 49% plus the respective margins of the commercial banks.

In its attempt to widen the distributional channels for loans to small farmers, the ACB changed its credit policy to allow any qualified financial intermediary to rediscount loans to these farmers. Thus, institutions such as credit unions are now able to access funds from the ACB to on-lend to small farmers.

**Marketing.** The Government agreed to remove all restrictions on persons wishing to purchase and export cocoa and cocoa products, and permitted legally constituted private firms to purchase, and process cocoa for export. In addition, membership in the Cocoa Industry Board was made voluntary as was payment of the cess. The buying and selling prices of cocoa were deregulated and restrictions that limited marketing to the Board or its agents were also removed. Regarding citrus, prior to ASAL, the Citrus

Growers' Association (CGA), which is a private producers' organization, was vested with regulatory and monopsony powers to control the trade in citrus and citrus products. Under ASAL, the relevant legislation was amended to remove these restrictions.

**Land Policy.** The ASAL targeted the distribution of 2,000 titles as one of the second tranche conditionalities, as well as the sale of about 2,800 ha. of suitable lands to small farmers. It was agreed also that at least 5 small agricultural and agroindustrial enterprises would be divested.

**Pesticide Usage.** The Government agreed to undertake a study to review the use of pesticides in the country and to develop an action plan to improve this. This study was completed with the assistance of the German government.

#### 4.4 Impacts of the Agricultural Policy Adjustments: 1980-92

**Budget Allocations.** A major objective of the structural adjustment program which began in 1981 was to improve the fiscal performance of the economy by setting specific fiscal targets. The program placed strict limits on the government's budget in the years that followed, resulting in a

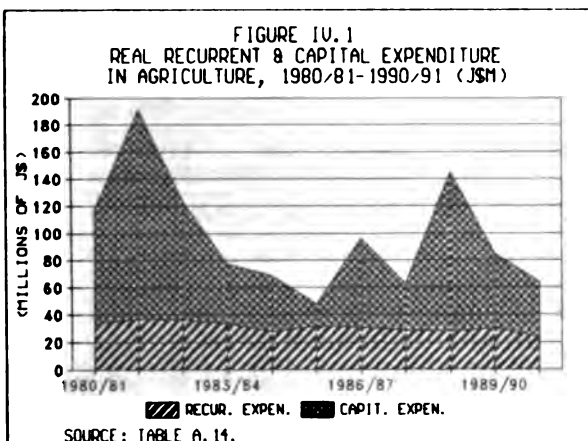
TABLE IV.1  
ACB'S QUARTERLY NOMINAL INTEREST RATE FOR AGRICULTURE

YEAR	SMALL FARMERS (%)	MEDIUM AND LARGE FARMERS
PRIOR TO DEC. 15, 1990	12	15 PERCENT
DECEMBER 15, 1990	23	30 PERCENT
APRIL 1, 1990	24	31 PERCENT
SEPTEMBER 12, 1991	24	24 PERCENT + MARGIN OF FINANCIAL INSTITUTION
OCTOBER 1, 1991	23	23 PERCENT + MARGIN
JANUARY 1, 1992	36	36 PERCENT + MARGIN
APRIL 1, 1992	49	49 PERCENT + MARGIN

SOURCE: ACB.

consistent reduction in the allocation to various sectors. These adjustments had a significant negative impact on the agriculture sector.

In terms of government's direct expenditure in the sector, both the recurrent and the capital component of the budget were reduced. Although the recurrent budget for agriculture increased in absolute nominal terms between 1981-82 and 1985-86, its proportion of the total recurrent budget was reduced from 2.3% to 1.6% over this period. In real terms, the trend in expenditure experienced a strong decline between 1980/81 and 1985/86 and a moderate upward trend in 1986/87-1990/91 (Figure IV.1). There were significant reductions in expenditure in areas such as agricultural extension, research, physical planning and soil conservation (Table A.13).



**Production.** As indicated in Chapter III, the sector's performance was relatively poor as indicated by the large fluctuation of the production index, especially during the early 1980s. Between 1982 and 1984, growth was significant because of increases in the production of domestic crops. This was probably due to some of the policies that prevailed in the late 1970s which favored the domestic sector. Over this same period, the export sector was in decline. In 1984-87, the index dropped with the domestic sector declining also, but

output from the export sector increased. Output declined sharply in 1988 due to the Hurricane Gilbert, but it improved significantly for both the domestic and export crops from 1989, due mainly to the incentive framework implemented under the SALs. However, the trend in domestic food production in 1980-91 was one of stagnation. Although there were large fluctuations over the period, the output level of the domestic sub-sector in 1991 was slightly above the 1981 level. It is important to notice that agricultural production in general, and domestic food production in particular, did not keep pace with population growth over that period.

**Exports.** The overall performance of the sector with regard to foreign exchange earnings was mixed but encouraging. After a decline of nearly 16% in 1985, export earnings grew by almost 25% in 1986, 22% in 1987 and 12% in 1988<sup>43</sup>. By 1991, foreign exchange earnings from traditional exports had risen to US\$ 160 million, an increase of more than 100% over the 1981 level. The increase in foreign exchange earnings was due to both improved production and higher export prices for most commodities.

The traditional export crop sub-sector showed some improvements over the 1984-86 period, although these were less than expected under the SAP. Since 1986, the values of traditional exports have grown steadily. Exports of non-traditional crops have also increased in some years, indicating a positive response to the policy initiatives undertaken by the government.

The private sector in particular has responded favorably to the government's program of diversifying agricultural production and creating new export opportunities. As a result of the reform initiatives, exports of winter vegetables in particular increased rapidly up to 1986,

but since then they have fluctuated and have generally been below their targets. Foreign exchange earnings, however, increased fairly steadily up to 1987 and then levelled off.

**Credit.** With the move to market interest rates on agricultural loans, there has been a dramatic decline in loan applications, especially among small farmers. In 1987-91, approvals and disbursements of loans steadily increased but there was a sharp decline in 1992. The low demand for loans can be attributed in part to high interest rates and to the moderate price increases for domestic food crops compared to the overall inflation rate. This is particularly the case for farmers who produce for the domestic market mainly, and are very reluctant to undertake the risk of borrowing at high interest rates.

**Food Imports.** Due to the overall stagnation in domestic crop production and the population increase, Jamaica relied more on imports and food aid to fill the aggregate food gap. Over the 1980-91 period, Jamaica depended on food imports to meet more than 50% of its total food needs. When the data is desegregated, this dependence on food imports is even more striking. The country is almost totally dependent on imports of rice, wheat flour, edible oils, corn and a little less on dairy products. In 1980-90, imports of rice and corn accounted for an average of 96% and 98% respectively of the total quantity consumed.

**Food Security.** During implementation of the SAP, Jamaica attempted to develop for the first time a structured food security program, with the primary aim of ensuring that individuals at most risk such as children under 5, pregnant and nursing women and the elderly, had access to a minimum amount of basic food. To achieve this, the government initiated the Food Stamp Program in 1984

and the Generalized Food Subsidy Program in 1986<sup>44</sup>. The first program was intended to address food security at the individual level and was targeted to certain social groups at risk, while the second was more general in its coverage. The strategy of both programs was to cushion the negative impacts of the SAP on the lower income groups in the country.

The government established generalized food subsidies to cover eleven items including wheat flour, cornmeal and powdered milk (Table IV.2). The JCTC was the main institution through which these subsidies were administered. In 1987, about 80% of the budget (US\$ 25 million) was spent on imported cornmeal and wheat flour. Since the subsidies were general, they benefited both the rich and the poor alike, which was not the intended objective of the program.

TABLE IV.2  
THE GENERAL FOOD SUBSIDY, 1989

FOOD ITEM	UNSUBSIDIZED PRICE (J\$/LB)	SUBSIDIZED PRICE (J\$/LB)	LEVEL OF SUBSIDY	
			(J\$/LB)	(%)
RICE	1.85	1.82	0.03	1.62
CORNMEAL	0.93	0.65	0.28	30.10
SKIM MILK	5.27	2.86	3.14	52.33
WHEAT FLOUR	1.15	0.85	0.33	28.69
POULTRY	5.17	4.70	0.47	9.09
COOKING OIL	6.55	4.50	2.05	31.30
SARDINES	7.50	4.35	3.15	42.00
SALTED FISH	5.20	3.80	1.40	26.92

SOURCE: WITTER, 1989.

## V. AGRICULTURAL INSTITUTIONS

There are two sets of institutions which provide support to the agricultural sector in Jamaica, public and non-public. The major public agencies are: the Ministry of Agriculture, the Agriculture Credit Bank (ACB), and the Rural Agricultural Development Authority (RADA). There are a number of External Marketing Organizations (EMOs) or Commodity Boards, which, although largely composed

of producers and not supported by the Ministry's Budget, are linked legally to the Ministry. These will be discussed under Producer Organizations, along with other private sector institutions and some major NGOs.

### 5.1 Agricultural Public Institutions

The public sector institutional framework has undergone fairly significant changes over the past ten years, as the government has implemented its Adjustment Programs. It was felt that the inherent structural problems within the central government system could be best addressed by strengthening some institutions and divesting others, and the agriculture sector was no exception.

In the early 1980's as the policy environment began to change, and the private sector was increasingly seen as the main vehicle for growth, it became clear that a new organization was needed to facilitate and promote investment not only in existing sectors, but also in non-traditional areas with potential for export. To this end the AGRO-21 Corporation Ltd. was created in 1983.

During the 1983-88 period, AGRO-21 increasingly took on more of the Ministry's functions, especially in the areas of project planning, land capability studies, development of crop profiles as well as market information and intelligence. At the same time, the Ministry's responsibilities were reduced in these areas and its focus became essentially those related to monitoring, regulation, and provision of support services, particularly to small farmers.

Since 1989, the government's policy has been to return to the MINAG the responsibility for the implementation of all major policies as well as the overall supervision and control of the government's agricultural program, and the re-building of

the support services, especially research and extension for the small farm sector<sup>45</sup>. In addition, the government has maintained its focus on attracting investors, and continued its policy of facilitating the private sector in productive activities. As the economic liberalization process continues, new avenues of collaboration with the private sector are being developed not only at the operational or implementation level, but also at the policy and planning level. The creation of the National Production Council (NPC), is an example of this latter type of collaboration<sup>46</sup>. In addition, the MINAG has been involved in critically reviewing its functions with a view to determining which of these could be best dealt with by the private sector.

A review of the performance of the principal public sector entities during the last decade highlights two major constraints that affect them, i.e. low salary levels and the associated high attrition rates of personnel, and a proliferation of institutions sometimes with overlapping functions. The fiscal policies implemented under the Adjustment Programs exacerbated these problems and served to further weaken the capabilities of public institutions.

#### 5.1.1 Ministry of Agriculture

The Ministry of Agriculture is by far the largest institution in the sector. Its main functions include: (i) contribution to policy making; (ii) coordinating the preparation and implementation of the Public Sector Investment Program (PSIP) in Agriculture; (iii) providing research and extension services; (iv) crop protection including quarantine; and (v) supervision of the External Marketing Organizations.

Because of the government's policies of reducing both the fiscal deficit and the level of public intervention, the Ministry of Agriculture underwent a review of its structure from 1989, with the objective of accommodating it to the new policy

orientation. As a result, the current organizational structure of the Ministry comprises 13 main units (Figure V.1).

In spite of the changes observed, the Ministry also continues to facilitate programs in extension in conjunction with RADA and the research division. In keeping with the objective of increasing efficiency, administration planning and policy coordination are being strengthened within the Ministry.

The Ministry is totally dependant on the government and external development funds to finance its programs. As Table A.14 shows, the fiscal policies implemented under the Adjustment Programs reduced the agriculture budget in real terms (both capital and recurrent), relative to the total budget. The recurrent and capital expenditure dropped in real terms from J\$33.7 million and J\$83.4 million in 1980, respectively, to J\$23.6 million and J\$40.6 million in 1991.

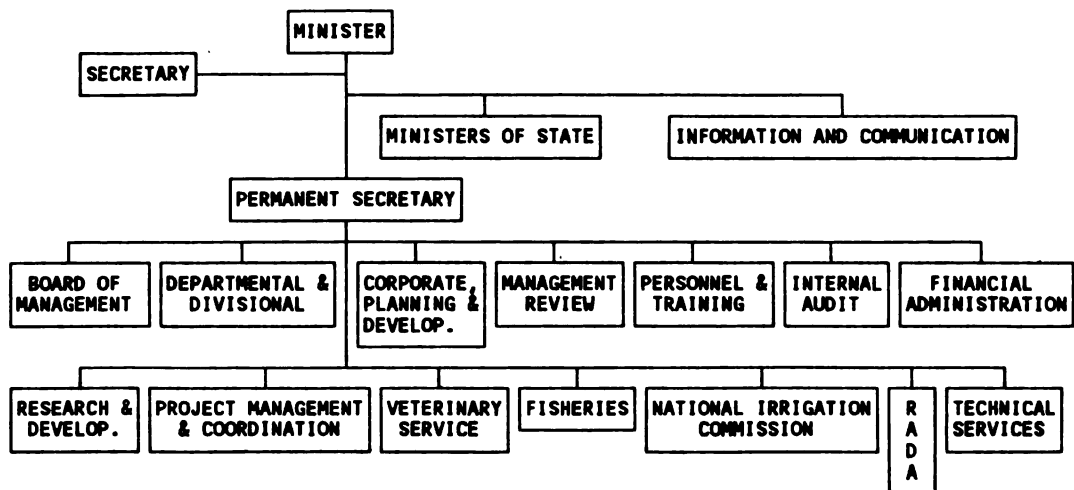
The problem of attracting and retaining qualified staff within the MINAG remains a serious constraint to its effectiveness. The relatively low salaries, coupled with structural problems which do not provide clear career paths for technical personnel, have contributed to high levels of staff

attrition. Moreover, the reductions in the MINAG's budget over time have also resulted in a number of positions becoming redundant in 1985 and more recently in 1992<sup>47</sup>. While there were instances of over-staffing in some areas, the more recent cuts and the freezing of posts have hampered severely the functioning of the organization. This is especially true in the managerial and technical levels, which have been hardest hit in terms of attrition. The government's ongoing Administrative Reform Program is aimed at redressing some of these problems in the long run, but in the short to medium term, the MINAG would be severely constrained in playing an effective role in the sector.

### 5.1.2 Agricultural Research

In contrast to other countries, Jamaica does not have a public sector institution responsible for agricultural research. This activity is undertaken by the MINAG's Research and Development (R & D) Division<sup>48</sup> created as a functional entity in 1979 to pursue the following major objectives: strengthen the institutional aspects of the research services of the MINAG; establish and/or upgrade agricultural research centers; implement

FIGURE V.1  
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF AGRICULTURE



SOURCE: MINAG.



research program in priority areas; and, upgrade local research skills through training programs.

The technical functions and operations of the R & D Division cover four main program areas: crop research; plant protection service; livestock research and development; and farming systems research<sup>49</sup>. The Division administers three agricultural stations - Bodles, Grove Place and Montpelier. The former undertakes work in the first three program areas while both Grove Place and Montpelier concentrate mainly on research.

The creation of the R & D unit involved the up-grading of physical facilities, but the fiscal constraints over the past few years have prevented their full utilization, mainly due to the inability of the present institutional structure to attract and retain a core of qualified researchers. At the moment, limited work is being done on farming systems research.

The relative ineffectiveness of agricultural research in Jamaica has been the subject of many reports and reviews over the past decade. While several recommendations have been made, little action has been taken. One of the major outcomes of this, is the low productivity and production levels of domestic agriculture. The major reasons for the deficient agricultural research services are:

- (i) the location of R&D as a division within the Ministry of Agriculture has resulted in bureaucratic constraints and poor work environment;
- (ii) unacceptably low levels of Civil Service salary and career development opportunities within the MINAG;

- (iii) absence of clear policies and strategies for the conduct of an effective applied research and development program;
- (iv) weak linkages with the Extension Services; and
- (v) fragmentation of agricultural R&D activities among a number of Commodity Boards, coupled with the absence of co-ordination of their work with the MINAG.

Most of the studies and reviews of the R&D services point to the need for an overall national coordinating body to provide leadership and focus in the agricultural R&D effort. Previous reports have also highlighted that, while the total funding for agricultural research in Jamaica is comparable to that of other countries, the output of research efforts is low and has little impact on production.

As a result of the poor performance of the R&D services, the Government decided to establish an autonomous, statutory body under the Ministry of Agriculture in the late 1980s. This body would have the mandate to conduct research and disseminate its findings. The rationale was that in upgrading the Agricultural Research and Development Division of the Ministry to an autonomous body, its ability to facilitate agricultural development would be enhanced. However, after consulting the sector, it was decided that the proposal to establish another statutory body would not be the most feasible option.

Given the above, the model that is currently being discussed calls for the establishment of a policy making body/council which would have overall responsibility for deciding on research policy and priorities. This policy-making body would have representation from the

government, private sector, the University of the West Indies, RADA, commodity boards and other relevant scientific and producer organizations. Responsibility for the actual implementation of research would be with the agencies such as the commodity organizations, while the Ministry would concentrate primarily on small farmer issues. The final institutional framework and operational plans are still under discussion, but it is likely that this broad framework will be adopted.

### 5.1.3 Rural Agriculture Development Authority (RADA)

Up to 1990, the Ministry of Agriculture had responsibility for the largest cadre of Extension Officers who provided services to the non-traditional crop and livestock sub-sectors. Parallel to that the Commodity Boards for traditional crops such as Coffee, Cocoa, Citrus, Sugar and Bananas provided extension service to farmers in these areas. In that year, however, the Government decided to incorporate its Extension Services in a new statutory organization, the Rural Agricultural Development Authority (RADA).

RADA's mandate is to serve small and medium-size farmers in the rural areas, by concentrating not only on technology transfer but also on the development of rural infrastructure and meeting the needs of the farm family as a whole. Its major objectives are:

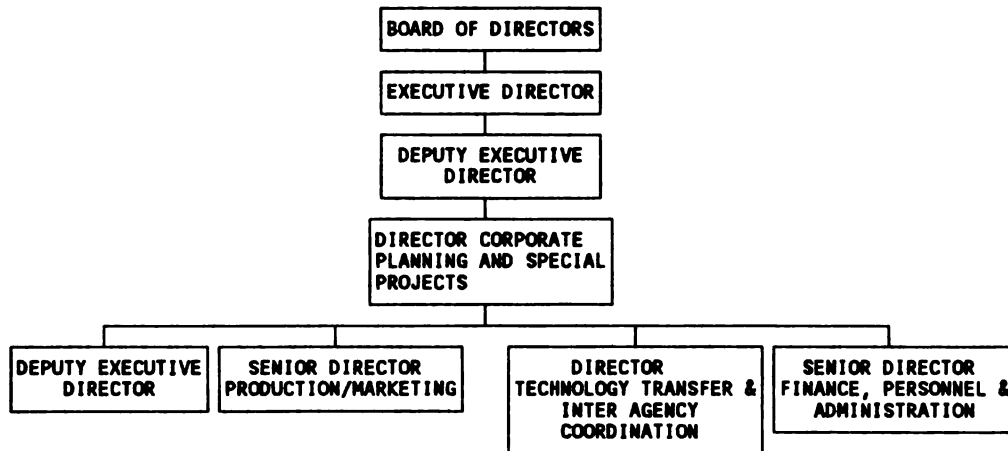
- (i) to adopt an integrated rural development approach with emphasis on the development of both the farm and its inhabitants;
- (ii) the provision of technical agricultural extension advisory services;
- (iii) training and development of extension personnel;

- (iv) the administration of farmer training programs;
- (v) to assist small farmers in organizing co-operative marketing and to disseminate timely marketing information to farmers;
- (vi) to liaise with other appropriate agencies involved in the development of rural infrastructure;
- (vii) to develop and operate rural agricultural service centers at strategic locations;
- (viii) to liaise with agricultural research organizations with a view to providing the research delivery link to small farmers;
- (ix) to provide a channel for the free-flow of policy inputs from the bottom upwards, and for the implementation of policy decisions from the top downwards.

RADA absorbed the existing Land Authorities, and embodied all their legal power. The Authority has also assumed the responsibilities of the extension and marketing services of the Ministry of Agriculture and those of the Soil Conservation Service of the Forestry Department.

The Authority operates on a decentralized basis with an Executive Director, a Deputy Executive Director and four Directors responsible for areas such as corporate planning and special projects, production and marketing, technology transfer and inter-agency cooperation, and finance (Figure V.2).

FIGURE V.2  
ORGANIZATIONAL STRUCTURE OF THE  
RURAL AGRICULTURAL DEVELOPMENT AUTHORITY  
(HEAD OFFICE)



SOURCE: RADA

The division responsible for inter-agency coordination represents an attempt at collaboration in the delivery of services in the rural areas between the public and private sector, especially NGOs and community groups.

RADA is funded through the central government budget as well as directly from external funding agencies. Like the MINAG, RADA has been affected by significant reductions in its fiscal budget. This, in turn, resulted in staff redundancies and curtailment of programs and services.

Three years after the establishment of RADA there are mixed reactions to its creation. First, the appropriateness of establishing a separate statutory body for extension is questioned. Second, RADA lacks the financial resources and technical capability to execute its programs. In the first half of 1992, the organization's budget was drastically reduced and its staff cut from 1,164 to 550 persons. As a result, RADA's current activities are targeted at only 20,000 out of 151,000 farmers. Third, the organization lacks effective coordination among its various units. Finally, there is a consensus that the existing extension service is

not properly coordinated with research and development programs to effectively transfer technology to small farmers.

#### 5.1.4 Agricultural Credit Bank (ACB)

The ACB was established in 1981 as a limited liability company<sup>50</sup>. The establishment of the ACB was an attempt to consolidate all public sector agricultural credit under one agency. Its primary function is to facilitate agricultural and agro-industrial development through the provision of loan financing.

The ACB was, therefore, given the responsibility for wholesaling funds for the agricultural sector through commercial financial institutions and the Peoples' Cooperative Banks (PC Banks). The commercial banks are responsible for on-lending to large producers and the Peoples' Cooperative Banks to small farmers.

The ACB's overall policies and programs are guided by a Board of Directors consisting of 11 members. There is one central office with 4 zonal offices. Operations at the head office

are concentrated in 5 divisions, each reporting to the Managing Director (Figure V.3). Within the zones, there are between 3 to 5 development officers, and 3 debt recovery officers, in addition to the managerial and clerical staff.

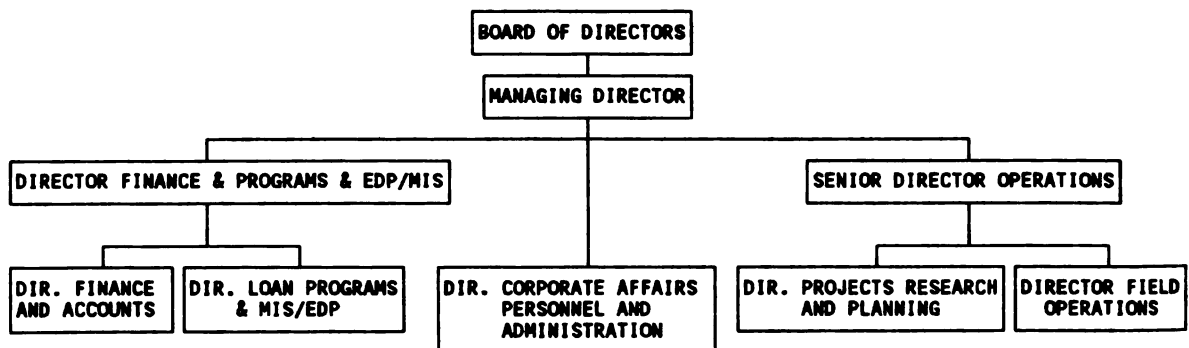
Since its establishment, the ACB has performed satisfactorily and the delivery of credit has improved. Loan commitments grew from J\$ 13.1 million in 1982/83 to J\$ 437.3 million in 1992<sup>51</sup>. In spite of this, however, reviews of the ACB system have highlighted some problems: delays in the processing of loans; poor loan management, especially of the PCB's portfolio; need for widening the distribution channels of ACB funds; and, the need to narrow the differential between interest rates on agricultural loans and market rates.

In view of these problems, the ACB restructured its operations while retaining both its basic function as a wholesale institution and its major objective of mobilizing all public sector agricultural credit. The Field Operations Division of the Bank, which oversees the small farmers' program, was re-organized to include a number of Development Officers needed to support not only credit delivery functions,

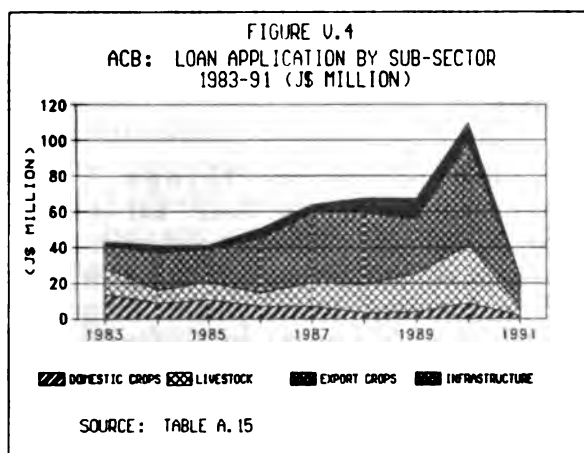
but also, to prepare farm development plans and to give technical assistance to small farmers accessing loans through the PC Bank system. The AC Bank's Projects Department was also streamlined and strengthened, in order to appraise and process loans in a more efficient manner.

Up to the end of 1991 the ACBank had issued approximately a total of J\$1 billion in loans to the sector to finance agricultural and agro-industrial projects. Approximately 29% of the loans went to small farmers<sup>52</sup>. In terms of allocation to sub-sectors, the lending thrust reflects the policy of targeting export crops mainly. Consequentially, the export sector received the largest allocations (30-60%) during the 1983-91 period (Figure V.4). Within the domestic sector, the most important areas in terms of credit allocation were inland fishing and poultry. The large increase in loan allocations observed in 1990, was due to impending interest rate increases and farmers' attempts to access loan funds at subsidized rates before the new policy became effective. In 1991 and 1992, high interest rates resulted in a sharp drop in borrowing.

FIGURE V.3  
ORGANIZATIONAL STRUCTURE  
OF THE  
AGRICULTURAL CREDIT BANK



SOURCE: ACB.



### 5.1.5 People's Cooperative Banks (PCBs)

The People's Cooperative Banks are an integral part of the ACB system. They started as early as 1905 and are responsible for on-lending ACB funds to small farmers. Presently there are some 109 PCBs operating under the control of both the Agricultural Credit Board<sup>33</sup> and the ACB. Because of the relatively weaker institutional capabilities of the ACBoard, the PCBs that are under its responsibility were not supervised properly, thus their performance was poor. Moreover, several other factors are responsible for the unfavorable image of PCBs, such as: (i) the perception that they operate as Government-aided organizations due to their link to the ACBoard; (ii) inadequate follow-up leaves a great number of accounts without any audit for up to ten years; and (iii) poor infrastructure, limited staff and services to farmers, and the lack of managerial capacity to increase and to broaden their services to the rural population.

In view of the problems arising from PCBs being controlled by two different agencies, in 1990 the government adopted a strategy - the Integrated Peoples Cooperative Bank Network (ICPBN) - to deal with the attendant deficiencies. This strategy was formulated with the assistance of the

Canadian International Development Agency (CIDA) and IFAD, and was aimed at improving the delivery of credit to small farmers through improved functioning of the ACBoard/ACB/PCB system.

As a result, the ACBoard now has only regulatory functions while the ACB is responsible for the operational aspects of the PCBs. The strategy also envisages a restructuring of the PCB system into an integrated framework under which the more efficient banks are designated as "hosts", those with weaker organizational capabilities and potential are considered "satellites", and those which are not anticipated to break even operate as "windows". The "host" banks would offer a wide range of credit facilities including loans for non-farming activities, while the weaker banks would deliver services in keeping with their organizational capabilities. PCBs have been strengthened in terms of management and upgrading of personnel skills. Nevertheless, they will continue to receive the necessary support from the Field Operations Division of the ACB to make them more efficient in the delivery of credit on a timely basis. In this regard, support has been provided by CIDA and IFAD through projects aimed at strengthening the rural financial markets.

The majority of loans disbursed through PC Banks have been used for the development of farms of less than 4.9 acres. Over 73% of the loans were below J\$ 10,000 with 48,000 between J\$ 2,500 and J\$ 10,000.

### 5.2 Producers' Organizations

Beginning in 1983, significant changes took place in the operations of the Commodity Boards, with the objective of reducing their monopsony powers. In March of that year, the Ministry of Agriculture issued deregulation guidelines for coffee,

cocoa, citrus and pimento which relaxed the export monopoly of the Boards and other agencies by allowing approved growers/exporters to export directly if certain conditions were satisfied.

The institutional framework and functioning of the Commodity Boards have been the focus of World Bank (WB) reviews. Thus certain changes were included as conditionalities in the three Structural Adjustment Loans (SAL). In general the restructuring carried out under those SALs was intended to streamline the operation of the Commodity Boards, to make them more efficient in their marketing function and offer a more market-related price to farmers. Consequent to this restructuring, most of the auxiliary services such as R&D, extension and crop care were transferred from the Commodity Boards to other agencies and institutions including the Ministry of Agriculture.

### 5.2.1 Coffee Industry Board

This Board is appointed by the Minister of Agriculture and is comprised of seven members: three growers' representatives and four nominated members.

During the last decade, the coffee industry experienced considerable deregulation of export marketing. After a management audit of the Coffee Industry Board (CIB) in 1981, it was decided to reduce the monopsony powers of the CIB. Thus, individual growers or cooperatives producing at least 10,000 boxes of cherry coffee were allowed to export roasted coffee directly. Moreover, persons not producing coffee, but who wished to become coffee roasters were able to obtain a license from the CIB to perform this task and to export directly. Quality standards, especially for Blue Mountain coffee were monitored by passing all exports through the CIB. These measures resulted in stronger competition in the marketing of coffee, and contributed to a significant increase

in the farmgate price of this commodity. The farmgate price for Blue Mountain Coffee increased from J\$ 2,937 per metric ton in 1982 to J\$ 17,343/metric ton in 1991.

Among other things, the implementation of the SAP led to the separation of the marketing and production functions of the Board. As a result, the Coffee Industry Development Company (CIDCO) was created to undertake the establishment of some coffee holdings, manage and deliver extension services and credit to small farmers. More recently, however, the functions of CIDCO were transferred to the Coffee Board. At this point in time it is not clear the extent to which the Board will continue to be actively involved in the production of coffee.

### 5.2.2 Cocoa Industry Board

As indicated earlier, the cocoa industry was also subjected to reforms under the SAP. In 1983 a legislation was passed allowing private growers producing a minimum of 200 tons of dry cocoa per year to collect, process and export cocoa directly under certain conditions<sup>54</sup>. However, because cocoa is cultivated by a large number of small farmers who are unable to meet the requirements for export, no private grower applied for a license. Therefore, in practice the Board remained the sole purchaser and marketing agent of Jamaican cocoa.

The Growers' Service Unit of the Board is responsible for the delivery of research and extension services to cocoa farmers, as well as for providing subsidized assistance for pest control. However, this aspect of the Board's operations has been affected by a lack of funds and personnel.

Under the Agricultural Sector Adjustment Loan (1990-91), it was agreed that the Cocoa Industry Board Act would be amended to allow for the elimination of:

(i) the requirement of minimum production; (ii) restrictions in terms of buying and selling prices; and (iii) constraints relating to the negotiations for the marketing of export cocoa. Moreover, the GOJ would continue to control the quality of exports through the Cocoa Industry Board, membership to the Board would become voluntary and no cess would be imposed on non-members.

To date, there is no evidence of increased participation of cocoa producers in the marketing process as a result of the deregulation measures. This is probably due to the large number of small producers in the industry, as well as the generally sluggish nature of the world cocoa market over several years.

### 5.2.3 Coconut Industry Board

Government's involvement in the Board includes the appointment of four members including the chairman. According to the Coconut Industry Control Law, the Board is responsible for: the establishment of copra factories; issuing licenses for manufactures in which coconut is used; arranging insurance against damage by disease or disaster; and marketing and research.

After the substantial damage inflicted by Hurricane Gilbert in 1988, the Industry has recovered well. Production increased approximately 34% since then, largely due to the rehabilitation program implemented by the Board. There appears to be considerable potential for import substitution of imported oils. Moreover, in the recent past there have been some attempts to increase exports of coconuts and seedlings.

### 5.2.4 Sugar Industry Authority

The Sugar Industry Authority (SIA) was established in 1970, its main responsibility being to regulate the marketing of sugar locally and for export. The SIA is primarily a regulatory body composed of sugar factory representatives (with the exception of the chairman who

is appointed by the Minister of Agriculture), farmers and trade unions. The Government is still the sole exporter and importer of sugar. It contracts private companies to physically handle importation, and manages the process through the SIA and the Jamaica Cane Products Sales Limited.

The SIA sets quality standards for the industry, establishes domestic sugar prices, fixes the cane price for growers and conducts research for the sector through the Sugar Industry Research Institute (SIRI). SIRI provides farmers with research and extension support services with a staff of about 60 persons. While the SIA provides assistance to all cane farmers, it supports the smaller ones through its loan programs, and a variety of subsidized programs for reaping, transport and irrigation.

### 5.2.5 Other Associations

There are four main institutions operating in the banana sub-sector. (i) The **Banana Board** provides the means by which the GOJ monitors the industry. Its main functions are: granting export permits for bananas; provision of insurance coverage for the industry; and undertaking research and development. (ii) The **Banana Export Company (BECO)** is a limited liability company of growers with responsibilities to export bananas. Any grower exporting at least one metric tonne of bananas is eligible for membership, and is assigned one vote per ton of export. No single grower can have more than 25% of total votes. (iii) The **Jamaica Banana Producers Association Limited (JBPA)** and its subsidiaries are involved in marketing and distributing bananas and other fresh products locally and overseas, agricultural production, shipping and the holding of investment. The 1991 earnings attributable to the JBPA amounted to \$313.3 million, an approximate six-fold increase over the re-stated profit for 1990. (iv) The **All Island Banana Growers Association** is a producers group that represents the

interests of banana farmers. It also provides extension support to small farmers. Over the last four years, the government has sought to encourage greater participation of small farmers in this organization.

The Citrus Growers Association Ltd. (CGA) was established in 1944 as a non-profit organization to provide technical assistance to the citrus industry and act as its controlling body. It provides limited extension services to citrus producers through its 72 branches and a staff of five extension officers.

The CGA conducts two important rehabilitation projects: (i) the European Development Fund Project, which aims at a two-fold increase in the yield of oranges and ortaniques in four years. It is funded by the Government with major assistance from the European Development Fund; and (ii) the Export Crops Project, aiming at the development of the citrus industry to foster growth in the export of fruits. This project is financed by the World Bank through the Ministry of Agriculture.

The Jamaica Exporters' Association (JEA) was formed as a limited liability company in 1965, in response to the perceived need for greater private sector participation in exports. Its main objectives are: (i) to devote attention to special requirements of the growing export sector; and (ii) to encourage its development and act as an intermediary in the dealings of the sector with the government in the establishment of a national export and development policy. The association has a Board comprised of 20 persons elected each year by the general membership.

The Jamaica Livestock Association Ltd. (JLA) was established in 1941. Its main objectives are: (i) to represent the farming community, and livestock farmers; (ii) to inform the farmers about the latest agricultural developments; (iii) to work closely with the government and to be concerned with the legislation that impacts the livestock industry; (iv) to insure that

products of the highest standard reach the consumer; and (v) to serve each community, wherever it is, with the highest level of professional competence.

### 5.3 Non-Governmental Organizations (NGOs)

It is estimated<sup>55</sup> that there are approximately 300 private voluntary organizations in Jamaica, of which only 20 can be considered organized NGOs. Many of these organizations work as an umbrella to smaller NGOs, such as: Jamaica Agricultural Society (JAS), Product Market Organizations (PMOs) and Peoples Cooperative Banks (PCBs). Other organizations that are fairly active in rural development include the Jamaica Agricultural Development Foundation (JADF), Project for People (PFP) and the National Development Foundation of Jamaica (NDFJ).

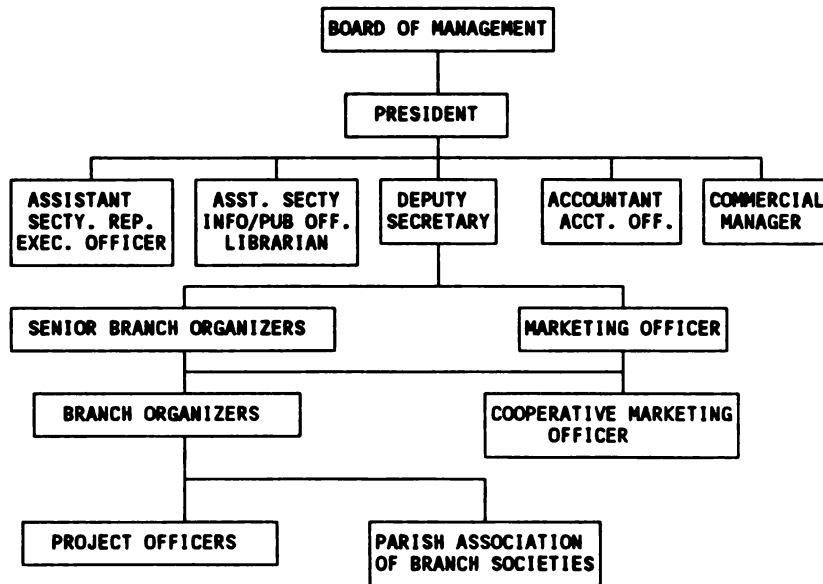
#### 5.3.1 Jamaica Agricultural Society (JAS)

JAS is the major agricultural NGO, representing farmers' interests in Jamaica. It was founded in 1885, and was incorporated as a private, voluntary organization in 1941. From the beginning it was closely identified with the Government and to this day it operates like a Statutory Board. Five members of the Government sit on its Board of Management, which is the most important council in its organizational structure (Figure V.5). Its official subvention is approved by the Ministry of Finance and is disbursed through the Ministry of Agriculture. Staff paid out of this subvention are subject to regulations governing civil servants. The Society has a large island-wide membership of farmers (82,665 in 1989) who are active in Branch Societies (1,090), coffee and cocoa cooperatives, as well as in other commodity associations<sup>56</sup>.

The main objectives of the JAS include: (i) to promote and encourage agriculture, horticulture, arboriculture, apiculture and



FIGURE V.5  
ORGANIZATIONAL STRUCTURE OF THE JAMAICA AGRICULTURAL SOCIETY



SOURCE: JAS.

stock raising in all their branches; (ii) to promote any company or organization that runs any business, school, exhibition, award premiums, farm model, experimental research which contributes to the agricultural economic welfare of Jamaica; (iii) to represent farmers on policy and other issues; and (iv) to facilitate farmers' access to government and other services, rather than to actually deliver these services.

The two main overall functions of the Society are to assist farmers to increase their productivity and defend the interests of farmers in the governmental and private agencies. Currently JAS activities encompass: (i) farmers' mobilization and representation; (ii) income generation, technology transfer, training and information; and (iii) cooperative development.

Over the years the Society has played an important role in organizing farmers into cooperative groups for collective marketing. It has influenced the formation of coffee and cocoa cooperatives, a food processing project and a product marketing cooperative. Moreover, it participated in the

creation of a Coffee Growers Cooperative Federation<sup>77</sup> and a Cocoa Growers Cooperative Federation with 14 cooperatives as members. JAS retains a relationship with other commodity organizations through membership on the Board.

JAS also works in conjunction with other agencies to develop projects with groups of farmers. At present, there are four such projects going on: (i) the Hillside Agricultural Project; (ii) Grape Project-Yallahs, St. Thomas; (iii) Highgate Pig Growers Association; and (iv) Bath Marketing Project.

The main sources of JAS's revenue are grants from the Government of Jamaica; subscription and fees from farmer members; grants from Commodity Boards and other agricultural organizations such as the Sugar Industry Association (SIAS); income from Farm Supply Operation; income from other commercial operations (seed potato distribution, pimento trading and the Denbigh Show); loans from financial institutions; grants from development institutions for project development (USAID, CIDA, JADF, etc.);

and grants from private companies. Moreover, the new EEC Extension Service Support Project, when approved will also assist JAS.

An assessment of JAS's performance carried out in 1991 by CIDA concluded that membership declined between 1965 and 1989; the number of field staff is less today than in 1965; the management of JAS reports modest profit performance in all income generating projects and accumulated losses of J\$ 3.5 millions on the Farm Supply Store operation, for which the Society has taken steps to re-finance; the number of resolutions processed has declined from over 200 in 1975 to about 75 in 1989-90; salaries, working conditions and productivity are in decline; there is heavy bureaucratization of its processes and politicization of the organization; the Society is facing acute resource scarcity and has been incapable of providing moral or tangible support to farmers lately.

Given this context, JAS has been making some efforts to improve its efficiency. Among other things it is carrying on a process of informal adaptation to both the new demand being placed on the organization and the persistent resource scarcity. Moreover, attempts have been made to improve the structure of the Society and to adapt its operational strategy through the establishment of the Board Executive Committee and the upgrading of the registry, respectively.

In spite of these efforts, additional measures have been recommended to: (i) ensure financial self-sufficiency and independence from the Government's budget; (ii) improve managerial effectiveness and employee productivity; (iii) cut losses and improve profits of existing commercial operations; (iv) revitalize the branch societies and the membership; and (v) increase the awareness of the members about agricultural policy issues<sup>58</sup>.

### 5.3.2 Jamaica Agricultural Development Foundation (JADF)

JADF is a not-for-profit private sector venture capital institution, created in 1984 primarily to provide venture capital and research grants for commercially viable projects. The Foundation's overall objective is to promote and develop sustainable agriculture and agri-business to assist in improving the economic and social well-being of the people of Jamaica. It works towards this objective by providing loans, venture capital, guarantees, technical assistance, grants and lease financing.

The Foundation adopts a flexible approach with respect to investment operations by accepting a wide range of securities (the value of crops, livestock, machinery and improvements made to agricultural land); offering grace periods to those ventures that require a substantial start-up period; granting moratoriums on both interest and principal; and converting accrued interest into equity.

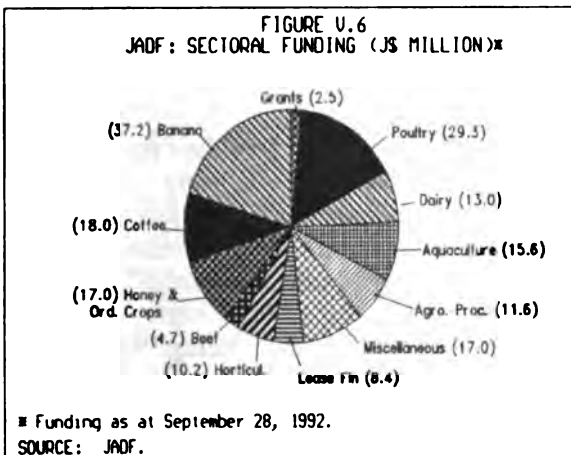
Following Hurricane Gilbert, the Foundation was selected by USAID in early 1989 to administer the Poultry Rehabilitation Program and the Banana Rehabilitation Program. Under the first of these programs, 84 farmers benefitted from loans totaling J\$ 15.3 million resulting in 1.8 million sq. ft. of poultry houses being restored. According to a 1991-92 annual report, the achievements under this program exceeded performance targets set by USAID. In the case of the Banana Rehabilitation Program, 114 farmers were included until March 1991, covering 913 acres of bananas.

In response to an identified need for equipment support, JADF established in the operating year 1989-90 a Lease Financing Program to assist farmers to acquire needed farm machinery, equipment and vehicles. Until 1992, 28 farmers were able to buy

new equipment through this financing facility.

In addition to the above, JADF has carried on youth programs (sponsorship of a young farmers competition and support to Elim Agricultural School) and assisted individuals and institutions in agricultural education through the International Farmer Training Program. Since the inception of this latter program, 26 Jamaicans have been trained, 15 of whom were sponsored by JADF.

JADF is funded by several institutions the principal one in terms of magnitude of allocated support being the USAID. During the 1984-92 period, that Agency provided a total of US\$ 26 million in cash grants, technical assistance and commodities to the Foundation. At the end of September, 1992, JADF's largest exposure was to the banana industry with approved loans totaling J\$37.2 million representing 20.2% of the loan portfolio (Figure V.6).

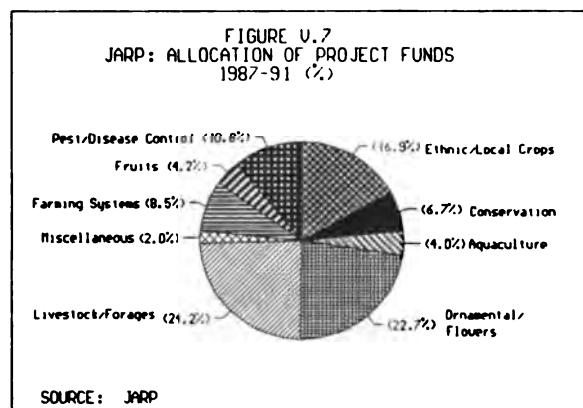


JADF also has an administrative responsibility for the Jamaica Agricultural Research Program (JARP). This Program was established in 1987 to pursue three major objectives: (i) to foster research aimed at alleviating constraints to increase agricultural productivity; (ii) to introduce or develop more efficient production methods; and (iii) to assist in upgrading research skills and infrastructure. The Program is not directly engaged in experimentation but

supports, through grants and contracts, research in public and private sector organizations. Project support includes: material and expenses, training for higher degrees, short term specialized training, technical assistance, information transfer, and assistance to attend conferences.

JARP's research takes place in a multi-institutional environment where personnel and facilities in already established institutions are used. Progress has been slow because qualified research scientists are scarce, however, marked progress is expected by JARP as the postgraduate students that provide most of the manpower for on-going research graduate become active in the local research system.

During the financial year 1990-91, twenty projects were approved with a budget commitment of J\$ 11,676 thousand. This brought the total number of projects approved to seventy with an overall commitment of J\$ 28 million. Until 1991 JARP disbursed approximately US\$ 4 million for projects. Among the priority areas for research, livestock/forages received approximately 24% of the total project funds (Figure V.7).



### 5.3.3 Projects for People (PFP)

PFP is a non-profit, community development organization registered in 1979 under the Companies Act. It was created primarily to promote the development of income-generating projects in depressed

communities as a means of improving conditions of life. PFP works with youth, women, small farmers and disabled people. In addition, it provides assistance to organizations involved in promoting the realization of cultural identity and democratic change in the society. Organizations which have benefitted in this respect include the Jamaica Council for Human Rights, the Kingston Legal Aid Clinic, the Women's Consumer Rights Project, and the Press Association of Jamaica.

At another level, PFP acts as a broker between international funding organizations and individual project groups and local development agencies. It supports a broad range of projects in cash crop cultivation, small scale livestock rearing, food processing, light manufacturing, ceramics and other craft. Furthermore, PFP is involved in the establishment of: (i) fuel forests to provide wood for charcoal burners; (ii) mini botanical gardens at schools; (iii) biogas digesters to provide fuel for cooking and for powering refrigerators; and (iv) windmills for pumping water.

To ensure the success of the projects, PFP has steadily extended its involvement beyond project identification and funding. The agency's ongoing activities include programs of social education and training for project participants, including subjects such as small enterprise management, organization development and the role of cooperatives.

There are two projects which in the view of PFP, most adequately manifest the achievement of PFP's mandate: The Salisbury Plains Young Farmers Cooperative and the Three-M Cheese-making and Dairy Improvement Project. The first of these projects was developed as a response to the problem of young school leavers who were unable to find viable means of employment. The project started in 1980 with 18 youngsters who, with the assistance of the Canadian University

Service Overseas (CUSO) and the Social Action Center Ltd. (SAC Ltd.) plus small individual contributions, acquired 4 3/4 acres of land. These lands are being used for growing coffee, rearing poultry for eggs and broiler meat production. In view of the problems caused by Hurricane Gilbert additional funding is needed to revitalize the farm from its present state of devastation.

The Three-M Cheese-making and Dairy Improvement Project was developed with the objective of making the Three-M area (Maidstone, Mayfield and Medina) the dairy capital of Jamaica. The project comprises three phases: teaching and cheese-making; dairy improvement; and colonization and settlement. The first two phases are underway and progressing fairly well, phase three is scheduled to start shortly.

PFP activities have been funded by a number of institutions. Currently the agencies that support it includes the Caribbean Conference of Churches, Jamaica Agricultural Development Foundation, Inter-American Development Bank and the embassies of several governments (Canada, Netherlands and Germany).

Like other NGOs, PFP has faced some operational problems, among them it continues to be seriously understaffed in relation to the demand being made by the government, multilateral organizations and financing institutions. In view of this limitation it has not been able to provide the level and quality of extension services in the Three-M Cheese Making and Dairy Improvement Project that is required for the upgrading of small farmers' management and animal husbandry skills. This has led to slow implementation of projects. Moreover, obtaining administration funding has frequently been a serious problem for this institution. Although some agencies are willing to finance projects, they are extremely reluctant to finance administrative costs. Given this situation, a recent evaluation of PFP indicated that in order for it to continue to exist it is

necessary that more secure funding arrangements be put in place.

#### **5.3.4 National Development Foundation of Jamaica (NDFJ)**

NDFJ is a private, non-government, not-for-profit organization established in 1981 through the efforts of the Small Business Association of Jamaica (SBAJ) and the Pan American Development Foundation (PADF). Its aims are to: (i) strengthen the economic base of small businesses by providing non-traditional credit to persons involved in manufacturing, commerce, services and agricultural activities; and (ii) improve the quality of business skills and practices through the provision of business guidance and technical services training.

To pursue these objectives the Foundation currently operates through four branches (Kingston, Ocho Rios, Montego Bay and Mandeville) and 3 sub-branches (Portland, Spanish Town and Savanna la Mar). Through these units it offers credit at competitive interest rates, loans for up to ten years and technical services and training. In 1991, 51% of NDFJ's loan portfolio was absorbed by the service sector, 26% by agriculture and 23% by manufacturing. In comparison to 1990 these figures indicate that the dominance of the service sector was being eroded by the growth in demand for agricultural loans and to a lesser extent, loans in manufacturing.

The services provided by NDFJ include business counselling, business promotions, business consultancy, entrepreneurial training and information services. In addition to these, NDFJ also provides research and development facilities, seminars and workshops, as well as institutional support to other agencies in the small business sector.

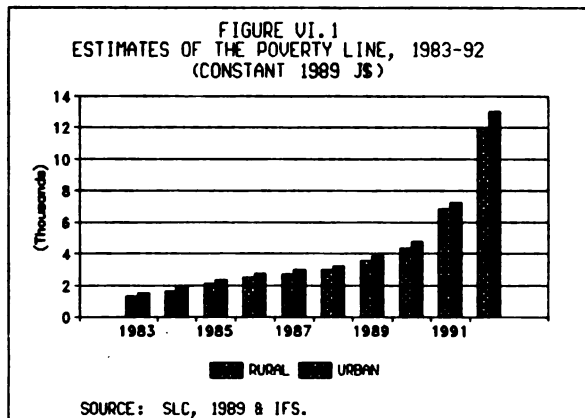
In order to finance its operation, NDFJ has received financial support from the Government of Jamaica and from several international funding agencies. Among the latter, the United States Agency for International Development has been the major source of funds to the Foundation. IFAD and IDB have also supported NDFJ's operations by providing resources that were used to service micro-enterprises through lines of credit. In addition to receiving collaboration from these institutions, the Foundation counts upon the proceeds from an Endowment Fund created in 1986 to finance its program of technical services and training. GTZ and CIDA are among the major contributors to this Fund.

With regard to NDFJ's performance, a 1991 evaluation revealed that at the end of ten years of existence, the institution had achieved the strategic target of a total company surplus on all aspects of its operations<sup>99</sup>. Notwithstanding this, difficulties were experienced in accessing adequate resources for on-lending.

## **VI. RURAL POVERTY PROFILE**

### **6.1 Overview**

Various studies have addressed the issue of poverty in Jamaica. Among them, the Survey of Living Conditions (SLC) provides a detailed view of living conditions in the country. Based on a least-cost basic needs basket, a poverty line, defined as the money income necessary to purchase this basket, was calculated by this study for both rural and urban areas. In the case of rural inhabitants, it was estimated that, in 1989, an adult needed J\$3,568/year (US\$621) to purchase the basic needs basket. By adjusting this figure for changes in the cost of living in both urban and rural areas, a poverty line was derived for the 1983-92 period (Figure VI.1).



According to that poverty measure, in 1989 nearly one-third of Jamaicans did not have that income, and approximately 70% of those falling below the poverty line lived in rural areas<sup>60</sup>. The high concentration of poverty in rural Jamaica is further supported by the fact that, approximately 82% of the poorest quintile of the population live in rural areas. Moreover, the higher welfare status of urban inhabitants is also indicated by the mean per capita consumption expenditure. In rural areas this is J\$ 613 while in "Other Towns" and in Kingston Metropolitan Area (KMA) it is J\$ 944 and J\$ 1,208, respectively.

Jamaica falls in the category of lower middle income countries and its pattern of income distribution is skewed. Over the 1980-87 period, the income share of the lowest 40% of the population was 15.3%. In 1988, the share of the poorest 20% of the country's households in total household income was only 5.4%. On the other hand, the share of the richest 20% of households was almost one-half of total income, with the share of the richest 10% being 33.8%.

A further characteristic of poverty in Jamaica is that one of the poorest groups are persons mainly self-employed in agricultural activities. Data from the 1989 SLC shows that households headed by a self employed agricultural worker had a mean per capita expenditure of US\$ 690.43, which was 71%

of that of the typical Jamaican household<sup>61</sup>. In contrast, households headed by professional, technical or administrative workers had a mean per capita expenditure of US\$ 2,108.52.

Since the poverty line approach is mainly associated with income, other indicators of well-being should be examined in order to get a more complete picture of the existing situation. This is discussed below.

**Access to basic services.** According to the SLC, in 1991, 24% of the country's population lacked access to potable water and more than one-half did not have modern sanitary facilities (Table VI.1). In the case of rural areas the corresponding figures were worse. Specifically, 94% of the urban population had access to private tap water vis-a-vis 60% in rural areas.

With regard to sanitation, the ratio of people lacking proper sanitary facilities in rural areas compared to the KMA was more than 3 to 1. There was a predominance of pit latrines (73%) in rural areas with only 25% having access to water closets. In contrast, in the KMA and in "Other Towns", 80% and 47% of the respective populations had access to water closets.

**Education Status.** According to the 1988-89 indicator on educational status, Jamaica has achieved universal primary education. At this level of education, the island is on par with most Caribbean countries (Table A.14). In the case of secondary and tertiary education, however, the enrolment ratios for that period were lower than the average of other Caribbean countries.

With regard to adult literacy, the rate for the 15+ age group in both 1970 and 1990 were significantly higher than those of Haiti and the Dominican Republic (the only other two countries for which data is available). Jamaica's literacy rates for those

TABLE VI.1  
POVERTY INDICATORS, 1991 (%)

AREA	INCOME	SERVICES		STATUS	
	BELOW POVERTY LINE	LACK POTABLE WATER	LACK SANITATION	NOT ENROLLED IN PRIMARY	MAL- NOURISHED
KMA	10.0	5.9	19.8	1.1	5.2
OTHER TOWNS	36.1	16.4	52.8	1.2	10.7
RURAL AREAS	40.7	39.8	75.1	1.7	9.8
ALL ISLAND	32.7	24.0	52.5	1.5	9.0

SOURCE: SLC, 1991.

two years were 97% and 98%, respectively, compared to the Dominican Republic which had a rate of 67% in 1970 and 83% in 1990. Haiti's rates were 22% and 53%, respectively.

In contrast to the above, within Jamaica there is a great disparity in educational attainment between the rich and the poor. According to the 1991 SLC, the enrollment rate for the age group 6-14 years was 80% for the poorest quintile and over 90% for the richest quintile. In the rural areas, enrolment rates for certain age categories compare favorably with that of the national average but they are lower than those of the richest quintile (Table VI.2). For the age groups 6-11 years and 12-14, the enrolment rates in rural areas were 98% and 96% respectively, compared with the national average of 99% and 97%.

**Health Status.** Jamaica compares favorably with its Caribbean neighbors in infant mortality rate (under age one and

under age five). In 1990, the mortality rates for the under age one and under age five groups in Jamaica were 16 and 20 per 1,000 live births, respectively. Of the other Caribbean countries only Barbados and Trinidad and Tobago had lower rates. The country also compares favorably with other Caribbean countries in the area of low birth-weight babies (i.e., babies born weighing less than 2.5 kg.). For the 1980-88 period, Jamaica had only 8.0% low birth-weight babies, the lowest rate relative to that of other countries in the region.

Jamaica's overall health profile compared to that of other Caribbean countries shows that its performance is mixed. The country compares favorably in the areas of access to services such as health, sanitation and safe water. Life expectancy statistics also show that Jamaica is highly ranked among other Caribbean countries, with only Barbados and Dominica having higher values in 1990 (Table A.15).

TABLE VI.2  
PERCENTAGE ENROLMENT RATES BY AGE, QUINTILE AND REGION, 1991

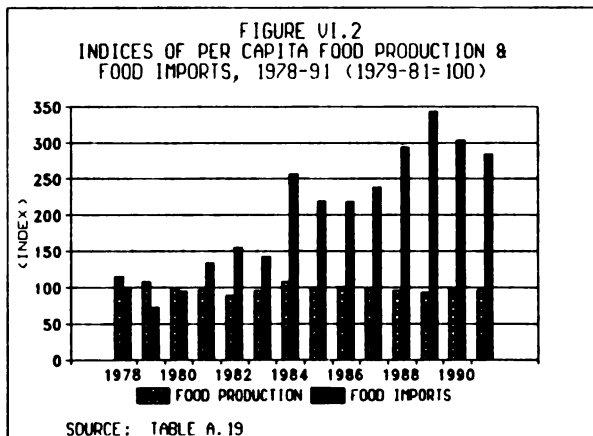
QUINTILE/REGION	3-5 YRS.	6-11 YRS.	12-14 YRS.	15-16 YRS.	17-19 YRS.	20-24 YRS.
QUINTILE						
POOREST	75.3	99.1	94.6	65.0	16.9	3.6
WEALTHIEST	93.1	99.3	98.4	91.7	30.6	7.7
REGION						
KMA	90.6	98.9	95.5	83.5	32.3	5.2
OTHER TOWNS	85.9	98.8	100.0	93.4	19.1	7.9
RURAL AREAS	77.5	98.3	96.1	70.2	15.0	1.6
ALL JAMAICA	82.5	98.5	96.5	78.2	21.1	3.9

SOURCE: JAMAICA SLC.

However, public expenditure on health (2.5% of GNP) is lower than that of Barbados (4.0%), Trinidad and Tobago (3.2%) and Guyana (4.4%).

#### Food Security and Nutritional Status.

Like many Caribbean countries, Jamaica is dependent on imports to meet a large part of its food needs. The country increased its import dependence, from an average of 61% in the 1970s to 66% in 1986-88. This increase could be explained, in part, by the shift in the country's trade strategy from import substitution to an export-oriented one since the mid-1980s. This is reflected also by the dramatic increase in food imports since 1984 (Figure VI.2). Although food imports declined in the first two years of the current decade, this was largely associated with a significant depreciation of the Jamaica dollar, as well as with unusually high imports in 1989 following the hurricane, and the removal of subsidies from some basic food items.



The trend in food production per capita index, reinforces the notion of import dependency. By the end of the 1980s, Jamaica's food production per capita was slightly lower than in 1979-81 (Figure VI.2). In contrast to this, in 1990, domestic food and livestock production showed a significant improvement compared to previous years. The volume of all categories of domestic food production registered significant increases due to good climatic

conditions and to the rehabilitation program which increased acreage and productivity. The strong growth in the poultry sector was stimulated by the removal of price controls on broiler meat which led producers to operate at full capacity and to increase productivity. The increased availability of food in 1990 may have contributed to the reduction in the prevalence of underweight children from 9.2% in 1989 to 8.4% in 1990.

In 1991 domestic food and livestock production declined. This fact together with lower food imports (6.4%) suggests that the country's food supply may not have been adequate. This could partly explain the 9% increase in the number of underweight children in that year.

With regard to food consumption, the latest two SLC show that in absolute terms, the mean annual food consumption expenditure in 1991 was smaller than that of 1990 for all categories of consumers (Table VI.3). However, as a percentage of total consumption, food consumption expenditure by both the poorest and rich increased in 1991 to 65.6% and 51.4%, respectively. This is largely explained by the surge in food price increases and a general decline in real incomes.

At the national level, Jamaica's malnutrition status is high (affects 9% of the population). In terms of geographical distribution, the rural areas recorded almost 10% in 1989-91 compared to 5% for KMA and nearly 11% for other towns. The SLC of 1989, 1990 and 1991 indicate that malnutrition in children (based on weight-for-age criterion) was more prevalent in the poorest quintile of the population (Table VI.4).

With regard to the nutritional status of children, three indicators are used to measure it: weight, wasting and stunting. For the 1980-90 period, the percentage of Jamaican children suffering from



TABLE VI.3  
MEAN PER CAPITA FOOD CONSUMPTION, 1990-91

QUINTILE/REGION	MEAN ANNUAL FOOD CONSUMPTION US\$		PERCENT OF TOTAL CONSUMPTION EXPENDITURE	
	1990	1991	1990	1991
QUINTILE: POOREST	197.8	154.5	62.8	65.6
WEALTHIEST	1,104.5	967.0	47.8	51.4
REGION: KMA	718.7	627.8	48.9	52.0
OTHER TOWNS	593.9	510.2	52.1	54.0
RURAL AREAS	455.4	375.4	58.8	61.2
ALL JAMAICA	497.2	477.6	53.1	55.7

SOURCE: SLC.

TABLE VI.4  
PERCENTAGE MALNUTRITION IN CHILDREN AGED 0 - 59 MONTHS, BY QUINTILE AND REGION, 1989-91

QUINTILE/REGION	UNDERWEIGHT			WASTING			STUNTING		
	1989	1990	1991	1989	1990	1991	1989	1990	1991
QUINTILE: POOREST	10.2	12.2	11.3	1.3	4.3	0.6	7.1	5.4	2.6
WEALTHIEST	9.1	4.5	8.1	0.0	4.5	1.4	3.4	2.2	4.1
REGION: KMA	7.2	19.9	5.2	0.0	6.3	8.1	3.6	3.6	1.5
OTHER TOWNS	7.9	10.1	10.7	3.2	0.8	0.8	5.8	3.4	1.6
RURAL AREAS	10.3	7.0	9.8	1.2	3.1	0.3	5.0	3.5	3.3
ALL JAMAICA	9.2	8.4	9.0	1.4	3.6	2.1	4.9	3.4	2.6

SOURCE: SLC.

under-weight, wasting and stunting were 7, 6, and 7 respectively, which are well below the average of 19,8 and 29% for countries categorized in the Medium Human Development group by the UNDP. The geographic distribution of underweight children shows no discernible pattern, but both the 1989 and 1991 SLC indicated a larger number in the rural areas compared to the other regions of the country. In the case of stunting and wasting, there is no indication of any predominance among the poorest quintile or of there being any concentration in the rural areas.

In general, malnutrition among children is significantly less prevalent in recent years compared to two decades ago. A 1978 Ministry of Health Survey indicated the existence of underweight, wasting and stunting being 15.0, 5.1 and 5.0% For 1991, the SLC shows that the rates had declined to 9.0, 2.1 and 2.6%. The lower

incidence of malnutrition in recent years may be attributable to the establishment of nutrition clinics as part of a Nutrition Surveillance program whose main objective is to promote optimal nutrition in the high risk groups (young children, pregnant women, diabetics and those affected by hypertension). Assistance through the PL480 Title II agreement in which wheat, soya blend, bulgur and oil were distributed, was also instrumental in ameliorating the high incidence of malnutrition.

## 6.2 Genesis and Magnitude of Rural Poverty

Poverty is not a new phenomenon in Jamaica. Like most countries, it has always existed both in urban and rural areas, but its incidence and magnitude have changed over time. To review the genesis of rural poverty in Jamaica, it is important to address the factors that contribute to this

situation. Among these, the major ones are the economic structure, trends in population, unequal income distribution, access to resources, low productivity in agriculture, rural unemployment and inadequate social services in rural areas. In assessing the Jamaican situation, the approach adopted here looks at these major factors.

Jamaica's economic development has been closely associated with the growth of a few productive activities that were concentrated in certain areas of the country. At first, these activities (primarily bauxite and sugar) had very little or no linkages with other sectors of the economy, and their performance was largely influenced by external market changes. The rate at which rural labor was absorbed by these industries was low. This fact, together with the existence of few non-agricultural industries in rural areas resulted in high rural unemployment. Later, despite the growth of other activities such as tourism, manufacturing and other export crops (bananas, citrus, cocoa and pimento), the impacts on employment were not significant, since they were mainly enclave in nature with few sectoral linkages or they did not employ significant numbers of hired labor throughout the year.

The rural unemployment situation was exacerbated by the trends in population growth. In the immediate post-war period, rural population growth rates were high, averaging more than 2.3%/year. Although internal migration and emigration were also high, the country's mortality rates improved considerably both in the urban and rural areas. The result was a population growth rate averaging more than 2%/year in 1950-70 and nearly 2.0% per year from 1970 to 1980.

Three other main factors have contributed to rural poverty in Jamaica: the skewed distribution of land, inequitable access to land and limited availability of good agricultural land.

Historically, the best agricultural lands, those that are fertile and relatively flat have been occupied by large plantations producing export crops. On the other hand, the majority of the rural population (excluding those in small towns) subsists on marginal land and on steep hillside areas, many with insecure tenure and limited infrastructural support. Income from hillside farming has not been sufficient to meet basic family needs despite utilizing a significant proportion of the land to produce food for home consumption. For these reasons, hillside farmers in some areas have had to seek seasonal wage employment in larger farms and in nearby towns to supplement their income.

Since there are only few non-agricultural industries in rural areas, land remains the single most important factor for producing food for household consumption. In addition, it provides surplus income to purchase food not produced by the household as well as non-food items. However, Jamaica is a mountainous country with very limited land suitable for agriculture. This fact, together with the structure of the land ownership remaining intact, result in a large number of rural households having limited or no access to land<sup>62</sup>. Furthermore, growing population pressure on the hillsides, and inappropriate technology and farming systems have increased land fragmentation and soil erosion, contributing to low productivity and living standards. Given the low agricultural productivity, low incomes and high rural unemployment, many people find it difficult to secure an adequate diet and meet other basic needs of life. Social amenities such as adequate water, schools, medical care and transportation are less available in rural areas. The above factors together are largely responsible for rural poverty and its perpetuation in the country.

**Magnitude of Poverty.** Based on per capita income, Jamaica has been experiencing a decline in economic welfare in the last three decades. The average real growth rate of GNP per capita declined by 0.2% per year in the 1980-89 period, following a reduction of 0.1% per year in the 1965-80 period. The country has been classified as a middle income country by both the World Bank and the UNDP. In 1990, Jamaica's GNP per capita was US\$1,510, well below the average of the middle income group (US\$3,810), and above only three other countries in the region that were also in the lower middle income category - Dominican Republic (US\$820), Haiti (US\$360) and Guyana (US\$340).

Jamaica's poverty situation could be considered to be high compared with most other Caribbean countries except the Dominican Republic, Guyana and Haiti which also have high levels of poverty. Based on data available on poverty in the Caribbean, in 1990, the proportion of people living below the poverty line was estimated to be 76% in Haiti, 65% in Guyana, 45% in the Dominican Republic, 43% in Jamaica and 16% in Trinidad and Tobago. In these countries, the proportion of rural people in the total population considered to be poor is 57% in Haiti, 41% in Jamaica, 17% in the Dominican Republic and 15% in Trinidad and Tobago.

In spite of having a relatively high level of poverty, Jamaica is in a better position than many developing countries based on other social indicators. In 1990, life expectancy averaged 73.1 years, 90% of the adult population was literate, about 98% of school-age children was enrolled in primary schools and nearly 92% had access to electricity. These figures are higher than the average of the medium development group of countries in which Jamaica is classified.

## 6.3 The Rural Poor

Using income as a proxy for welfare level, six groups of rural poor could be identified in Jamaica as living below the poverty line: (i) small hillside farmers; (ii) artisanal fishermen; (iii) households headed by women; (iv) unskilled wage laborers; (v) unemployed youth; and (vi) the retired and aged rural citizens. Based on demographic data for 1991, it is estimated that the six groups identified comprise about 713,000 persons or approximately 60% of the rural population (Table VI.5).

TABLE VI.5  
CLASSIFICATION OF THE RURAL POOR, 1991\*

SMALL SCALE AGRICULTURE:	
SMALL FARMERS	460,000
ARTISANAL FISHERMEN	15,000
UNSKILLED WAGE LABORERS	80,000
UNEMPLOYED YOUTH	70,000
RETIRED & AGED CITIZENS	88,000
TOTAL	713,000

\* HOUSEHOLDS HEADED BY WOMEN ARE INCLUDED IN THESE CATEGORIES  
SOURCE: BASED ON POPULATION DATA AND THE SLC.

### 6.3.1 Small Hillside Farmers

There are two groups of hillside farmers: those that are located at lower elevations and those that are located at higher elevations in the watershed areas. The latter group is considered to be poor and they comprise the largest group of the rural poor in Jamaica<sup>63</sup>. They are poor because their income level is lower than other categories of farmers and workers due to a combination of factors including: (i) cultivation of small plots of land of poor quality including those that are squatted; (ii) high level of fragmentation of farms, which are operated in some cases under different tenurial arrangements; (iii) under capitalization of farm enterprise; (iv) use of inappropriate technology; (v) low productivity due to overuse of the land and poor husbandry practices; (vi) problems of weather and pests; (vii) inadequate infrastructure, marketing and transport

facilities; (viii) limited access to credit and inadequacy of support services; and (ix) absence of an effective government strategy for hillside agriculture.

Unlike other small farmers in Jamaica, poor hillside farmers in general do not supplement their farm income with off-farm employment, mainly because of their farming system and their remote locations. For this group, farming is a fulltime, non-commercial activity due to the labor intensive methods of cultivation, shortage of labor, fragmentation of plots and multiple cropping practices. Furthermore, the average age of farmers is about 55 years, and the hillside farms are often in areas which have poor roads and transport facilities.

Data on farm income is sketchy but farm operations have been extensively surveyed and modelled by the Ministry of Agriculture and other agencies. The typical small farm model indicates the following: the farm is less than 5 acres and multiple cropping is practiced; hired labor accounts for 33% of total farm labor; and, the average farm household is four persons. A 1991 survey of small farms in five watershed areas revealed that they were generally consistent with the above model, and that their average farm income was a little over J\$7,000 (Table VI.6). Considering that these farms support an average household of four persons, it follows that their average income level is below the poverty line.

TABLE VI.6  
AVERAGE FARM INCOME IN WATERSHED  
AREAS (J\$), 1990-91

YALLAHS	5,390
RIO NUEVO	8,720
GREAT RIVER	8,150
UPPER RIO MINHO	7,360
LOWER RIO MINO	6,270
<b>AVERAGE</b>	<b>7,178</b>

SOURCE: FAO, 1991.

### 6.3.2 Artisanal Fishermen

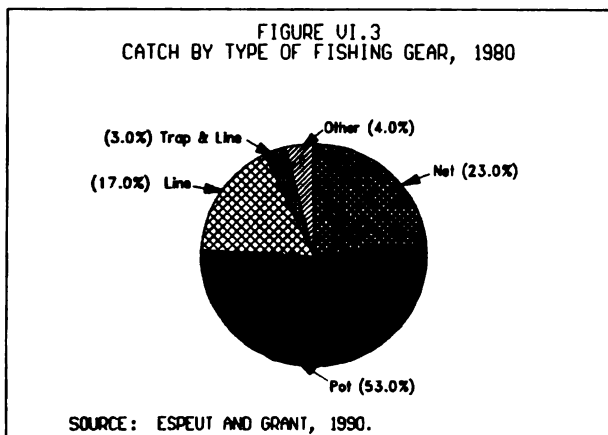
In 1992 there were about 16,000 artisanal fishermen in Jamaica, 75% of which were small scale fishermen. The majority of these operated at or near subsistence levels with an annual income below the poverty line. Precise data on the income earned by small fishermen is not available. However, according to a recent study, in 1980 the average annual value of catch per non-mechanized fishing boat was J\$ 6,174<sup>64</sup>. Assuming that each boat was operated by two men who received equal shares of the catch and that the resources earned were used to feed a family of five, it results in an annual income of J\$ 617 which is smaller than the corresponding poverty line income (J\$ 914)<sup>65</sup>.

Fishing is essentially conducted as a full-time occupation by most fishermen<sup>66</sup>. Various individuals, however, complement their income by engaging in small scale commerce, wage employment (life guards, watchman, laborers, etc.) and agriculture. Therefore, in certain cases, the above estimate might represent a lower bound of the annual income earned.

Small scale fishermen are poor primarily because: (i) they lack the necessary resources to invest in their operations; (ii) the country's coastal fishery is over-harvested and not properly managed; (iii) various fishing beaches have poor facilities; (iv) they lack geographic and occupational mobility due to low formal education, lack of capital, advanced age and remoteness of the fishing villages; and (v) of low effectiveness of fishery extension service and a lack of improved fishing technologies for artisanal fishery.

Fishing technology of small scale fishermen has not changed much since the early 19th Century. The use of canoes, fishing lines, fishpots and nets has persisted. The principal item of fishing equipment used

in artisanal fisheries is the Z-type antillean fishpot, a fish trap using a skeleton of mangrove, wild coffee, sweetwood or lancewood sticks covered with meshwire of 4.13 cm maximum aperture<sup>67</sup>. Other common fishing gears are gill nets, seine nets, hook-and-line and spearguns. The greatest volume of fish caught is trapped in fishpots (Figure VI.3). Among other factors, this is because fishermen's efforts to maximize their income through multi-occupations lead them to rely heavily on more productive, less time-consuming fishing methods.



In 1980 the fishing fleet comprised a total of 3,760 boats, 46% of which were non-mechanized. In contrast to operators of mechanized boats, fishermen using non-mechanized boats got a higher percentage of their catch from line fishing (23% in comparison to 15%) and a lower proportion from pot fishing (49% vis-a-vis 54%). Moreover, in that same year, the gross value of catch per landing was J\$ 60 for non-mechanized boats compared to J\$ 158 for mechanized.

Very little is known about the gender aspects of artisanal fishing in Jamaica. Nevertheless, it seems that with the exception of the marketing of fish, fishing has been a male dominated field. The general practice is for fishermen, after landing, to delegate the responsibility of the

marketing of their catch to their female partners or sell them in bulk to other women who are fish vendors. In addition to this aspect, it has been argued that according to cursory observation, the involvement of women as boat-owners is quite significant<sup>68</sup>.

Similar to what it is observed in other sectors of the economy, the cooperative system does not have a strong presence among artisanal fishermen. Presently there are six fishermen's cooperatives operating equipment stores. These are situated at White House (Westmoreland), Hope Bay (Portland), Great Bay and Calabash Bay (St. Elizabeth), Kingston, and Old Harbor (St. Catherine).

### 6.3.3 Households Headed by Women

About 40% of Jamaican Households are headed by women. This group is considered to be the most vulnerable among the rural poverty groups. Within this group are also pregnant and lactating mothers, women farmers, wage laborers, unemployed and those who are retired.

Employment data for 1990 and 1991 shows that the proportion of female household heads in the total labor force and the female labor force remained unchanged (16% and 37%, respectively). However, in 1991, the number of employed female household heads increased by almost 2%, slightly higher than the increase in the total labor force.

The socio-economic status of women in general, and of those that head households in particular, is indicative of the factors contributing to their poverty situation. In general, the labor status of women in the country has always been characterized as being the largest group of unemployed, underemployed and with a higher incidence of unpaid labor than men. The key factors affecting women who head households and that contribute to their poverty situation include: (i) low level of education, low

skills and inadequate training; (ii) inadequate job opportunities; (iii) unequal access to resources such as land and capital; and (iv) a time constraint which affects generation of adequate income as well as discharging household responsibilities.

Preliminary data in 1990 on female-headed households indicate the following<sup>69</sup>: (i) female-headed households are more common in urban area (46%) compared to rural areas (39%); (ii) households headed by women are on average larger (4.4 persons) than male-headed households (3.9 persons); (iii) female-headed households have more children; (iv) they are three times as likely to be divorced, and twice as likely to be divorced as well as never married; (v) in the labor force, about 50% of female heads work, while they are 2.5 times more likely to be unemployed and 3 times more likely to be out of the labor force; (vi) female-headed households have more dependents per worker (2.0) compared to male-headed households (1.4); and, (vii) the per capita consumption levels of male-headed households are 25% higher than that of female.

In the agricultural sector, several factors affect the welfare status of women. In general, women operate smaller plots than men. Data from the 1978/79 Agricultural Census shows that the average plot size operated by women was less than 50% of that of men. The typical female farmer is between 35 - 45 years, and she is less likely to afford the use of improved technology and is dependent more on hired labor, especially for the more arduous tasks of farming. Besides their limited access to land, women also have limited access to capital, particularly credit.

Data on women's income are not available but it is generally believed that women earn less than men, particularly in

certain occupations in the service and informal sectors. In the agricultural sector, women who are small farmers and heads of households also live below the poverty line. Moreover, their income level is lower than that of male small farmers. It is likely that women farmers earn less than men because of the smaller plot size cultivated, limited access to capital and the time constraint (time allocation between farming and household activities). Women laborers are often paid the same wage rates as men for the same type of work, but men often earn more for task work because they are either more efficient at performing this or they are able to allocate more time to providing labor services.

#### 6.3.4 Unskilled Wage Laborers

The 1990 Labor Force Survey shows that 94,700 persons or 11% of the employed labor force were unskilled, i.e., engaged in "Unskilled Manual and General Occupations". Assuming that the ratio of employed persons in Kingston and St. Andrew to other parishes is similar to the ratio for this category of workers, it implies that 81% of the unskilled workers were located in rural parishes. Information on the distribution of unskilled labor by sub-sectors is not available, but it is estimated that about one-third are engaged as field laborers in the sugar industry.

Most unskilled laborers are paid the minimum wage rate. However, unskilled laborers in most agricultural activities obtain slightly higher wages than the prevailing minimum wage rate. Those that earn the minimum wage are considered to live below the poverty line. Boyd (1988) has shown that the minimum wage during the first half of the 1980s was less than 50% the minimum income required to sustain an average five-person household (Table VI.7). Factors that

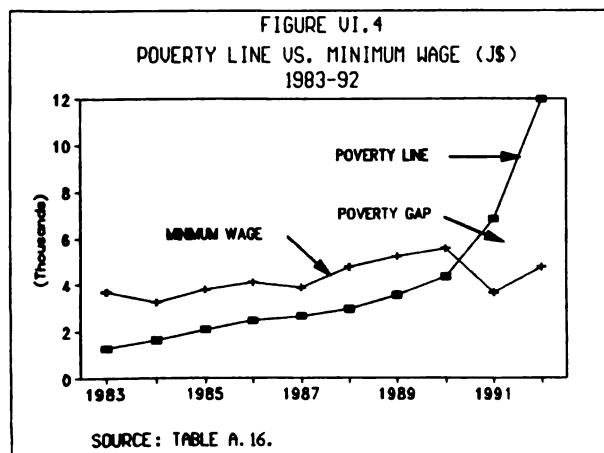
TABLE VI.7  
MINISTRY OF HEALTH: LEAST-COST BASKET  
(J\$ FOR A 5-PERSON HOUSEHOLD/WEEK)

PERIOD	COST	MINIMUM WAGE	% OF COST
SEPTEMBER 1983	65.31	30.00	45.9
DECEMBER 1983	77.00	30.00	39.0
AUGUST 1984	101.60	40.00	39.4
JULY 1985	128.40	52.00	40.5
SEPTEMBER 1988	286.00	92.00	32.2

SOURCE: BOYD, 1988.

contribute to low income of unskilled wage labor include, by definition, the lack of skills and inadequacy of training facilities.

Comparisons of the minimum wage with the poverty line suggests that for a single person, the real purchasing power of the minimum wage was larger than the least-cost expenditure required to stay above the poverty line for most years during the 1980s (Figure VI.4). However, for households with a single income provider earning the minimum wage rate, a large number would fall below the poverty line. High inflation in recent years have outpaced adjustments in the minimum wage rate; in 1991 and 1992 the minimum wage corresponded only to 54% and 40%, respectively, of the poverty line. This indicates that the poverty gap for unskilled wage labors more than doubled in 1992 compared to 1991.



### 6.3.5 Unemployed Youth

A large cadre of the rural labor force is comprised of unemployed young people, especially women, with little or no training which would equip them for employment in the modern sectors of the economy. Declining rural employment opportunities, lack of training facilities in rural areas together with the absence of adequate public programs contribute to this group's low socio-economic status, and makes it one of the most vulnerable groups of rural poor in Jamaica, with limited resources and few opportunities.

According to the January 1990 Labour Force Survey (LFS), 15.3% of the labor force was unemployed. This rate varied by parish and was higher for young people (14-24 years) and for women. Of the total unemployed labor force, 26% was in the 14-19 year age group and 33% in the 20-24 age group. The rates were higher among young women with 56% of unemployed women being below 25 years. Within the group of unemployed women, 55% were in the 14-19 age group and 38% in the 20-24 age group. Furthermore, only 47% of the unemployed were classified as actively seeking jobs; of these 62% were in the 14-24 age group with the majority being women (64%). The survey also revealed that 77% of the young women seeking jobs had never worked and nearly all of them had no skill training or any recognized school-leaving certificate.

By parish, the 1990 LFS shows that the employment pattern was unevenly distributed. The unemployment rate for Kingston and St. Andrew approximated 15% while that of the other parishes as a group was 16.2%. There were significant variations also by parish and sex. The most acute unemployment among young women has been observed in St. Thomas, Portland and Clarendon.

Employment data for 1991 indicates that among the four major demographic groups in the labor market, the employment level for females under 25 years of age experienced the highest employment increase (4.1%), largely due to the expansion in the service sectors (finance, insurance, business, wholesale and restaurant) which are large employers of females. In contrast, there was a slight decline in the employment of young men.

### 6.3.6 The Retired and Aged

In 1991, about 10% of Jamaica's population was aged, i.e., 60 years and over. A profile of the aged group indicates that 46% were males, 54% were females, and nearly 65% of this group lived in rural areas. Although the retirement age is 65 years for men and 60 for women, many persons especially males, remain active beyond the retirement age as is normally the case in agriculture. Available data from a 1989-92 survey of the elderly shows that 88% were physically active (i.e., not dependent on anyone) and only 2% were severely disabled<sup>70</sup>.

The National Insurance Scheme (NIS), a public contributory pension scheme, provides social security for all Jamaican employees, as well as pensions to the elderly, invalids and widows. In 1991, the aged was the largest group of people receiving pension benefits from the NIS. In that year, the pension for the aged increased from J\$40 (US\$3.30) to J\$60 (US\$4.95) per week which corresponded to an income level below the poverty line. Thus, persons who rely exclusively on the NIS pension for survival comprise one of the poorest groups in the society.

The 1989-92 survey of the elderly also shows that the majority (65%) depend on their families for financial support and only about one-third are recipients of NIS benefits. As the economy declines, incomes decrease and families experience severe

financial constraints, there is additional pressure on the elderly. Those not receiving any social benefits and not working are further disadvantaged. In addition, those who are forced into retirement through structural adjustment programs are sometimes severely affected psychologically and are more vulnerable to chronic diseases and illnesses, because of the loss of self esteem, loss of status and feelings of worthlessness<sup>71</sup>.

Women in this group are at greater poverty risk compared to their male counterparts. Available data suggests that if a person is elderly and over 75 years, there is greater likelihood that the individual is a female (because of the gender ratio), is single and is at greater risk. Because women have less education in their formal schooling years, their use of health services particularly preventative ones places them in a disadvantageous position in their later years. When factors such as lower incomes, child bearing, household responsibilities and lower food consumption are added, women who are aged become very vulnerable to ill health and poverty. Survey data in 1991 shows that 66% of elderly women are single compared to only 20% of elderly men, which also indicates the vulnerability of aged women in the society.

### 6.4 Geographic Location of the Rural Poor

In general, the rural poor are scattered geographically throughout the parishes of Jamaica including the parish of Kingston and St. Andrew<sup>72</sup>. Data on the exact number of each group by parish/area is unavailable and various proxies are used to map the poverty groups across the country.

Of the six groups of rural poor identified above, small hillside farmers (including women farmers) and artisanal fishermen are concentrated in specific areas of the country (Figure VI.5). Small hillside farmers are located mainly at higher



elevations in the watershed areas - in the northern parts of the parishes of St. Andrew, Manchester, Westmoreland, St. Elizabeth and St. Catherine, and in the southern areas of Portland, St. Ann, Trelawny, Hanover and St. James<sup>73</sup>.

Artisanal fishermen are concentrated in villages located along both the north and south coasts of Jamaica, with the latter having a larger number of villages (Figure VI.5). Those areas that have larger numbers of this group of the rural poor include: Lucea Harbour, Paradise and Sandy Bay in Hanover; Rio Bueno in Trelawny/St. Ann; Runaway Bay and St. Anns Bay in St. Ann; White Beach and Pagee in St. Mary; Nine Miles and Yallahs in St. Thomas; Paradise Street and Port Royal In St. Andrew; Old Harbour Bay in St. Catherine; Rocky Point in Clarendon; Alligator Pond, Great Bay, Parotee and Scotts Cove in St. Elizabeth; and Hope Wharf, St. Mary, St. Ann, Cove and Whitehouse in Westmoreland.

With regard to the other groups of rural poor, they are more or less scattered across the country. The unavailability of data makes it difficult to indicate their precise geographic location. However, using information on the welfare programs and unemployment data, the larger groups of poor seem to be in Kingston and St. Andrew (KSA), St. Catherine, Clarendon and St. Ann<sup>74</sup>. For example, data for March 1993 of the food stamp program indicates that the KSA area had the highest number of beneficiaries (18%), followed by St. Catherine (13%), Clarendon (11%) and St. Ann (8%). For beneficiaries of the poor relief program, KSA accounted for the highest proportion (16%), followed by Clarendon (12%), St. Catherine (9%) and St. Ann (8%). For distribution of unemployed youths, assuming that the distribution of this group is similar to that of the unemployed labor force across the country in 1991, then St.

Andrew had the largest number of unemployed youth (16%), followed by St. Catherine (14%) and Clarendon (13%).

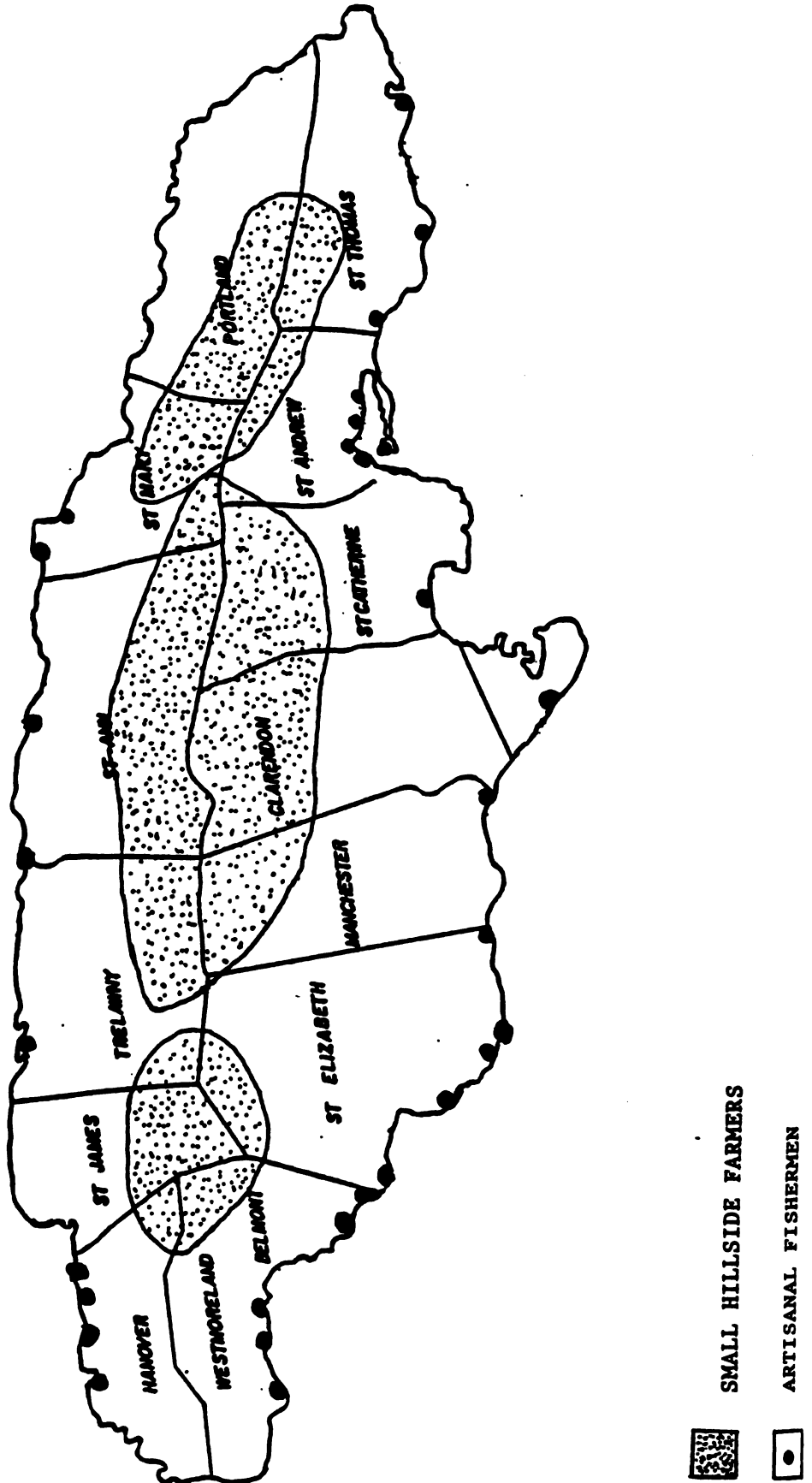
## 6.5 Recent Evolution of Poverty

The evolution of poverty in the last decade suggests that it has increased relative to earlier periods. There are two main indications that reflect this increase: (i) the decline in the average welfare level as indicated by the reduction in both per capita real income and real wages, resulting in a large segment of the population living below the poverty line; and (ii) more attention is being given to this problem as evidenced by the SLC surveys and the development of additional programs to alleviate poverty by both the government and non-government organizations (see Section 6.6).

Jamaica's per capita real income declined by an average of 0.2% per year in the 1980-89 period, indicating that the country's welfare level deteriorated relative to that of previous years. While GDP increased for some years during that period, a larger proportion of it was allocated abroad. In 1977 about 3.3% of GDP was allocated to foreigners (for debt servicing, etc.). This increased marginally to 3.5% in 1983, but had more than doubled (11.1%) by 1989. Furthermore, national income was redistributed in favor of capital and less so for labor. Between 1977 and 1989, capital's share of national income increased from 31% to 34% while labor's share declined from 69% to 66%. Consumption expenditure had also declined, from 89% of GDP in 1977 to 80% in 1989.

Studies have shown that the level of poverty remained high (70% in rural areas and 53% for all Jamaica), and a larger number of persons have become ultra-poor (those who cannot meet 80% of

FIGURE VI.5  
GEOGRAPHIC LOCATION OF POOR SMALL HILLSIDE  
FARMERS AND ARTISANAL FISHERMEN



recommended calorie requirements and have a budget of 125% above the poverty line)<sup>75</sup>. The studies also show that between 1977 and 1989, the percent of individuals earning the poverty line income or less increased from 66.4% to 77% (Table VI.8). For the same period, those earning 75% or less than the poverty line income increased from 51% to 69%.

TABLE VI.8  
PROPORTION OF THE POPULATION  
AND EMPLOYED PERSONS EARNING  
LESS THAN THE POVERTY LINE  
INCOME, 1977 AND 1989

TOTAL LABOR FORCE	1977	1989
% OF POPULATION EARNING LESS THAN POVERTY LINE INCOME	32.1%	36.0%
% OF POPULATION EARNING LESS THAN 76% OF POVERTY LINE INCOME	27.1%	33.2
% OF EMPLOYED EARNING LESS THAN POVERTY LINE INCOME	66.4%	76.5
% OF EMPLOYED AND EARNING LESS THAN 76% OF POVERTY LINE INCOME	51.0%	68.6%

SOURCE: TAYLOR, 1993.

The increase in poverty is also reflected by an expansion in the number of household heads earning below the poverty line income between 1977 and 1989 (Table VI.9). In the lower income group, the proportion of household heads earning less than the poverty line income increased from almost 65% to 73%. With regard to gender differences, there was a higher incidence of poverty among female-headed households in both periods. In 1977, the proportion of male and female household heads earning below the poverty line were 60% and 78% respectively; in 1989, these proportions had increased to 69% and 82% respectively.

At the sectoral level, the distribution of earnings between 1977 and 1989 shows that poverty had increased among lower income workers in nearly all sectors of the

TABLE VI.9  
DISTRIBUTION OF RELATIVE EARNINGS OF EMPLOYED  
76% OF THE HOUSEHOLD HEADS, 1977 AND 1989  
INCOME BY SECTOR, 1977 & 1989

RATIO OF INDIVIDUAL EARNINGS TO POVERTY LINE INCOME	1977 (%)			1989 (%)		
	ALL HEADS	MALE	FEM.	ALL HEADS	MALE	FEM.
0.5 OR LESS	36.1	34.6	39.9	44.3	39.2	53.6
0.51 - 0.75	14.3	11.0	22.2	20.1	19.8	20.7
0.76 - 1.00	14.5	14.1	15.6	9.0	9.5	8.0
1.01 - 1.25	4.7	5.1	3.6	8.9	10.5	6.2
1.26 - 2.00	15.4	18.6	7.7	11.2	12.7	8.5
2.01 - 3.00	7.6	8.1	6.3	3.5	4.4	2.0
OVER 3.00	7.4	8.4	4.7	2.9	3.9	1.1
TOTAL (%)	100.0	100.0	100.0	100.0	100.0	100.0

NOTE: FEM. = FEMALE

SOURCE: WITTER, 1989 AND ANDERSON, 1989.

economy (Table VI.10). The highest incidence of poverty was related to small farm agriculture and wage labor employed in agriculture. The data for the period also shows that substantial increases in poverty occurred in the secondary sector (wholesale and retail trade, manufacturing, etc.) and the formal sector (government and social services).

TABLE VI.10  
PROPORTION OF WORKERS  
EARNING LESS THAN  
REQUIRED FAMILY

SECTOR	1977 (%)	1989 (%)
GOVERNMENT AND SOCIAL SERVICES	14.8	28.4
PRIMARY SECTOR	12.6	20.0
SECONDARY SECTOR	21.4	58.6
INFORMAL SECTOR	66.1	76.5
PEASANT AGRICULTURE	82.9	91.2
WAGE AGRICULTURE	54.6	84.3

SOURCE: TAYLOR, 1993.

Several factors<sup>76</sup> have contributed to an increase in poverty in the last decade, of which the Structural Adjustment Program (SAP) was one of the most important. The other factors include: (i) low productivity in agriculture; (ii) increased fragmentation of land, under-utilization and degradation of land in watershed areas; (iii) low technology utilization among domestic food crop farmers; (iv) closure of estates on the plains where a significant number of

the rural population was employed; (v) depletion of fishery resources; (vi) decline in support services in agriculture and social services in rural areas; (vii) proximity to urban areas which attract young and able bodied persons, leaving behind the elderly and children, and (viii) lack of resources and remoteness of some hillside villages.

Since 1980, the country has been engaged in a process of structural adjustment. While the country's economic performance improved in some years the combined effects of policies under the SAP (deregulation, trade liberalization, devaluation, reduction of the fiscal deficit, tight monetary policy and divestment) adversely affected the level of real income, the income distribution, prices, agricultural production and the poverty situation in the country.

The essence of the structural adjustment process was to alter the system of incentives throughout the economy, with the intention that activities that use resources most efficiently would be the most profitable and would expand, while inefficient ones would be eliminated and resources released. However, small farmers in general, and those that produce for the domestic market in particular, were adversely affected by the policy changes. The incentive structure contained a strong export bias and conversely a bias against output for the domestic market. Also, the realignment of the currency and deregulation of prices for export crops increased significantly the returns to export agriculture.

Indications of the impacts of the SAP were first seen in 1981 when the government adjusted its trade policy to remove import restrictions on several imported food which could be produced in Jamaica. This resulted in food imports increasing by nearly 40% in 1981 followed by a 12% decline in domestic agricultural production in 1982, as farmers were unable

to compete with cheaper imports<sup>77</sup>. Between 1984 and 1990, farmgate prices for export crops increased between 700% and 1000% (1000% for bananas) compared to an increase of an average of only 200% for domestic crops. Furthermore, trade liberalization affected these farmers through a reduction and/or removal of protection against competing imports of food such as vegetables, potatoes, etc., all of which are produced by small farmers. Not only did the real incomes of small farmers decline, but the policies reduced their ability to compete with cheaper food imports.

With regard to food subsidies, these existed prior to 1984 and they applied to certain basic food items. Subsidies had also existed on other commodities such as animal feed, herbicides/pesticides, medicines and textbooks. As part of the structural adjustment program, the subsidies and price controls were eliminated on a phased basis. The process of phasing out the subsidies on basic food items and removing price controls began in 1984 and continued until 1992. By 1991, the basic food subsidies were eliminated and this was followed by the removal of input and other output subsidies in 1992.

Real wages have also declined for many categories of workers since 1980 in both the public and private sectors, mainly because of the policy of imposing limits on wage adjustments which, in some years, were far below the increases in the price level. Thus, although this policy would have contributed to making productive activities more profitable and competitive internationally, its consequence was a worsening of the income distribution. Added to the decline in real wages was the adverse impact of the government's austerity measures. Reduced spending on social services by the Government contributed to a deterioration in the quality of life in general, and in the rural areas more acutely. These reductions included the elimination of the generalized food subsidies, reduced public

employment, and lower expenditures on health, education infrastructure and other welfare.

Like the education sector, the health sector has been affected since 1985 by reduced government expenditures and the high attrition rate of personnel. As a result, the sector has experienced various problems such as a deterioration in the delivery of health care, closure of hospital wards and/or amalgamation of wards that were unmanned by nursing personnel, reduction in the numbers of elective surgery, unattended deliveries, high incidence of absenteeism and low morale and poor quality of nursing care.

With regard to the social indicators of poverty, Jamaica's position has worsened in a few areas but improved in others. The daily calorie supply per person declined from 2,678 in 1975 to 2,572 in 1989, while the daily protein supply per person declined from 70 grams to 58 grams in the same period. However, the infant mortality rate was reduced from 49 per thousand in 1965 to 16 in 1989. In the same period, adult literacy increased from 82 to 86 and the proportion of primary enrollment increased from 82% to 90%.

## 6.6 Government's Efforts to Alleviate Poverty

There have been a number of public programs to address poverty in Jamaica. In keeping consistent with a market-oriented approach to economic management, poverty alleviation has taken two main forms: (i) efforts to provide more resources for production (land, materials, credit and extension services); and (ii) targeted food support for the most vulnerable. Added to these are the regular programs such as school feeding, provision of pensions and various public assistance activities.

### 6.6.1 Land Reform

The major land reform program of the Government began in the 1970s to address the problems of inequitable land distribution, to increase access to land and to make more productive use of idle land. Through the Project Land Lease Program, public lands were distributed to farmers, landless and other persons interested in agriculture. However, five-year leases dominated the program and the lack of tenure security inhibited small farmers from investing in agriculture because of inaccessible credit. Other efforts included: the Pioneer Farms which started in 1977 as farmers cooperatives; the Sugar Workers Cooperatives where workers grew sugar cane on land leased for 49 years; and, the integrated Rural Development Program which aimed at developing small farmer settlements with assistance for housing, credit and soil conservation. Despite these efforts, however, the land ownership structure remained basically unchanged at the end of the 1970s and there was a decline in the area under agriculture.

In the 1980s, land reform was characterized by two main forms: (i) the conversion of government-owned land that were leased to small farmers into freehold land; and (ii) the lease of large tracts of government-owned lands for the production of export crops and commercial farming. By 1987, about 14,000 ha. were sold to small farmers; a land titling project was undertaken in 1989 to accelerate the issuance of land titles to small farmers. In addition, small farmers were encouraged to operate on an integrated basis with large commercial farms which utilized more advanced technologies and had better arrangements for marketing and finance. Credit facilities and extension services were strengthened with the creation of an Agricultural Credit Bank (ACB) and the formation of RADA. However, the effectiveness of these agencies were

attenuated by a shift to market-based interest rates in the first instance, and by acute shortages of qualified personnel and financial resources in the case of RADA.

### 6.6.2 Human Resource Development Program

In 1988, the government embarked on a Social Well Being Program (SWBP) which emphasized increased support in the areas of education, health, water and sewerage and welfare. In 1989, continuing with the same objectives, the SWBP was changed to the Human Resource Development Program (HRDP). The HRDP is the largest public program that is directed towards poverty alleviation. This program comprises five main smaller programs for various social sectors, and each contain a few sub-programs: (i) General Welfare - Food Aid Program (FAP); (ii) Education - there are several with the most important being the Program for the Advancement of Childhood Education (PACE); (iii) Health; (iv) Housing - the most important is the National Shelter Sector Strategy (NSSS); and (v) Water and Sewerage.

Since its inception, the importance of the HRDP has become more critical as the government accelerated the structural adjustment process. Total budgetary allocation for this program has more than doubled in recent years, from J\$ 101 million (0.4% of GDP) in 1990-91 to J\$ 510 million (1.3% of GDP) in 1991-92, and to J\$ 550 million (1.1% of GDP) in 1992-93.

**Food Aid Program.** In order to reduce the adverse impacts of the structural adjustment program on the vulnerable groups in the society, the Government initiated some support activities, among them a Food Aid Program (FAP). It was designed to assist those groups such as infants, school children, pregnant and lactating women, the elderly and the indigent. The FAP comprised the Food

Stamp Program (FSP), the General Food Subsidy and the School Feeding Program.

The FSP was established in May 1984 with the objective of establishing a compensatory mechanism to protect vulnerable groups following the beginning of the removal of general food subsidies. The program was targeted to two main groups considered to be at nutritional risk: (i) pregnant and lactating women and children under five years of age; and (ii) the poor, elderly or handicapped, whose eligibility was determined by means testing. All recipients of Poor Relief and public assistance automatically receive food stamps. Indigent households with incomes of less than J\$ 2,600/year were also eligible. Food stamps were used to purchase rice, cornmeal and powdered skimmed milk at any retail outlet.

In 1988 benefits of the FSP were distributed as follows: 39% for children under five, 12% for pregnant and lactating women, 33% for the elderly, and 6% for the desperately poor (those with incomes of less than US\$ 473.59/annum). About 10% of the FSP recipients were not included in the above categories, which indicated program leakage of about 35,000 beneficiaries.

In 1989, the primary health care system stopped screening the maternal/child group for Food Stamps, so there were no new recipients from this group during that year. Since March, 1989 the criterion for eligibility has been changed so that indigent families (earning less than US\$452.17/year) with an able-bodied head were not eligible. In March 1990, re-certification of beneficiaries under the FSP was done in order to limit the program to only those who have no alternative means of support than state assistance. As a result, at the end of 1990, recipients of food stamps were reduced to 207,517 persons, i.e. 47% of those participating in 1989.

In September 1990, there were further changes for eligibility to include two new low-income groups: the "single-person household" earning less than US\$521.74/year and the "family plan" for households with two or more persons earning less than US\$1,252.17/year. The indigent single-person householder was entitled to stamps valued at J\$30.00 (US\$4.18 in 1990) monthly, while the indigent "family" was entitled to J\$60.00 (US\$8.36) monthly. In addition, there was a 50% increase in the value of food stamps for the other categories of beneficiaries and additional commodities including sugar, flour, meats could be purchased.

Prior to those changes, there were certain shortcomings in the FSP including the low purchasing power of the stamps, restrictions on the food items that could be purchased, neglect of low income households which did not fall within the current (1989) target groups and the failure to serve the rural parishes adequately. Based on 1989 prices, the poverty line for urban Jamaica was established at US\$674.78/year, while for rural areas it was US\$620.87/year. Given the income eligibility of less than US\$452.17/year, the poverty line implied the existence of a food gap. To close that gap, it was recommended that: (i) the Government institute a family plan to supplement the present provisions of individual allotments to high risk groups; (ii) the food stamp basket should include flour and dark sugar; and (iii) children should remain in the FSP until age six instead of age five to ensure coverage until they are enrolled in schools.

In September 1991, the monthly benefits for the indigent single person increased from J\$30 (US\$4.18) to J\$60 (US\$4.95), while those of the indigent "family" were raised from J\$60.00 (US\$8.36) to J\$105 (US\$8.66). For other categories (pregnant women, lactating

mothers and children) they increased from J\$30 (US\$2.48) to J\$45.00 (US\$3.71). However, due to the devaluation of the Jamaica dollar between 1990 and 1993, these increases have made all the groups worse off (Table VI.11). Furthermore, the 18% increase in the Food and Drink price index in 1992 compared to 55% in 1991 and 22% in 1990 meant that the purchasing power of all groups declined. Those in the rural areas and those in the quintile with an average total expenditure (consumption and non-consumption) of US\$ 613.70/year benefitted the most. The poorest quintile group (total expenditure of US\$ 237.54/year) had its share reduced from 36.1% to 34.5%, while the wealthiest had an increase in the distribution of food stamp receipts.

TABLE VI.11  
MONTHLY VALUE OF FOOD STAMPS  
1990, 1991 AND 1993 (US\$)

GROUP	1990	1991	MARCH 1993
SINGLE PERSON	4.18	4.95	2.73
FAMILY	8.36	8.66	4.77
OTHERS*	4.18	3.71	2.05

\* PREGNANT AND LACTATING WOMEN  
AND CHILDREN 0 - 6 YEARS.  
SOURCE: MINISTRY OF LABOR,  
WELFARE & SPORT.

Today, the FSP covers the same six groups of people: (i) pregnant women; (ii) lactating mothers; (iii) children 0-5 years; (iv) elderly poor and handicapped; (v) single member household earning less than J\$3,000 per year; and (vi) family plan, i.e., families earning less than J\$7,200 per year. In addition to the increase in the value of food stamps, the number of recipients has increased in 1993 compared to previous years. By March 1993, 384,936 persons were receiving food stamps vis-a-vis 212,962 in 1991 and 207,517 in 1990 (Table A.16). In terms of the distribution of food stamps, the parishes with the largest group of recipients were Kingston and St. Andrew (18%), St. Catherine (13%)

and Clarendon (11%). Children are the largest group in the program (48%), followed by those in the family plan (27%) and single-member households (13%).

The other component of the FAP is the School Feeding Program (SFP). Two large school feeding programs exist in Jamaica, the traditional version of the SFP and the Nutribun program. The first of these programs was designed to provide food donations and cash grants for lunch cooked on the school premises. In 1984, the Nutribun program, an industrialized version of the school lunch program was created. It distributed a fortified wheat flour product and a half pint of milk to participating schools daily. The advantage of the Nutribun program was its lower cost and the ease with which it could distribute milk to children. Rural areas were not adequately covered in the distribution because of inadequate refrigeration facilities for the milk.

According to the 1991 SLC, the SFP had the widest coverage in primary and all-age schools (Table VI.12). The least coverage of children were in secondary high (31%) and comprehensive high schools (35%). Children in the rural areas benefitted the most from the program relative to those in the KMA and in the "other towns" category. In 1991, 60% of the children in rural areas received meals compared to 50% in the KMA and 56% in "other towns". However, in contrast to 1990 all regions experienced a reduction in the percentage of children receiving meals in 1991.

In 1990 and 1991, the Nutribun program was affected by several problems: significant price increases for the commodities, shortages of dried skimmed milk, shortage of packaging materials, inadequate transportation and financial constraints. Since 1990, the program has been severely affected also by the discontinuation of USAID's support

TABLE VI.12  
PERCENTAGE CHILDREN RECEIVING MEALS BY  
SCHOOL TYPE, QUINTILE & REGION, 1990-91

SCHOOL TYPE, QUINTILE AND REGION	PERCENT CHILDREN RECEIVING MEALS*		PERCENT CHILDREN RECEIVING NO MEALS	
	1990	1991	1990	1991
<b>SCHOOL TYPE:</b>				
PRIMARY	79.6	63.5	20.4	36.5
ALL AGE	77.2	66.2	22.8	33.2
NEW SECONDARY	55.1	39.9	44.9	60.1
COMPREHENSIVE HIGH	47.6	34.5	52.4	65.5
TECHNICAL HIGH	66.7	58.6	33.3	41.4
SECONDARY HIGH	49.5	31.1	50.5	68.9
<b>QUINTILE:</b>				
POOREST	68.8	62.8	31.2	37.2
WEALTHIEST	65.9	52.3	34.1	47.7
<b>REGION:</b>				
KMA	61.6	50.0	38.4	50.0
OTHER TOWNS	77.4	55.6	22.6	44.4
RURAL AREAS	73.7	60.3	26.3	39.7
ALL JAMAICA	N/A	56.9	N/A	43.1

\* CHILDREN RECEIVING 'TRADITIONAL' MEAL  
OR NUTRIBUN OR BOTH.  
SOURCE: SLC 1990, 1991.

in the provision of commodities such as flour.

The FAP has had much support from international agencies such as the Canadian International Development Agency (CIDA), USAID and the World Food Program (WFP). For several years in the 1980s, Jamaica benefitted from food assistance from CIDA. Prior to 1992, the JCTC was a recipient of sardines and salted fish, and additional food aid was granted by CIDA following the hurricane. In 1991, CIDA's assistance declined by almost 50%. This was further reduced in 1992 as the Canadian Government shifted its support to needy African countries.

The USAID provided assistance through the PL480 program, in which a long term concessionary loan on very favorable terms was given to purchase wheat, corn, flour and brown rice. Under the PL480 Title I Agreement, the supply of basic agricultural commodities and food products was US\$ 37.4 million in 1990 and US\$ 40 million in 1991. Also, under the PL480 Title II Agreement, the Jamaica Agricultural



Development Foundation (JADF) received about US\$ 2.6 million in 1991 from the sale of a donation of 30,298 mt of corn. This money was utilized for operational expenses and for loans to the agricultural sector. The WFP's assistance is mainly to Jamaica's Food Aid Program. In 1991, the total WFP assistance was US\$ 2.1 million for the School Feeding Program, approximately US\$ 1 million to the Food Stamp Program and US\$ 0.3 million to the HEART Program.

**Program for the Advancement of Childhood Education (PACE).** The government's social program has also targeted the education sector to address the many problems affecting it including: overcrowding in the primary schools, shortage of text books and instructional materials, absence of a common appropriate curriculum, inadequacy of in-service teacher training, and low and irregular attendance. In view of some of these problems the Program for the Advancement of Childhood Education was established in 1987.

Under the PACE, the government subsidized the salaries of basic school teachers so as to attract people with higher academic qualification to the profession, and also to motivate those who were already employed to improve their academic qualifications. Subsidies were also allocated to improve the infrastructure (buildings, furniture and equipment), to purchase software needed for developing teaching aids, and to establish "demonstration schools" where teachers from basic/infant schools could see innovative practices in action. Between 1990 and 1991, 124 schools were upgraded and over 3,000 teachers had participated in in-service training workshops. In addition to the creation of PACE, the Government increased its recurrent expenditure on education programs in 1990/91 (46%) and in 1991/1992 (22%). In both years, expenditures on pre-primary

education programs experienced the largest increases of the last ten years, 70% and 56%, respectively.

**National Shelter Sector Strategy (NSSS).** With an overall objective of providing safe and sanitary shelter for the population the Government established in 1987 a National Shelter Sector Strategy. Specifically the strategy seeks to: (i) create the market conditions, provide incentives and facilitate the flow of resources to augment the supply of shelter; (ii) make shelter programs more accessible to the poor by implementing an integrated program to facilitate low-cost solutions such as land and infrastructure on minimally and fully serviced sites, core (unfinished) houses and long and short term financing for families in the target group; and (iii) encourage greater private sector participation in the sector.

The NSSS has three components: (i) settlement upgrading in which the aim is to regularize squatter settlements on government-owned land, by providing infrastructure and titles to squatters (part of the land titling project); (ii) service sites in which rural areas will be developed jointly by the government and private developers for low income earners; and (iii) housing schemes which involve development of starter homes and partly completed houses mainly by the government through the National Housing Trust (NHT).

Under the NSSS, the number of houses completed increased by almost 70% between 1988 (2,576 units) and the end of 1991 (3,793 units). During this period, the rate of completion by the public sector averaged about 80% per year compared to about 20% by the private sector. In the settlement upgrading component, more than 5,000 titles have been issued and infrastructure has been placed in several areas in St. Catherine, Clarendon, St. James and St. Andrew. In 1992, the number of units planned in housing scheme component

was 16,000 but only 9,000 were initiated. Lack of finance has been the main constraint affecting the NSSS.

## VII. CONSTRAINTS TO SMALL FARM DEVELOPMENT

The Jamaican small farmer shares a number of characteristics with the traditional small farmer in developing countries, but there are also important differences. These differences are largely based on agro-ecological factors and the geographic location of small farms. As indicated in both Chapters III and VI, there are three groups of small farmers in Jamaica - those located on the plains and around the former plantations, those in the foothills and lower mountain elevations and those located at higher elevations in the watershed areas. Each group has its unique farming system based on economic, agro-ecologic and institutional factors, but there are similarities as well as differences in their constraints.

This chapter discusses the constraints to small farm development in Jamaica. These include, environmental, natural resource, institutional, economic and those constraints pertaining to women. It also examines the constraints and opportunities that various organizations offer to small farm development. While the focus of the chapter is on small farmers in general, it also discusses the constraints of the poor small hillside farmers.

### 7.1 Environmental Constraints

Jamaica's topographic structure poses a constraint to agricultural development. Approximately 80% of the land has been classified as having slopes between 15 - 30 degrees. These steep slopes make the production of annual crops difficult and soil conservation necessary if soil erosion is to be prevented. On the steeper slopes, only fruit trees or forest should be cultivated. Notwithstanding this constraint,

approximately 55% of the island's 1.1 million ha. of land is used for agriculture. The results, however, can be regarded as far less than satisfactory. In 1991, the agricultural sector contributed 5.2% to GDP and employed 26.8% of the labor force. Among other things, this indicates a very low productivity in the sector.

In addition to the above, the main environmental constraints include the following:

- (a) **Soil Erosion.** Jamaica has a severe problem of soil erosion on the hillsides. The basic reason is the growing of annual crops, particularly root and cash crops on steeply sloping lands. This is because increasing population density on the hillsides (where the majority of Jamaica's small farmers are concentrated) has led to intensive exploitation of the land. This problem has been exacerbated by the fact that the majority of the small farmers (59%) attach great priority to the growing of annual crops for food. Of the various forms of soil degradation - physical, chemical and biological - soil erosion in the hills is by far the most serious one.
- (b) **Soil Salinization.** On parts of the southern coastal plains there is a problem of saline intrusion. This takes place in areas which are leveled, have fertile alluvial soils and require irrigation. At present, the problem is mainly a matter of infusion of saline sea water into the ground water. However, the process of soil salinization has occurred in specific sites.
- (c) **Underground Water Pollution.** The pollution of the water table by agricultural chemicals is not a serious problem although there are reports of this in coffee growing areas in the Blue Mountains. The

Government is aware of the potential impact and is monitoring the situation.

- (d) **Deforestation.** Jamaica's natural forests are being diminished because of subsistence crop cultivation, pasture expansion, establishment of coffee and of timber for charcoal production and cutting of yamsticks. It is estimated that the island loses approximately 81 million tonnes of soil per annum as a result of deforestation. Moreover, this problem also contributes to the loss of valuable nutrients from the remaining soil and reduces its moisture retention properties. As a consequence, dry season surface flow in streams is reduced or eliminated, flash flood hazards are increased, river channels are blocked by debris and near shore marine life is destroyed by higher stream sedimentation.
- (e) **Environmental Management.** Despite numerous laws, there is no comprehensive environmental legislation in Jamaica. Although there are many statutes which contain environmental related provisions, specific guidelines are often lacking or there are major gaps in coverage. Ineffective and fragmented environmental legislation, together with the absence of regulations, has reduced the effectiveness of environmental management in Jamaica.
- (f) **Institutional Coordination.** There is a need for effective co-ordination between the Ministry of Agriculture, its related agencies (CIB, COIB and CIDCO) and the Ministry of Tourism and the Environment if satisfactory results are to be achieved. There is not much evidence that such coordination exists. In addition, all public agencies that deal with environmental issues are being seriously affected by inadequate

budgeting and by the inability to recruit and retain qualified staff.

The above environmental constraints have had detrimental consequences on crop yield, sedimentation of rivers and silting up of reservoirs. The problem is most severe in those watersheds which are most steeply sloping and settled, for example, the Rio Cobre, Rio Minho, and Upper Yallahs Watersheds. Unless urgent action is taken, the perspective for the upper watersheds in Jamaica would remain one of accelerating deterioration and loss of resources necessary for agricultural development.

## 7.2 Technical Constraints Related to Water Availability or Drainage

Agricultural production in Jamaica is greatly constrained by widespread dependence on rainfall and by a deficient irrigation system. The result is erratic production and unreliable supplies of products to the domestic market. Agricultural output is sometimes reduced by up to 30% due to poor weather conditions.

It is estimated that total irrigated area amounts to 36,100 ha<sup>78</sup>. However, due to the deterioration of intakes, wells and distribution systems, only 25,700 ha. are currently irrigated<sup>79</sup>. The operation of an efficient irrigation system in Jamaica has been constrained by a number of factors such as:

- (a) **Budgetary Allocation.** Inadequate budgetary allocation is one of the main problems affecting irrigation efficiency. This is compounded by the high cost of electricity to pump water and by the separation of a significant number of maintenance employees from their jobs. Because of the budgetary problem, irrigation systems continue to perform poorly. When they break down repairs are usually carried out utilizing capital rather than

recurrent funds, which reduces finance for new equipment. There is at least one well out of operation in each of the systems using ground water.

- (b) **Operation and Maintenance Support.** Public institutions responsible for system operation and maintenance may not have had sufficient technical background and experience to perform their duties properly.
- (c) **Water Loss.** Most of the irrigation systems suffer approximately 20% water loss, mainly due to silting and weed growth in the open canals. As a result, farmers complain that contract water is not received. Stealing of water is a serious problem which results in water wastage and damage to canal walls, control structures and turn-outs.
- (d) **Energy Supply.** A serious problem affecting the system utilizing groundwater is the numerous power cuts. Energy is very expensive yet unreliable. The power cuts interfere with well operation and subsequent delivery of water.
- (e) **Water Distribution and Salinity.** The continuous flow method for on-farm water delivery, is highly inefficient, in spite of being a simple method. Farmers have no incentive to learn the technology of handling water, and with little motivation to control water application, run-off losses can be large. Water flows regardless of rainfall is normally unrelated to soil moisture deficit. Although irrigation and drainage are integral parts of any water delivery system, drainage is generally ignored in all public irrigation systems. As a result, in some places (lower Clarendon Plains) over irrigation has led to a serious soil salinity problem due to high water table.

### 7.3 Constraints Related to Land Tenure System

The need for land reform or better rationalization of the land distribution system has been recognized by successive governments in Jamaica. Consequently, there has been a large number of settlement programs including land lease schemes; integrated rural development programs with settlement components; pioneer farms for landless youths; and more currently, land divestment programs. In spite of the efforts made, there are a number of constraints related to the land tenure system that limit small farm development. The more important among these are:

- (a) **Land Settlement Programs.** These programs have been criticized over the years, because of the basis on which land is distributed. Land is allocated for bonafide farmers in specific areas, and there are a number of procedures to ensure that this is achieved. In many instances, however, while the procedures appear to be followed, land is really distributed through political patronage. Many persons who receive land do not live in the parish where the land is located, are not bonafide farmers, and have no intention of cultivating it. Instead, the land is held for speculative purposes or to be passed on to heirs. This, of course, poses a serious constraint to agricultural development, since land is a limited resource. Moreover, sometimes bonafide farmers are given land under one political administration which is then removed by another when it takes office. This often creates great uncertainty and insecurity which poses a constraint to rural development.
- (b) **Land Titling.** During the 1929-78 period, 56,465 small farmers received land. Of these, however, less than half had received titles, because of: (i)

governments' failure to build the required infrastructure, which are the legal requirements by the Parish Councils to issue the titles; and (ii) inadequacy of staff and facilities at the Titles Office.

- (c) **Proof of Ownership.** There is a substantial number of farmers (20 to 35 %) who are unable to claim proof of ownership under either the Registration of Titles Act or the Facilities of Titles Act. This is so, mainly because of what is referred to as "Family Land". This is land which a farmer might leave to his children. Most of the children do not show any interest in the land, but should a sibling decide to invest on it he will face a serious legal problem. It is estimated that the majority of land cases which go through the courts are related to this matter.
- (d) **Rented or Leased Land.** It is common for a farmer to operate a number of parcels. Some of these he might own, others he might rent, lease or squat on. At the same time, he might rent some of his lands to other farmers. Where land is operated under a lease or rental arrangement it poses a constraint to development since these lands are usually used for the production of short term crops for which the land might not be suitable.
- (e) **Institutional Arrangements.** The institutional capability and coordination to deal with land issues are very weak. Often, there is a great deal of confusion between public sector institutions over their responsibility for executing a particular action. Legally, the Commissioner of Lands is a "Corporation Sole" but administratively, he reports to the Permanent Secretary of the Ministry. This creates problems related to coordination and supervision. In

addition, there is no institution which has all the necessary data. The Ministry has recognized some of the shortcomings and is committed to establishing a land information system, which will address some of them.

## 7.4 Constraints Related to Support Services and Agricultural Credit

### 7.4.1 Agricultural Research and Extension

The agricultural research system needs reorganization and requires clearly defined policies and priorities, as well as an appropriate institutional structure. At the moment, agricultural research is fragmented with a number of institutions and agencies involved, such as the Ministry of Agriculture's Research and Development Division, CARDI, UWI, SIRI, CIB, the Banana Board, COIB, and CGA.

The main constraints faced by the agricultural research service are:

- (a) **Budgeting.** The Research and Development Division of the Ministry of Agriculture is badly affected by inadequate budgeting. Therefore, limited research work is being done by the Division.
- (b) **Research Work.** The research policy and priority areas for investigation are not well defined. This, together with lack of human and financial resources, contribute to the inadequacy of current research work. With regard to small farmers, limited adaptive and farming systems research is being done<sup>80</sup>. Unless these constraints are addressed, the sector will continue to perform poorly and farming will remain unprofitable. Small farmers who operate on the hillsides will continue to have low productivity and to a life of poverty, in part because the

present research system has failed to develop appropriate technology for this group.

The agricultural extension service is provided by the Rural Agricultural Development Authority (RADA). This institution was established in 1989, and since then there have been mixed reactions to its role. The main constraints related to the service provided by RADA are:

- (a) **Institutional and Budgetary Constraints.** Questions have been raised about the appropriateness of establishing RADA as a separate Statutory Body. In addition, RADA has been severely affected by staff cuts, as a result of large budgetary reductions. As a consequence, RADA has had to develop a special strategy providing its services to a reduced number of farmers (20,000) in the main production areas. In addition, extension work is now being undertaken on a group basis rather than assisting individual farmers. While the problem of mobility has been improved somewhat, it still remains a serious constraint.
- (b) **Extension and Research Interaction.** There is a consensus that the existing extension service is not properly coordinated with the R&D programs to allow it to act effectively to benefit small farmers. In large part, this is due to the lack of research and development by MINAG.
- (c) **Staff Training and Training of Farmers.** The Ministry of Agriculture and RADA undertake training at two levels namely staff training and training of farmers. There are a large number of training opportunities available to staff at no cost to the government. However, after a staff member has been trained, he is not legally required to return to the institution that he

worked in previously, which contributes to the loss of trained persons. It is extremely difficult to retain the services of staff who have received specialized training. In relation to training of farmers, the program is seriously constrained by availability of funding, which limits the number of farmers who can receive training, the frequency with which such training can be held and also the content of the training programs.

#### 7.4.2 Marketing

The domestic marketing system has been generally inefficient, due largely to inadequate market intelligence, insufficient information dissemination and a poor distribution system. This has contributed in many cases to high post harvest losses, artificial gluts and shortages with corresponding fluctuation in prices. In addition to those factors the agricultural marketing system has faced the following constraints<sup>81</sup>:

- (a) **Marketing Organization.** The methods of interaction between buyer and seller continue to be essentially loose and disorganized. Farmers as well as wholesale buyers strongly perceived a need for greater access to market information and more efficient ways of buying and selling products.
- (b) **Marketing Infrastructure.** There is a clearly expressed need for improved marketing infrastructure including storage and transportation facilities. Formal and highly organized methods of identifying buyers and suppliers of fresh products are not well established. In addition to this, the experience of different groups with respect to public bodies such as the Agricultural Marketing Corporation (AMC) and the perception of the role of such bodies differ according to the group involved. Farmers, higglers<sup>82</sup>,

processors and institutions were generally ignorant of the role of the AMC.

### 7.4.3 Credit

The Agricultural Credit Bank (ACB) is the major institution involved in providing loans for agriculture. Some success has been achieved in improving the delivery of credit through the ACB system. However, experience of credit programs for small farmers indicates that their access to credit is frequently affected by their inability to meet collateral requirements; the stringent credit conditions; and a perception that payment schedules are too burdensome.

In addition to the above, small farm development, particularly the "non-hillside" farmers involved in monocrop cultivation and commercial farming, has been constrained by a relatively high interest rate for agricultural credit in recent years. The decision to link interest rates for agricultural loans with the treasury bill rate has contributed to substantial increases in the former. This interest rate regime has been blamed for the current low investment in the sector and has curtailed the development of new projects for funding by international donors.

### 7.5 Advantages and Problems of Centralization and Decentralization

The support services to farmers have not suffered much from centralization or decentralization, but rather from duplication and fragmentation. This is the case of both the research and extension services. With the exception of support services and marketing, centralization of other services is not a critical issue in Jamaica given the small size of the country. The more critical problem

relates to inadequacy of funding to provide services to farmers effectively.

**Advantages of Centralized Credit System.** The Government's policy is that agricultural credit should be disbursed by one organizational system and that this is the ACB/PCB network. The underlying reason for this orientation is that before the establishment of the ACB there were many different institutions disbursing credit. They had different policies, management systems and interest rates. This had a negative impact on the agricultural sector. The present system of a central development bank and a decentralized network of cooperative banks seems appropriate to ensure wide-spread coverage of farmers.

**Advantages of a Centralized Market System.** The marketing of domestic crops is decentralized and disorganized. There are many problems related to this system which results in artificial gluts, shortages and price distortions. It is widely believed that there should be a marketing agency operated by the private sector, which could bring planning, organization, and management to the marketing of these crops both locally and abroad.

The marketing of traditional export crops is more centralized and organized since each crop has an Agency which performs this activity. This has proved to be an incentive for many small farmers to produce these crops. Except for sugar, which has not yet been privatized, all the other export industries have been deregulated. Thus, farmers are no longer obliged to sell their crops to a few exporting agencies. The major crops affected by this policy are coffee and citrus. There is widespread concern, however, that quality control could be affected by this policy, particularly in the export of citrus. In the case of coffee, the concern is related to severe price undercutting and to the unreliability of certain traders. In spite of

the progress made, the situation with respect to the deregulated marketing of specific export crops will have to be closely monitored over the next few years to ensure that there is no return to the chaotic situation of the 1940s.

## 7.6 Women Development Constraints

Many women are the sole source of income for their families and are thus responsible for housing and feeding their children, maintaining family living standards and ensuring that children are cared for while they work outside the home. Women who are not heads of households also undertake substantial responsibilities for contributing to household support. The main constraints related to gender issue are:

- (a) **Unemployment.** Females comprised 68% and males 32% of the unemployed labor force in 1991. Unemployment decreases with age for both sexes, but it is relatively higher for young women between 14-24 years.
- (b) **Wage Rate.** Men and women are often paid the same rates for work in agriculture, but the latter earn less for task work, because they are less efficient at doing this and household responsibilities constrain them from working longer hours. Casual daily rates for employees in Government's Salary Classification Schedules still indicate two rates, it being understood that the lower rate is specified for women. This is in spite of the Equal Pay for Comparable Work Act which was legislated in 1974.
- (c) **Recognition of Womens' Needs.** The Ministry of Agriculture has had some difficulty in articulating the needs of women in agriculture. This is because the Ministry has responsibility for a productive sector and not for a particular gender. It is difficult to argue that women farmers need

more water, fertilizers and access to land than do men. The Bureau of Women Affairs has also discovered similar problems in seeking to differentiate the needs of men and women.

## 7.7 Constraints and Opportunities With Regard to Cooperatives, Producers Organizations and NGOs

**Cooperatives.** The Cooperative movement has not had a very successful history in Jamaica. The main reason is that these organizations did not evolve in Jamaica as a result of the perceived needs of the people. They were mainly promoted as part of the government's program rather than as organizations that could assist to develop the sector. In addition, the individualistic behavior of the agricultural producers has been a cultural constraint to the development of these organizations.

During the 1970's an attempt was made to establish sugar workers' cooperatives by giving ownership of the Bernard Lodge, Monymusk, and Frome Estates to former workers. This initiative was very unsuccessful as the cooperators did not recognize the responsibilities inherent in ownership and management. Furthermore, they were neither prepared nor trained to assume those responsibilities. Because of this, the experience was abandoned as production decreased due to financial losses. The demise of those cooperatives has limited the development of the cooperative movement in Jamaica.

There are few cooperatives functioning in Jamaica. Among them, the Christiana Potato Growers supplies inputs for members and markets for their production. There is also a small number of coffee and cocoa cooperatives which concentrate on marketing activities. It is generally accepted in Jamaica that Jamaicans are too individualistic to show



much interest in cooperatives. However, it has been accepted that cooperatives can work in specific areas such as marketing.

In spite of the importance of this kind of organization for agricultural development, it has been difficult to operationalize it successfully because of the above-mentioned problems. It should be noted, however, that some of the difficulties are closely related to the approach used to establish these organizations rather than to their acceptance by farmers. Therefore, if properly presented to farmers the cooperative organization could become an important institution for the development of the small farm sector.

**Producers Marketing Organizations (PMOs).** After the demise of the Sugar Workers Cooperative in the early 1980's, attention was turned to the establishment and development of Producer Marketing Organizations (PMOs) in 1985. These were developed under the Agricultural Marketing Development Project which intended to increase farmers' income and enhance their participation in marketing activities. The implementation of the project, however, has proven to be well below expectation. The original scheme called for the development of twenty-five farmers' marketing organizations (PMOs) and four sub-terminal wholesale product markets. However, only seven PMOs were established, three of which were already co-operatives before project implementation. No sub-terminal wholesale product markets were established and collective integration of production and marketing was not realized.

A survey of the PMOs carried out in 1987, identified a number of strengths and weaknesses. The main potential strengths recorded were as follows: (i) they may serve to increase local competition among marketing intermediaries; (ii) sometimes they can work as a market outlet to farmers overlooked by other market intermediaries; (iii) they may

serve to increase the "market power" of farmers in certain areas through forward integration into export, wholesale, and retail markets; and (iv) they have the potential to serve as a forum to express farmers' concerns and collective action.

With respect to the weakness of the PMOs, the following were observed: (i) they are indistinguishable from other marketing intermediaries in their respective areas; (ii) inadequate member participation and level of operation; (iii) farmer members often used the PMO merely as a last resort market; (iv) farmer members generally displayed a lack of understanding on how the PMOs could assist them; (v) they lack the resources to design and implement production and marketing strategies; (vi) communication between PMOs and their markets, as well as between PMOs themselves, was deficient, precluding coordinated marketing; and (vii) transportation facilities were inadequate for PMOs marketing.

Nowadays the situation with respect to the PMOs remains virtually unchanged. They have not yet demonstrated success and the MINAG continues to promote them on the basis that financial support is lacking and they should become viable organizations.

**Commodity organizations.** They are public bodies which have been established by government initiative using legal powers. The Boards were established in the 1940's during the war years when farmers had great difficulty in selling products. The Organizations were set up to improve the economic position of agricultural producers and to develop a particular industry, while maximizing benefits to the country.

Indications are that the majority of small farmers continue to sell to commodity boards with which they have developed strong relationships over the years. It is, therefore, mainly the larger farmers who sell outside the commodity boards. Small

farmers have benefitted from the fact that the price offered by the boards, particularly the Coffee Board, has been more attractive.

**Non-Government Organizations (NGOs).** In the last decade, Jamaica experienced an increasing tendency for donor agencies to use NGOs as the main vehicle for disbursement of funds. This trend is likely to continue in the near future, since there is an expressed concern to move away from centralization and bureaucratization. Moreover, there is a favorable legal framework and political climate which encourages collaboration between the Government and NGOs. Evidence of this is that the Government has become involved in direct and indirect funding to NGOs.

A recent survey conducted by the Association of Development Agencies (ADA) on the future of the agricultural sector and the role of NGOs identified several areas for NGO collaboration, such as: (i) research into small stock rearing, hatcheries, and the establishment of fuel forests as an alternative to the indiscriminate cutting of the island's trees; (ii) closer cooperation in training of farmers and other agricultural workers in the use of the low cost labor saving technologies; (iii) cooperation in the establishment of a rural center for appropriate technology and agricultural engineering; and (iv) support for research into value added agricultural projects and agro-processing in areas such as canning and bottling of agricultural products.

Notwithstanding the collaboration that NGOs can provide, they face a number of constraints that affect their role. Among others, they lack working capital and are under-capitalized; they are highly dependent on donors, and have inadequate staffing and technical expertise; they lack financial management

capability and specialization; and their diversified activities constrain them from accumulating a critical mass of skills and experience.

## VIII. TOWARDS A STRATEGY FOR IFAD IN JAMAICA

### 8.1 The Government's Strategy for the Rural Poor

The Government of Jamaica has formulated a Five-Year National Plan for the period 1990-95 that outlines the priorities, objectives and strategies for development of the economy and the agricultural sector. Among other things this plan identifies several problems and constraints that affect the agricultural sector and contribute to rural poverty including: the sector's low performance; the country's increasing dependence on imported food; a decline in support services for the sector; low productivity; low incomes; unemployment; inadequate social services; and, environmental degradation.

In addressing the problems and constraints, the Development Plan specifies a number of broad objectives and strategies. The objectives include: (i) to increase production and productivity of agriculture so as to make a substantial contribution to the country's food and nutritional requirements; (ii) to improve the quality of rural life by increasing farm income and rural infrastructure; (iii) to increase employment opportunities in agriculture; (iv) to promote long term conservation practices and environmental management in order that degradation and natural resource destruction is reduced especially in the watershed areas; and (v) to foster the development of appropriate technology for agriculture through research and development.

The government's basic strategy for agricultural development consists of achieving a level of sectoral self-sustaining growth with small farmers playing a major

role. The Plan emphasizes the expansion of traditional and non-traditional export crops, as well as production of selected crops and livestock products for the domestic market to improve food security and increase import substitution. It also places emphasis on the adoption of appropriate technology and expansion of research and extension activities to assist farmers to improve productivity, farm income and living standards. Furthermore, the strategy includes a continuation of earlier programs such as the land divestment program, the land titling program, the hillside development program and improvement of the credit delivery system. In the watershed areas, the Plan proposes a major shift in land use, to encourage cultivation of more perennial crops so as to sustain the natural resource base and secure a more stable income for small farmers.

Regarding other aspects of rural poverty, the government's strategy is to restore the level of funding to improve social services (education, health, nutrition and housing), expand employment opportunities especially for youths and women, increase their access to land, credit, markets and other support services, and provide opportunities for greater involvement of youths in rural development and public sector relief programs. One of the major projects targeted at women is the development of cottage industries and agro-processing, while youths are to be assisted in agriculture with the procurement of agricultural inputs. For the elderly, retired and handicapped, the strategy is to improve the economic self-sufficiency of these groups through the implementation of programs that provide additional financial and other economic support. The government proposes also to strengthen its several welfare programs to assist the poor in general. These include the food stamp and school feeding programs, the poor relief program, economic and social assistance program, and programs for the aged, retired and the disabled.

## 8.2 Lessons from IFAD's Experience in Jamaica

IFAD has supported two development projects in Jamaica, both of them in the field of agricultural credit, i.e. the Small Farmers Credit Project and the Small Hillside Farmers Support Project. A third project, Rural Financial Services Project, was approved at the beginning of this decade but it has not been executed yet.

As a result of IFAD's activities, the institution has become a highly respected donor agency in Jamaica. There are three main reasons for this: (i) IFAD has not sought to impose burdensome conditionalities on the government; (ii) it is willing to adopt innovative designs in its projects, as in the case of the Small Hillside Farmers Support Project, where, for the first time, cash advances are made to participants against the maturation of their crop(s), in order to guarantee an income during the gestation period; and (iii) it is flexible with respect to making project adjustments, when deemed necessary.

### 8.2.1 Small Farmers Credit Project

IFAD's intervention in Jamaica started in 1982 with the approval of the Small Farmers Credit Project. Three institutions participated in the financing of this project, IFAD, IDB and the Government of Jamaica. The first two provided US\$ 10 million each and the third US\$ 5 million. The project began in 1983 and ended in 1989. Its main objectives were to strengthen the institutional and financial framework for agricultural lending in Jamaica, and improve the incomes of approximately 4,300 small farmers with holdings between 0.8-4.0 ha. by providing credit, technical assistance and soil conservation practices.

The project comprised three components: (i) US\$ 18.5 million for credit; (ii) US\$ 5.5 million to support various activities including soil conservation

practices and reforestation; and (iii) monitoring, evaluation and technical assistance. Originally, the project should have been implemented in four pilot areas, but this was later extended to cover the entire country. The ACB was designated as the executing agency with overall responsibility for the project, while funds were channelled to farmers through participating PCBs. The Ministry of Agriculture was responsible for providing technical support through its extension and soil conservation services, and for monitoring and evaluation.

In the execution of the project, the credit scheme involved 41 branch offices of the PCBs, and the project's Completion Evaluation Mission estimated that 14,155 loans were approved by the project and about 9,000 farmers benefitted. However, the project's progress was considered not to be satisfactory. There were problems relating to: the supporting activities due to MINAG's weaknesses in extension; delays in the evaluation of loan applications; timely execution of the soil conservation and forestry components; and, adequate monitoring.

The main results of the project were: (i) the ACB has been developed as a viable and a profitable institution, however, its main source of income has been investments in government securities and fixed deposit accounts, rather than agricultural credit operations; (ii) only about 10 out of 42 PCBs improved their financial situation compared to what it was previous to the project; (iii) 51% of sub-loans recipient increased their income and 64% increased their demand for labor; (iv) the project contributed to larger production as a result of increases in the cropped area, and not due to higher crop yields as originally planned; and (v) the project supervision was insufficient in terms of the use of loan recoveries for providing further credit to farmers.

Several major lessons were learned from this project. Firstly, it was demonstrated that there were no sound agronomic or technical bases for the anticipated increases in yields under the project. Consequently, the Project Completion Evaluation Report (PCER) recommended that in future initiatives, the increased production capacity of small farmers should be based on a more realistic assessment of available technology. In addition, the PCER recommended that the capacity of the extension system in disseminating new technologies should also be carefully assessed. Furthermore, provisions should be made in future projects to periodically review the proposed crops and technical packages to ensure that agronomic recommendations remain in harmony with changes in input and output prices.

Secondly, regarding institutional arrangements, a number of weaknesses were identified: (i) the project did not include activities for savings mobilization or other financial services which could have improved the ability of the small farmer credit system to move towards greater sustainability; (ii) inadequate attention was paid to institutional development, particularly to the PCBs as it was assumed that these institutions would develop with increased credit activities financed by the project; (iii) project monitoring was not an integral part of project management; (iv) the problems experienced between the various agencies (MINAG and the ACB) suggest that only one institution should play a lead role and that institutional responsibilities should be clearly defined; and (v) credit and marketing activities in agriculture were not closely linked.

Thirdly, in view of policy changes mechanisms of flexibility should be built into the project in both the design and execution stages. In the case of this project, it was unable to adjust to the new policy environment and to the country's needs

because the adjustment mechanisms were not incorporated sufficiently during the execution stage.

Fourthly, the project's assumption that marketing development would not be a problem, was not justified. Therefore, an analysis of the marketing system (higgler) and how it interacts with poor farmers should be part of new project formulation. Some information does exist on the role of higgler in the marketing system but this needs to be complemented.

Finally, in the design and execution stages, it is important that there be coordination between the project being proposed and those being implemented or planned to be implemented. This IFAD project had the lowest disbursement rates in the Caribbean region, in part due to the problems identified above, but also because there was a USAID project which provided grants to small farmers in the cocoa producing areas.

### **8.2.2 Small Hillside Farmers Support Project**

The Small Hillside Farmers Support Project became effective in December 1988, but its execution did not start until mid-1989 (completion date is 1995). The project is financed through a 5 million Special Drawing Rights (SDR) loan from IFAD, a grant of US\$ 1.42 million from the government of the Netherlands and borrower's contribution of US\$ 6.1 million. The main objectives of the project are: (i) to finance small farmers with less than 4 ha. and landless/quasi landless farmers to improve their income, reduce out migration and create employment; and (ii) expand perennial crop cultivation to reduce erosion through conservation techniques. Initially the project covered the hillside areas surrounding Kingston, but later it was extended to include the entire island.

According to a project's management review done in June 1992, the project was achieving its objectives with respect to the number and volume of loans approved and regarding the acreage developed. By that date, 1,193 loans were approved, comprising 74% of the total projected (1,606). However, the rate of disbursements to commitments was low, mainly because: (i) many farmers who had loans approved had not proceeded with the development of their farm development plans<sup>83</sup>; and (ii) delay by the Commodity Boards in submitting claims to PC Banks for material supplied to farmers.

In addition to the above, a number of institutional weaknesses which constrained a successful implementation of the project were also identified. During the review period, the Senior Project Officers at CIDCO and CIB were changed. This, together with a restructuring of the CIB/CIDCO, resulted in a slowdown in extension activities of the project such as delivery of fertilizers and seedlings. Moreover, some participating PCBs continued to experience weak management.

So far, the project has proceeded at a slow pace and the major lessons learned include: the need for greater flexibility in the execution phase of future projects in view of continued economic instability and radical changes in economic policies such as structural adjustment programs; the present level of technology is inadequate to improve productivity of small hillside farmers; and project monitoring systems have been inherently weak.

### **8.2.3 Rural Financial Services Project**

The Rural Financial Services Project was approved in 1991 but it has not been implemented yet because the ACB is putting in place the necessary conditions for project implementation. The project's development

is based on the PCER of the Small Farmers Credit Project, which indicates that the demand for financial services in rural areas could be met by the development of grassroots institutions capable of meeting the needs of the rural poor. Accordingly, the projects' objectives are: (i) institutional support to the PCBs; (ii) providing credit to the target group; and (iii) strengthening support services, primarily through RADA and CIDCO. The total cost of the project is US\$ 13 million.

The project has two main objectives - to increase the incomes of small farmers, marginal farmers and the rural landless, and strengthening the PCBs within the context of developing an Integrated Cooperative Bank Network. The project area is situated in the western part of the island comprising the parishes of Trelawny, St. James, Hanover and Westmoreland. The target group is 23,000 households that are of two distinct groups: approximately 16,000 full-time farmers using land between 1 and 10 acres will benefit from agricultural loans; and, 7,000 part-time farmers who use between 0 to 1 acre will benefit from non-agricultural loans.

Credit will be provided for farm development, off-farm activities and marketing of agricultural products. In the credit component, emphasis is placed on financing farm development rather than single crops, in order to be consistent with small farmers' survival strategy. Among other activities, funds will also be provided for a feasibility study on the establishment of a deposit insurance scheme, strengthening the support services to assist in loan supervision, and to giving technical support to farmers, including those involved in off-farm income-earning activities.

### 8.3 Strategic Considerations

The principal rationale for IFAD's intervention in Jamaica is to improve the

status of the various poverty groups in rural areas, through activities that increase incomes, expand employment opportunities, improve food supply and general living standards. The nature of the intervention will largely be conditioned by the specificities and spatial characteristics of the groups targeted, the resource requirements and the ease with which IFAD's efforts could complement the current efforts of the government and other agencies.

In developing a strategy framework to alleviate poverty attention should be given to nine critical factors. These are: (i) the current role of agriculture in the economy; (ii) the government's priorities and plans for the sector; (iii) the role of small-farm agriculture; (iv) constraints to small farmer development; (v) crop priorities in agriculture; (vi) the specific situation of the different groups of rural poor; (vii) environmental protection and sustainability; (viii) the government's strategy for the rural poor; and (ix) the experiences of previous IFAD activities.

Despite its long term stagnation (growing by less than 1%/year in the last two decades), the agricultural sector remains an important productive sector in Jamaica's economy. The Government is conscious of the fragility of tourism and the services sector; therefore, it has formulated a development plan for agriculture, aimed at increasing its efficiency and competitiveness, and leading to self-sustained growth and a larger role in the economy. More specifically, the plan seeks to: increase the sector's role as a supplier of food; expand employment opportunities; increase productivity and farm incomes; enhance agricultural diversification; promote inter-sectoral linkages; increase agriculture's contribution to foreign exchange earnings; and, improve the standard of living of the rural people.

Theoretically, the government's policy objectives for agricultural development in

general, and rural poverty alleviation in particular are very appropriate (as discussed in 8.1 above). However, there are four main weaknesses in the government's efforts to achieve its objectives. First, there is a lack of a sound and clearly defined strategy for implementation of the Plan. The Plan lacks coherency between macroeconomic policies, sectoral policies and rural development policies. Furthermore, the Plan lacks a strategic focus which in part may be due to an unclear understanding of the significant opportunities that exist for developing agriculture and the rural sector. Second, the Plan seeks to accomplish a little of everything but it does not indicate what are the priority areas. Budgetary allocation by the MINAG provides very little indication of prioritization among areas or commodities to be developed. Third, the government lacks the adequate means for implementing the Plan. The government's financial allocation to agriculture was reduced from almost 6% of the total budget in the mid-1980s to 2.6% in 1990/91. Total current and capital expenditure declined by almost one-half during this period while inflation more than doubled. Fourth, the institutional capability is very weak and there is a lack of effective coordination among the institutions in the sector, both within the public sector and between the public and non-public sector.

Small farm agriculture has been identified to play a major role in the sector's development program. However, small farmers face several constraints, which together has contributed to low productivity and farm incomes<sup>84</sup>. In addition, there is a lack of a comprehensive strategy for hillside agricultural development. Currently, there are several government programs and donor funded activities, which could be viewed as components of a strategy but they are not adequately inter-linked.

In developing a strategy for small farmers in general, and those located on the hillsides in particular, considerations should be given to their specific needs and the socioeconomic, institutional and agro-ecological environment in which they are located. As indicated in Chapter III, the small hillside farmer operates a complex farm system, which provides the bulk of his household food needs and a constant cash flow over time. His farm operations are organized therefore to minimize risks, and to meet both his food requirement and income security objective in the short run (rather than maximizing profit). Any strategy to increase the productivity and income of the small farmer should start from this premise.

Given the small farmer/hillside/food crop complex in Jamaica, a strategy that focuses on small, domestic, multicrop farms minimizes adverse off-farm economic impacts, by generating more employment per unit area cultivated and improves income equality. In addition to providing more long-term rural economic stability, small farm practices are more socially adaptable to traditional norms and allow for interventions that are "culturally sensitive".

The possibilities for IFAD's intervention in traditional crop production are limited, because there are several activities being implemented and planned to improve this sector. Efforts have been and continue to be made to rationalize and expand sugar and banana production to meet the needs of external markets. It is projected that both sub-sectors will achieve their full potential by 1994 when 270,000 mt. of sugar and 110,000 mt. of bananas, respectively, will be produced. It has been programmed that the coffee sub-sector would have sufficient local and external support for expansion. There are rehabilitation programs for existing coffee cultivations, and plans to expand Blue Mountain Coffee considerably with support from Japan. Moreover, there is an EEC

project to expand lowland coffee by 600 hectares. Coffee projects are also being implemented by the Commonwealth Development Corporation (CDC), the International Fund for Agricultural Development (IFAD), the Overseas Development Agency (ODA), Hillside Agriculture Project (HAP), the European Economic Council (EEC), and Japan.

The citrus sub-sector has a good potential in the future, because of a strong demand for canned and fresh fruit juices not only in the United States and in Europe, but also in the local market. Local interest in the crop is very high and there is a current expansion of 1,200 ha. in Montpelier (Western Region of the country). Cocoa cultivation has remained static, and both IFAD and USAID are funding rehabilitation programs. However, this sub-sector faces problems that include high production costs, poor market prospects and falling world prices. The coconut sub-sector was severely damaged by the hurricane in 1988 and there is scope for additional planting in order to attain pre-hurricane levels.

Tree crops such as mangoes, passion fruit, guava, soursop, and papaya have potential for future development. The domestic (especially the tourist sector) and export market potential for these products, either as fresh fruits, in processed form or as juices are good. The MINAG and USAID are currently developing a grant-funded project to develop agro-industry, by supporting product development, providing equipment for agro-processors as well as expanding selected crops. Food crops also has good potential for development, as substitutes for imported foods and for export, especially yams, dasheen, coco, pumpkins, hot peppers, plantains and a number of vegetables. These crops are grown mainly by small farmers and any intervention to increase production efficiency will contribute to expand the incomes of this group.

Within the livestock sector, the dairy sub-sector has been consistently identified as an area for expansion and development which could provide both nutritional and economic benefits to the country. There are opportunities to develop small viable enterprises in this sub-sector because it has a large number of small dairy farmers, most of whom operate below their production potential.

With regard to poverty, Chapter VI indicates that it is acute and widespread in the rural areas. Declining real per capita incomes and real wages, stagnation in agriculture, high food prices, elimination of food subsidies and reduction in social services since 1980 have contributed to nearly one-third of Jamaicans living below the poverty line. Furthermore, rural poverty has contributed to urban poverty in Jamaica. Programs to alleviate poverty have been implemented by both the public and non-public sectors. However, some of these are mainly short and medium term programs to alleviate rather than combat poverty. They lack a strategy, adequate resources and the long term policy perspective to significantly reduce the structural, institutional and other constraints that contribute to rural poverty in Jamaica.

Women play an important role in the rural economy, both as food producers and providers of various support services to various economic activities. They comprise slightly more than one-half of the country's population and about 40% of the households are headed by women. The burdens of economic adjustment have fallen more heavily on women compared to men. Furthermore, the unemployment rate among women is twice that among men. Therefore, any strategy to alleviate rural poverty should explicitly target improvement of the socio-economic status of this group, particularly those that head households and the unemployed.



The natural resource situation in Jamaica has deteriorated over the years with serious consequences for the economy. It has contributed to lower living standards for some groups in the society, and has threatened the long run sustainability of output from agriculture. Because of the constraints alluded to earlier, the farming practices of small farmers on hillsides contribute to soil erosion and destruction of watershed areas, and these adversely affect long run productivity, water supply, downstream farmers, inland fishing and natural habitats. Forest resources are being depleted at an alarming rate, in part due to their use as a source of fuel by lower income groups. Fishery resources have also been depleted and have contributed to lower living standards of small scale fishermen. Although the government is committed to protect and manage the country's natural resources sector more efficiently, it lacks an appropriate strategy and sufficient resources and public sector institutions are weak for this task.

Previous IFAD projects in Jamaica have focused on development of small farmers and the rural sector through the provision of credit and other services and strengthening of institutions. These projects have provided several lessons which are important considerations for a future IFAD strategy in Jamaica. Among other factors, the first project indicated that it is unrealistic for small farmers to increase crop yields when there has been no change in the technology used. Despite the availability of improved inputs, they have not been adopted fully by small farmers. The second project showed that it is futile to expect small farmers to pay high interest rates for loans when the production results do not justify borrowing. At the moment, credit programs have stagnated in Jamaica because there are too few borrowers and development of new projects in agriculture have stopped. High interest rates, the low profitability particularly of small farm agricultural production and inadequate support services

together contribute to the low level of borrowing and existence of very few projects in the sector.

The lessons provided by these IFAD projects highlight critical issues that should be addressed in any strategy for developing the small farm sector in Jamaica. First, there is the need to develop an appropriate technology for small farm agriculture. Second, the technology needs to be well researched and adapted to the specific conditions within which small farmers operate. Small farmers in Jamaica have specific agro-ecological and socioeconomic constraints and they try to minimize their risks in the short and medium term rather than attempt to maximize their profits. These farmers are no less rational than other farmers or entrepreneurs whether in Jamaica or in other countries, and there are logical reasons why they have not responded to previous initiatives to adopt improved farming practices. Third, an effective coordinating mechanism is needed in view of the several public and non-public institutions that provide support to small farmers. Fourth, development of small farmers requires a more comprehensive or holistic approach compared to the limited approaches used in previous projects. Institutional and infrastructural constraints such as inadequate research and extension, poor roads, inadequate transportation and marketing, and the agro-climatic conditions are so critical that credit alone is not sufficient to increase small farmers' production and productivity. Until the range of constraints is addressed in a comprehensive manner, the development of small farmers will be limited.

#### **8.4 Strategy Framework for IFAD's Intervention**

As mentioned before, the Government of Jamaica has implemented a SAP to remove distortions in the economy, improve

the incentive framework, reallocate resources more efficiently and increase overall economic welfare. However, the various socio-economic groups in the society have not benefitted from structural adjustment. Moreover, agricultural productivity has remained low, real incomes of small farmers have stagnated if not declined and large numbers of people have been added to the poverty groups.

Given the above context, the Government's Five-Year Plan outlines the objectives and priorities, including the need to improve the efficiency of the agricultural sector and enhance the welfare of small farmers and other groups of rural poor. While there is a strategy to implement the Plan, it is operationally weak, lacking completeness, coordination and resource adequacy. In the areas of rural and small farmer development, the availability of human and financial resources are inadequate to execute activities that will raise incomes, increase employment, improve rural infrastructure and overall living standards. Consequently, the desired impacts of the government's programs on various target groups would be marginal. In view of this situation, IFAD can play a critical role in assisting effective implementation of the Government's agricultural and rural development strategy.

Given the specific situation of the rural poor, the strategic considerations discussed in the previous section, and the severe constraints of the government to execute its programs to alleviate rural poverty, IFAD's strategy in Jamaica should be to support on-going efforts and implement additional rural development activities. This strategy should be a four-pronged one that focuses on four main areas: (i) agro-ecology; (ii) agro-industry; (iii) institutions, and (iv) infrastructure.

The strategy should be characterized by the following: (i) it addresses the specific

constraints that contribute to the poverty situation of each target group; (ii) it supports government efforts to alleviate and combat poverty over space and time; (iii) it is a multi-sectoral and multi-institutional effort that includes public and private institutions, NGOs and various groups.

IFAD's strategy should be a coherent one in which the four areas are inter-linked. The agro-ecological and agro-industrial activities basically address the constraints related to: production activities at the farm, marine fishery and agro-processing levels; natural resource protection and management; and, inter-sectoral linkages. The institutional and infrastructural activities are largely supportive of the other two. They consist of activities that will strengthen the institutional and infrastructural base for increased production and employment, higher incomes and environmental protection.

Based on previous experiences of agricultural and rural development activities in the last two decades, the strategy must of necessity be comprehensive, and it should address those factors (structural and institutional) that contribute to the low socio-economic status of the various rural poverty groups. The range of actions in the strategy should not necessarily be executed by IFAD only, but they should seek to complement those of the government, non-public institutions, as well as those of other donor and international institutions. In addition, the strategy emphasizes that a "one-shot" approach through which a number of disjointed activities are implemented will not resolve adequately the problems of rural poverty. The strategy should contain elements that also contribute to continuity and self sustained development, increased diversification and improved inter-sectoral linkages, by proposing actions that are linked over time to address specific sets of constraints of the target groups.

### 8.4.1 Agro-Ecological Activities

As discussed before, small hillside farmers grow a diversity of crops including permanent (perennial) tree crops and short-term (annual) vegetable and other food crops. In addition, many small farmers keep livestock and have some pasture land. Trees are cut for fuelwood and for other uses and the soil is turned very frequently for annual crop cultivation. While some farmers know about soil conservation, they lack the labor and other economic incentives to do much about it. In effect, they are depleting the resource base upon which their survival depends.

Given the complicated interactions between farmers and resources, an approach which takes a single perspective (for example, tree crops, soil conservation or credit only) is unlikely to be successful. The complexity of the farming system and its interactions with the natural elements of the watershed (water, soil and vegetation), as well as social and economic factors means that an integrated approach to hillside agriculture is needed. The intervention should be designed to combine activities related to farm production with those that sustain the natural resource base and the environment (agro-ecological).

The agro-ecological activities seek to: (i) promote the development of appropriate farming systems for small hillside farmers that could increase productivity, food supply and farm incomes; and (ii) improve protection and management of the natural resource base. They focus on addressing specific constraints at the farm level, taking into consideration the short and medium term objectives of small farmers and environmental consequences. They also include targeting activities that will increase incomes of farmers who are women and those of small scale fishermen.

Given the complex farming system of small farmers, the strategy should support

activities in the short run that minimize any disruption of the cropping system and the need for additional labor, while at the same time contribute to increased incomes in the short run<sup>85</sup>. Therefore, generation and adoption of technologies that increase crop productivity, particularly of root and annual crops should be encouraged. These technologies should be low-cost, land and labor saving and adapted to the poor soil conditions and terrain of the hillsides, so as to minimize the risks of adoption and maximize on the use of available labor. Furthermore, technology that improves productivity of food crops could have economy-wide benefits through increased food supply and exports.

Permanent crops and livestock rearing are also part of the small farmers' production system. Technology that increases the output from these activities should also be generated and introduced (having the same characteristics as indicated above). The need to improve permanent crop cultivation on the hillsides is critical in view of the positive impacts this will have on reducing environmental degradation. Besides, production of fruit crops could improve the supply of raw material for agro-processing activities and meet the market needs of the tourist sector.

The need to introduce appropriate low cost labor-saving technology to small hillside farmers is critical because of the labor constraint they face, their advanced aged, their reluctance to use credit, and fragmentation and small plot size of farms<sup>86</sup>. The generation and adoption of this type of technology would release available household labor for other farm activities (such as livestock) to develop under utilized land or to be engaged in off-farm employment. In this manner, relaxing the labor constraint would contribute to higher incomes for the farm household.

The physical environment within which small hillside farmers operate is very fragile

and it has been severely degraded by poor farming practices and destruction of forests. Therefore, activities to address these problems include forest protection, seedling production, afforestation and agro-forestry activities. These would contribute to improved protection of watersheds, as well as protection and management of forestry resources. Given the importance of the tourist economy to Jamaica, mixed agro-forestry systems can retain the scenic vegetation important for tourist promotion. In addition to the environmental benefits, agro-forestry activities would supplement farm income and increase wood supply.

With regard to the fishery sector, small scale fishermen are poor in part because of the low level of technology used. In addition to the provision of low cost technology to increase production efficiency, the strategy suggests the implementation of effective measures to manage and protect fishery resources.

#### **8.4.2 Agro-Industrial Activities**

The agro-industrial activities seek to strengthen and expand linkages between the agricultural and agro-processing sectors, in order to alleviate market constraints for small farmers and increase rural employment opportunities for women, the unemployed and the landless. The strategy is to complement current efforts to develop the agro-industrial sector, and to address those constraints that contribute to the weak linkages between agriculture and industry such as high production costs, irregularity of supplies, poor product development, use of inadequate processing technology and underutilization of plant capacity<sup>87</sup>. Among other factors, it would involve increasing farm production of better quality products (fruits and vegetables), providing credit to improve and expand processing operations, developing appropriate technology and promoting training activities.

The problems of supply irregularity and input quality could be addressed through the agro-ecological activities, which includes the development of appropriate technology to improve production efficiency on farms. Through credit and training, the equipment, infrastructure and skills to support agro-processing activities could be met, and new product development utilizing local raw materials could also be realized.

The strategy should be to locate processing activities, whether factory plants or cottage industries, closer to farm production areas. This could significantly strengthen the linkage between farmers and processors and reduce the costs to access raw materials. Moreover, it could expand employment opportunities in rural areas, particularly for women<sup>88</sup>. This strategy could also provide economy-wide benefits through increasing the viability of agro-processors to penetrate external markets to meet the volume, price and quality criteria.

One possible area of action is to develop pilot projects with selected processors that are working at less than full capacity, but who have reasonable good management capabilities and potential for growth. These projects could be developed with financial assistance from IFAD to both farmers and these processors and support from RADA.

#### **8.4.3 Institutional Activities**

The institutional activities are mainly supportive of the previous areas of the strategy. The objectives of these are: (i) to support and strengthen those institutions that have responsibility for implementing activities related to the agro-ecological and agro-industry approaches; and, (ii) to improve the socio-economic status of rural women and unemployed youths by providing them with increased access to resources (land, credit and technology) and training.

In the agro-ecology and agro-industry areas, the role of improved technology is critical. However, prior steps to the use of technology on farms include research (including market research for outputs), development and adaptation of technology, extension and training. The current institutional capability in these areas is too weak to effectively execute these activities. Therefore, the strategy should be to strengthen the relevant institutions, so that they can develop, adapt and diffuse appropriate technology for both small farm production and for agro-processing. Both public and private sector institutions involved in adaptive research and technology development, as well as in the provision of extension services, should be strengthened through the provision of adequate resources and skill development. In this regard, the MINAG, RADA, UWI, JAS and the JADF are prime candidates to be strengthened.

The strategy also places emphasis on strengthening other support services such as input supply, marketing services, credit facilities, accelerating land titling and tenure security and land availability. While the focus is to improve both the quantity and quality of the services provided by public institutions, support should also be provided to private institutions and NGOs which play a critical role in agriculture and rural development.

Among other things, institutional activities would need to invest in new technology and equipment, develop training programs for researchers, extension agents, farmers, the unemployed and women, provide credit to small farmers and agro-processors, and develop new approaches to organize small farmers, women and youths.

#### **8.4.4 Infrastructural Activities**

The infrastructural activities focus on addressing the problems of poor infrastructure that affect small farm agricultural production, marine fishery,

agro-industry and marketing of agricultural products. These are supportive also of the first two areas and they consist of investment activities to improve and upgrade the basic infrastructure - roads, transportation, processing facilities, marketing facilities (packaging, warehousing, cold storage, etc.). These activities should be specific to meet the needs of each target group and their location. The strategy includes collaboration with the public and private sectors as well as with non-government organizations.

#### **8.5 Joint Efforts Against Poverty with Other Donors and International Organizations**

The largest multilateral donors in Jamaica are the IDB and IBRD, which provide funding for infrastructural improvement and social sector assistance. The US Government (through USAID) is the largest bilateral donor; other donors and international organizations include the Governments of Germany, United Kingdom, the Netherlands, Japan, Canada and EEC, IFAD, FAO and IICA.

The IDB has financed several projects in the last two decades in different areas, such as: industry and mining; export financing; agriculture and fisheries; urban development; education, science and technology; energy, transportation and communication; environment and public health; tourism; and pre-investment. With the IDB's Seventh Capital increase, the followings projects for Jamaica were approved: (i) Health Services Rationalization; (ii) Rural Road Rehabilitation; (iii) Electricity System Rehabilitation and Improvement Program; (iv) Agricultural Sector Loan; (v) Trade Finance and Investment Sector Loan; and Comprehensive Rural Township Development Program. Additionally, the pipeline of projects for 1992-95 includes sixteen projects. Among them, the most relevant for the social and agricultural

sectors are: a Watershed Management Program; Primary Education II; Institutional Strengthening of the Bureau of Women's Affairs; and Credit and Investment Program for Microenterprises.

The USAID's assistance is provided basically through four projects: the Hillside Agricultural Project (HAP); Food Assistance; Development Assistance; and the Housing Guaranty Program (HGP). The HAP comprises 13 sub-projects to develop small hillside farming in various areas. Food Assistance is provided under the Public Law 480 Title I Loan Assistance Program and the Section 416b Surplus Commodity Program. In this program, commodities such as wheat, corn and butter oil are provided to the Government of Jamaica (GOJ) for sale and the receipts are used to finance the Food Stamp Program. Development Assistance comprises grant assistance to specific projects designed to reduce constraints to growth in the areas of agricultural and rural development, population, health, education and human resources, environment, energy and private sector development. Under the HGP, loans from US investors are provided to the GOJ to finance mainly low income shelter development projects.

The current FAO's country program includes seven projects in the areas of agro-forestry, agro-processing, training for rural youth, marine cage fish farming, irrigation costs, and assessment of training needs in the public agricultural sector. Two new project agreements were signed in 1992-93: Assistance to Analyze Training Needs Survey; and, Indigenous Bread Training Technology Transfer.

Since 1981, a large portion of the Canadian Aid Program has been in the form of balance-of-payments support, food aid and fertilizer. The Program also includes a number of bilateral projects designed to meet longer term economic and social development goals. The major areas of

concentration for the bilateral program have been: agriculture (forestry and fisheries); infrastructure (construction and repair of bridges); micro and small-scale enterprise support; food assistance; and the recent establishment of the soil nutrients for agricultural productivity project.

IICA's main technical cooperation and administrative support actions include: (i) national technical cooperation projects: the Support Project for the Generation and Transfer of Agricultural Technology in Jamaica and the Rural Policy Development Project; and (ii) administrative support actions including: the Hillside Agricultural Sub-project and the National Yam Export Development Project.

In addition to the above, there are several small projects executed by MINAG and jointly financed by different international organizations. These include: (i) Agro-forestry Activities in Yam Growing Areas Project (FAO and GOJ); (ii) St. Ann Agricultural Rehabilitation Project and Beekeeping Development Project (EEC and GOJ); (iii) Blue Mountain Coffee Development Project (Government of Japan, CDC, IFAD, ODA, HAP, and GOJ); (iv) Trees for Tomorrow Project and Lobster Assessment Project (CIDA and GOJ); (v) Second Sugar Rehabilitation Project (IBRD and GOJ); (vi) Repairs to Daf Trucks Project (Government of the Netherlands); (vii) Meylersfield Rice Development Project (Dutch Government); (viii) Land Titling Project (IDB and GOJ); Hillside Farmers Support Project (IFAD, Government of the Netherlands and GOJ); (ix) Coffee Development Project (EEC); and (x) cocoa rehabilitation programs (IFAD and USAID).

Given the activities executed by other institutions and considering the proposed strategy, IFAD should examine the possibilities to develop joint actions as well as to complement the efforts of these organizations to alleviate poverty. Specific areas of institutional cooperation that focus

on the main rural poverty groups identified in Chapter VI should be explored.

## **IX. POSSIBLE AREAS FOR IFAD INTERVENTION**

The previous chapter identified four broad but complementary areas which IFAD's strategy should target to contribute to rural poverty alleviation in Jamaica. In this chapter, the specific areas in which IFAD could possibly intervene are identified.

### **9.1 Small Farm Agriculture and Agro-Forestry**

Four specific areas of intervention related to this topic could be: (i) improve the small farm production system; (ii) support agro-forestry activities on hillsides; (iii) support to yam production; and (iv) assistance to the GOJ's NFAP.

The main focus of the development strategy for small farmers should be on improvement of their production system, taking into consideration the various constraints they face and the natural resource and environmental consequences of their actions. IFAD's intervention could be directed at increasing farm productivity and income, through research, development and adaptation of appropriate technology for hillside agriculture.

Because of the special relationship between agricultural activities and the environment in hillside and watershed areas in Jamaica, the solution to poverty among small hillside farmers should not be based only on improving agricultural production. The farming system should include agro-forestry activities which, if properly designed and managed, could contribute significantly to watershed protection, land conservation and to higher incomes. A key aspect of the strategy in this area should be to generate tangible benefits for rural people, so that their commitment to forestry

and natural resources conservation could be increased. In this regard agro-forestry activities should be introduced among farming communities in critical hillside areas. The objective is to increase the availability of wood products and fuelwood, while increasing productive tree cover and environmental protection.

IFAD's intervention would support the government's efforts as well as complement initiatives of other organizations to invest in agro-forestry development, by funding activities related to establishment of demonstration farms, seedling production, reforestation of severely damaged areas and development of tree plantations. Incentives will have to be provided for farmers to participate. These could include input subsidies, grant funding (to reduce risk of income loss), support funding and technical assistance to the government and NGOs to organize and train farmers in agro-forestry activities.

At present, there is a critical shortage of yam sticks required for yam production, a root crop grown mainly by small farmers, and one that is becoming increasingly important as an export crop. The major producing areas are located in the uplands of the central and north-western parishes of the island, involving more than 8,000 farm families. It is estimated that 6 million yamsticks are required per year and this number could increase if exports are expanded. Over the years, most of the forested areas on private lands nearby have been completely depleted of yamsticks and farmers now purchase sticks that are cut from mangrove forests. The price of yamsticks has increased to the extent that it is now a costly input to the yam grower. This situation provides an excellent opportunity of additional assistance for the establishment of community-based wood lots to supply yam sticks. Through IFAD, technical assistance in the form of an international agro-forestry extension expert and a communications specialist could be

provided to assist farmers. Also, since the wood lots could be confined to marginal and degraded land or denuded sites, the rural community would benefit from better land use management and forest conservation.

The need for improved management and development of the country's forest resources is high on the Government's agenda. As a consequence, with FAO's assistance the NFAP was developed but it has been unable to attract funding mainly because of the institutional weakness of the Forestry Department. Until this comprehensive afforestation program is implemented, IFAD could provide financial and technical assistance to develop a few components of the Plan that are of high priority. Possible areas of assistance include: developing a comprehensive training program for farmers who operate on the most critical watersheds where forestry areas are becoming rapidly denuded; expansion of forest plantations; and, assistance to the charcoal industry through introduction of improved tree species and tree production systems.

**Soil Conservation.** Intervention is needed to reduce land slides and soil erosion, particularly in the more critical watershed areas (such as Rio Cobre, Rio Minho, Hope and Buff Bay), so as to lower siltation of rivers and water pollution. While agro-forestry development would contribute to improve watershed management and reduce soil erosion, they should be complemented by direct actions on improving soil use. IFAD could develop specific sub-projects in the critical watershed areas to assist farmers to adopt farming systems that will improve cultivation practices, while serving the larger objective of soil, water and forest conservation.

## 9.2 Agro-Processing

In this area, the focus is to expand existing and develop new non-farm rural activities. A major advantage of promoting

agro-processing activities is its potential to provide employment opportunities for various rural groups including small and marginal farmers, women, young persons and the unemployed.

Assuming that farm level strategies result in increased production in the medium term, significant improvements in the marketing system will be required to efficiently dispose of the incremental output. Given the limited size of the domestic market and that traditional export crops have reached or are near their optimal production level, agro-processing activities will be required and/or export markets will have to absorb the additional output. Currently, linkages between farm production and the agro-processing sector and the viability of agro-industry activities is often constrained by the inadequate supply of raw material. Of the 12 to 15 processing plants, most are small and all are under capitalized, using inefficient equipment. Capacity utilization is less than 60% in most cases with only two large plants being fully utilized. In spite of these difficulties the sector has much potential because Jamaica produces a wide variety of exotic fruits, suitable for processing and there is a large tourist and export market<sup>99</sup>.

IFAD's support to agro-processing could be provided in collaboration with the government, farm groups, the JAS, womens' organizations and NGOs. There are six possible areas in which IFAD could intervene: (i) technical assistance to the GOJ to identify priority commodities to be processed, based on the existing processing facilities, local and export market potential; (ii) support to the development of fruit orchards; (iii) funding to rehabilitate existing plants and to invest in new plants and equipment; (iv) support development of small micro-enterprises and home-based processing activities; (v) development of training programs for rural women and unemployed youths in agro-processing activities; and (vi)



assistance to develop and monitor acceptable standards for products.

### 9.3 Institutional Support

Given the poor institutional framework in Jamaica's agricultural sector, IFAD's support could concentrate on the following areas: research and development, extension, credit, dairy sub-sector, JAS, and rural women.

#### 9.3.1 Research and Development

Small farm hillside agriculture is adversely affected by many constraints. One of the most important of these is related to the unavailability of appropriate technology for hillside farming, the lack of which limits production and productivity. An appropriate technology needs to be developed that addresses the specific physical and socioeconomic environment of small hillside farmers, including climatic conditions, land degradation and sustainability, the farming system, use of improved inputs, income security, food production objectives and labor and market constraints. Among others, research is needed to develop appropriate technologies that will improve tree/annual crop combinations, high yield shade-tolerant varieties amenable to mixed farm systems, and on-farm conservation measures such as minimum tillage, alley cropping, etc. The evidence of previous and current small farmers' projects, including IFAD projects in hillside areas, has all indicated the need to develop appropriate technologies for hillside farming. Unless this critical constraint is addressed, programs to improve agricultural production and productivity in these areas will have limited impacts and the long run sustainability of hillside farming would be jeopardized. By introducing appropriate technology, the capacity of small farmers to adopt other inputs and utilize credit will be increased and the long run sustainability of hillside farming would be partly assured.

IFAD's intervention in this area could be to support the Government's effort and those of other institutions (IICA, UWI, CARDI, and JARP) to develop an effective research system to address the technology constraints. The research strategy should be oriented towards: (i) finding solutions to short and medium term production problems balanced with a long term protection of fragile hillsides; (ii) participatory, i.e., focusing on farmers' needs and collaboration in on-farm research and resource management; (iii) responsive to the high level of diversity of hillside agriculture, and (iv) concerned with technology development for improved agricultural production in both a socio-economic (rural incomes, employment, etc.) and environmental (watershed management) context.

More specifically, the possible areas for IFAD to intervene are: (i) technical assistance to restructure and improve the agricultural research system, starting with a clear definition of the institutional framework and a research program; (ii) support to the development of technology generation under a farming systems approach; (iii) complement the government's resource base to develop strong and effective public sector institutions involved in research in crop and livestock production, forestry and fisheries; (iv) support activities to generate and adapt appropriate technology for small farmers, artisanal fishermen and for agro-processing; (v) finance development of strong information base to support research and development; (vi) assistance to develop adequate legislation to reduce praedial larceny and regulate natural resource use including exploitation of forestry and fishery resources, land security and its utilization; and (vii) assist the government to develop adequate mechanisms to coordinate the agricultural research activities of public, non-public and international organizations.

In strengthening the institutional framework for research and development,

IFAD could provide both financing and technical assistance to turn the MINAG's research station at Bodles into a viable research center. The support package should include upgrading facilities and equipment, adequate training of staff and provision of incentives to retain technical personnel. Over time, this center could provide the laboratory and research services to other agencies, whose activities may ultimately be merged with the Research and Development Division of the MINAG. The Division should be capable of attracting external funding and it should establish closer contacts with International Agricultural Research Centers, especially CIAT, CIMMYT, IICA, and CIP, and obtain their assistance to improve research techniques, staff training, information gathering and diffusion.

High priority should be given to prepare a national research development plan, and establish a national research coordinating body with the responsibility to plan, prioritize and monitor agricultural research programs. The plan should devise a better balance among research areas than is presently observed. Focus should be placed on adaptive research to benefit small hillside farmers, with emphasis on appropriate farming systems which integrate tree crops, forestry, food crops, livestock and soil conservation practices. Technical assistance would be required to determine the institutional framework to be put in place and the research program. This is an important area for IFAD to collaborate.

The Fisheries Division of the MINAG and institutions involved in forestry and natural resource management such as the Forestry Department, Natural Resources Conservation Division, National Irrigation Commission could also be targeted for institutional strengthening. Critical areas where support is needed include policy formulation and implementation, program monitoring and evaluation, upgrading of

facilities and equipment, and training of staff.

### 9.3.2 Extension

While research is focused on developing appropriate technologies for the small farmers, there is a clear need to disseminate these effectively. Several institutions including RADA, JAS, JADF and other NGOs could be supported by IFAD to improve extension services to farmers. RADA was established to be the main public sector institution to provide such services, but it has a very limited capacity, as evidenced by its programs targeting 20,000 small farmers out of a total of 150,000. RADA's capability is clearly inadequate if small farmers are to be assisted to increase production and productivity and market their products. Because of staff reduction, RADA currently concentrates its activities using the group approach rather than focusing on individual farmers. Through technical assistance and funding for training, IFAD could assist RADA and other institutions to develop stronger linkages with the MINAG's Research Division, and develop least cost methods of providing extension support to farmers.

Through RADA and the JAS, IFAD could provide technical assistance at the farm level in soil conservation techniques for hillside farms, in order to diffuse farming systems which are technically feasible and economically viable. The provision of extension materials, appropriate equipment and other facilities would be an important part of IFAD's activities, so that extension officers could work more effectively with small groups of farmers. The collaboration should also include the provision of equipment such as knapsack sprayers, mist blowers, fertilizers, pesticides, etc., for use on demonstration sites which will be a critical part of the extension approach. Finally, IFAD could support training of extension officers on a

continuous basis, with emphasis on the implementation of methodologies developed at the research station.

### 9.3.3 Credit

Among other factors, high interest rates in recent years have precluded borrowing by some small farmers. Notwithstanding this, credit should still be an important part of IFAD's strategy, not only for small farm development but for the development of non-farm rural activities as well. The strategy should include the provision of a line of credit to the Micro Enterprise Development Agency (MIDA) to develop non-agricultural enterprises which could support a wide cross-section of the rural poor, including the landless, women, young persons and the unemployed. This Agency provides loans below the interest rate of the ACB/PCBs, and it also provides basic business training to borrowers which is a mandatory requirement before funds are disbursed. Short and medium-term loans could therefore be made available to finance activities including food processing, dressmaking, retailing, transportation, bricklaying, carpentry and masonry.

Funding for micro-enterprise development has much potential to improve the socio-economic welfare of the rural poor, including the unemployed, women and the landless. However, the majority of potential beneficiaries lack the basic business training required for them to succeed. To address this, the NDFJ, the Agency for the Selection and Support of Individuals Starting Trade (ASSIST) and other institutions have been providing basic business training to borrowers before funds are disbursed. The training comprises record keeping, inventory control, marketing, etc., and some positive results have so far been achieved. IFAD could support the efforts of these institutions to maintain continuity because their programs are constrained mainly by a lack of funding.

Regarding agricultural credit, the focus should be to provide it to integrated farming systems rather than to mono-cropping activities, and it should be granted only after thorough analyses of the proposed projects. Through IFAD, marketing credit could be provided for crop purchasing (short term), transportation (medium term) and for rudimentary infrastructure for assembly, grading and storage of products handled by groups. This type of credit would benefit women higglers in particular, given their high participation in this activity. Assistance could be provided to the IPCBN's strategy to include development of a savings program, which could provide the PCBs with additional resources to sustain their lending operations, and also provide farmers a future source of equity.

### 9.3.4 Dairy Sector

IFAD support to the Dairy Industry should involve support to the MINAG's Research Development Division for herd development of the Jamaica Hope. This would involve providing financial support to purchase and rear breeding stocks for eventual delivery to farmers, using the facilities at Bodles and Montpelier research stations to breed these animals. It would also include an outreach program in which in-calf heifers would be distributed to participating farmers by RADA. Small dairy farmers would be provided with the necessary support services and they would be required to satisfactorily rear the first female calf for return to a revolving herd pool, from which other farmers could receive animals. To facilitate the most efficient delivery of services, three clusters of farmers should participate in the scheme. (i) Cluster I - Trelawny area comprising Wakefield, Bankers Hill, Clarks Town and Deeside; (ii) Cluster II - St. Ann/St. Mary area comprising Guys Hill, Carron Hall; and (iii) Cluster III - Manchester, St. Elizabeth, St. James.

### 9.3.5 Rural Women

As indicated before, a large proportion of households are headed by females, and women comprise an important group of the rural poor in Jamaica. Intervention policies should clearly address the specific needs of women, particularly those related to gender inequality and rural poverty. In view of the importance attached to women's development by the Government, more training programs should be provided to women, to improve their skills and productivity so that their economic and social well-being and that of their families could be enhanced.

At the farm level, IFAD's intervention to improve the technology and to strengthen the extension system would contribute to the alleviation of women's workload in agricultural production. IFAD's strategy should also include support to a comprehensive training program for rural girls and adult women in a wide range of skills including those traditionally reserved for men. Recent experiences in Jamaica demonstrate that barriers to jobs formerly regarded as being for men are rapidly being broken down. However, more women are unable to avail themselves of these new opportunities because of low skills. This effort could be complemented with the development of cottage industries based on utilization of farm products usually produced around the home. Simple methods of canning and preservation of these products could be taught. Training for income generating opportunities at home such as sewing, handicraft, etc., could also be done through women's organizations and NGOs. The advantage of such activities is that as well as utilizing fruits that otherwise may go to waste (in the case of fruit preservation), they also assist women to remain at home where they can also care for young children.

Women comprise the largest group of higglers in Jamaica. Their role in agricultural marketing has been noted

before, and they are likely to remain an important part of the agricultural marketing system. Specific activities should be developed to organize higglers and integrate them in the marketing system, so that they could provide a more efficient service.

However, it is likely that an increasing number of women will work outside the home. Therefore, a critical part of the strategy should include the expansion of rural day care centers. Most centers currently target children of the middle class, while those from poor families are precluded because of the high costs. The expansion of such centers in the rural areas would allow women to participate more effectively in the development process. In addition, proper training of staff and strengthening of rural institutions could be carried out to increase awareness and alleviate women's concerns.

With regards to training, it would be useful to have an assessment of the training needs from both the demand and the supply side. Although there is much formal and informal training of women, these may not necessarily meet the needs of the market. This assessment could provide information to target IFAD's actions as well as assist donors to be more effective in their contributions to the development of rural women.

### 9.3.6 Support to JAS

Although the JAS plays an important role in the farming community, it is limited because of inadequate resources. Institutional support to this organization is based on the fact that the Government alone will never be able to organize farmers effectively and mobilize them to participate more meaningfully in the production process. JAS could complement the efforts of the government, but its current capability for such activities is very weak. There is a clear role for IFAD in this area. In addition to the areas of support indicated above, IFAD's strategy could include technical

assistance to help JAS play a more effective role as a farmers' organization. Assistance is also required to implement a modern accounting system to improve the organization's viability and to develop a comprehensive training program to upgrade the staff on modern ways of organizing farmers. This is essential if JAS staff is to be informed on appropriate farming systems and technologies. Support could also be provided to make JAS staff more mobile, to enable them to more easily access small farmers located in remote areas.

#### 9.4 Infrastructure

The resources of the public sector to maintain and develop the infrastructural support for the development of small

farmers and other rural activities are very limited. The link between farm production in hillside areas and urban and rural market centers is weak, due in part to the poor condition of roads in these areas, inadequate transportation and the location of some farmers that are too remote for higglers. The lack of adequate infrastructure also contributes to post-harvest losses, low product quality and high distribution and marketing costs which are disincentives to production. IFAD's support could possibly be to assist the government, farmer organizations and NGOs to upgrade certain public infrastructure such as rural farm roads, small farm irrigation systems, storage and rural market facilities and transport.

## FOOTNOTES

- 1 The population of the Kingston Metropolitan Area (KMA) was estimated to be 24% in 1991.
- 2 UNCED, 1992.
- 3 Witter and Kirton, 1990. In 1987, the IDB estimated that 33% of the urban labor force and approximately 16% of the total labor force worked in the informal economy.
- 4 The reform measures include exchange rate adjustment, price policy reform, divestment, deregulation, tax and trade reforms such as removal of import licensing.
- 5 The Jamaican stock market index increased by more than 500% in this period, the highest in the world.
- 6 Jamaica's dollar was pegged to the US dollar at the rate of US\$1.00 = J\$1.78 until 1983. From 1984 to 1989, it was determined by an auction system, then by an inter-bank system until 1991. Since 1991, all exchange controls were removed and a market determined rate has been in existence.
- 7 The reduction in imports in recent years was consistent with the targets set in the IMF Stand-By Loan.
- 8 In large part, the efforts to reduce the deficit in the 1980's were constrained by a sharp growth in the operating losses of the Bank of Jamaica (BOJ).
- 9 IDB, 1992.
- 10 The rates were reduced in 1988 from 20% to 13% during the March-August period.
- 11 Much of the growth in manufacturing employment was concentrated in the dynamic garment sub-sector. The large increase in construction occurred in 1989 and reflected, to a large extent, reconstruction activities related to Hurricane Gilbert.
- 12 The inflation index has more than doubled since 1990.
- 13 In 1990, Jamaica ranked first among 26 developing countries in terms of enterprises divested or targeted for divestment. Stone, 1991.
- 14 Stone, 1991.
- 15 Most of the lands were leased by middle level professionals and larger private companies.
- 16 At the end of 1992, Jamaica's external debt is estimated to be in excess of US\$4.3 billion.
- 17 The PIOJ estimates that about 750,000 people (one-third of the population) live below the poverty line.
- 18 CRIES, 1982.
- 19 UNCED, 1992.
- 20 The government's land settlements and sub-division of larger plots in the 1980s are the main factors for the increase in small farms. Preliminary data for 1992 by MINAG indicates that the number of farmers is estimated to be 192,000, of which 151,000 operate farms of less than 5 acres.
- 21 Blustain, 1982; Mitchell, 1984; surveys for the HAP, 1990; and FAO, 1991.
- 22 This proportion is lower among the small farm group. There are other forms of security that are accepted such as certificate of compliance, crop liens, etc.

- 23 The information presented in the rest of this section is based on the 1978-79 Agricultural Census.
- 24 Particularly for tubers and ornamentals.
- 25 Sugar production in Jamaica is not viable at world market prices.
- 26 The 17% production decline in 1988 was due mainly to the damages of Hurricane Gilbert.
- 27 Currently, the country's share of the U.K. market is 17% compared with the Windward Islands whose market share is 48%.
- 28 Cocoa 26%, coffee 28%, potato 30%, tubers 36%, onions 27% rice 29% and maize 21%.
- 29 The area is approximately 24% of the island's total land area. Ruinate forests are a special case of natural forest which have been cut and have not produced full regeneration.
- 30 Fuelwood provides more than 35% of the household energy consumed in Jamaica.
- 31 Less than 10% of the agricultural labor force is unemployed compared with a national rate of over 15%.
- 32 The high average age of farmers is supported by various surveys in recent years such as the HAP and FAO's Small Farmer Development Project.
- 33 These enterprises are medium size farms that produce mainly for the export market.
- 34 This data is further supported by various sample surveys done in recent years on the Rural Farm Family Development Program and for the Hillside Agricultural Project (HAP).
- 35 The baseline survey by HAP of hillside farmers in 1991 also shows a similar proportion of women in the labor force.
- 36 A more recent estimate calculates that there are more than 20,000 higglers in Jamaica.
- 37 Brown, 1989.
- 38 The Small Farmers Development Project of FAO (1991) shows that 2.2 persons/family are engaged in agriculture based on a family unit size of 5.1 persons.
- 39 In areas of St. Mary and Portland, there is more mono cropping rather than multiple cropping because of the legacy of the banana plantations.
- 40 Survey information indicates that this cropping system has evolved as a result of the small farmer's objective to have a steady cash flow in the short term as well as its stability over time.
- 41 These are known as SAL I, II, III and ASAL.
- 42 Wheat, soya beans, corn, rice, butter, oil, milk, motor vehicles and lumber.
- 43 The lower growth in 1988 reflects the impact of the hurricane.
- 44 This was a reintroduction of subsidies on certain basic foods so as to cushion the impact of rising prices. Food subsidies were abolished in 1984 as an integral component of the Government's economic liberalization program.
- 45 The NPC consists of representatives from the political and technical levels in public sector as well as key private sector leaders from all sectors within the economy.

- 46 The number of establishments (budgeted positions) in the MINAG declined from about 4,000 in 1985/86 to 1,371 in 1992/93. Of the establishments in 1992/93, only 45% are filled.
- 47 Agricultural research activities are also undertaken by others institutions like CARDI, IICA, UWI, Commodity Boards, etc.
- 48 At the moment, these programs exist more in theory rather than in practice, because R & D activities have been reduced to a minimum due to a lack of finance and personnel.
- 49 It became operational in 1982.
- 50 This figure represents some 26,635 loans, the bulk of which (25,910) were made to small farmers.
- 51 It should be noted that small farmers who benefited from this allocation were mainly those who participated in special credit projects and those engaged in specialized crop and livestock production (e.g., coffee and cocoa farmers, small dairy farmers, etc.).
- 52 A statutory body under the aegis of the Ministry of Agriculture.
- 53 Prices paid to farmers should not be lower than the one paid by the Board; and the processing should meet the fermenting, drying and processing criteria.
- 54 Gardner, 1991.
- 55 Branch Societies function as local level community organizations, where training, marketing and community issues are handled in a cooperative way. They form the basis for cooperatives dealing with major export commodities.
- 56 This Cooperative Federation is the umbrella organization for 19 coffee cooperatives throughout the island.
- 57 CIDA, 1991.
- 58 NDFJ, 1991 Annual Report.
- 59 The UNDP's Human Development Report of 1992 indicates that 80% of the poor live in rural areas. Income refers to formal income.
- 60 The mean per capita expenditure of a household headed by a self-employed agricultural laborer was lower also than that of a household headed by an unemployed person.
- 61 It is important to note that landlessness and under utilization of land co-exist in rural areas.
- 62 These farmers do not include small farmers growing coffee mainly in the Blue Mountains.
- 63 Espeut and Grant, 1990.
- 65 There is no indication that the economic status of small artisanal fishermen has changed over the years.
- 66 The ratio of full-time fishermen to part-time is estimated to be 3 to 1.
- 67 Espeut and Grant, 1990.
- 68 Espeut and Grant, 1990.
- 69 F. Louat, M. E. Ghosh and J. van der Gaag, 1991.



- 70 Eldemire, 1993.
- 71 In the survey period (1989-92), it was found that medications for hypertension to this group had increased by nearly 500%.
- 72 Because Kingston and St. Andrew is largely urbanized, most of the poor in this parish could be generally characterized as the urban poor.
- 73 Small farmers that cultivate predominantly coffee in the Blue Mountain areas of Portland, St. Thomas, St. Andrew and a small part of St. Mary are not included in this group of poor hillside farmers.
- 74 It is important to note that the KSA area is largely urbanized and a high proportion of the poor may be urban rather than rural poor.
- 75 Gordon, 1989, Witter, 1889 and Anderson 1989.
- 76 Increase fragmentation of land; soil loss; stagnant technology.
- 77 Imports of cereal provided as food aid jumped from about 5 metric tons in 1974/75 to nearly 365 metric tons in 1989.
- 78 All irrigation systems are publicly managed.
- 79 Out of this total about 22,000 ha. receive water regularly.
- 80 The Hillside Agriculture Support Project (HASP) is perhaps the only activity that is currently involved in farming systems research.
- 81 The information presented here is based on a survey carried out in 1992, by Data Resources System International for the Ministry of Agriculture.
- 82 Higglers are small agricultural traders.
- 83 Taking into consideration the production alternatives and the technology available to them, their labor constraint and risk aversion, small farmers make an efficient allocation of their resources.
- 84 Past experiences with small hillside farmers show that introduction of tree crops would not be adopted in the short run, either to replace annual crops or livestock because of the income loss and decreased food production.
- 85 Given the production mix and low levels of technology available, working capital is not a severe constraint to many small farmers. Their use of modern technology is low, because the available technology does not address the specific constraints of hillside agriculture. As a consequence, these farmers have not adopted the technology introduced and there is very little need for them to borrow money.
- 86 Previous studies by AGRO 21 on this topic could provide a useful information base for an updated analysis.
- 87 The impacts on female employment could be high because most agro-processing activities in Jamaica employ a high proportion of females.



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## **APPENDIX**



TABLE A.1  
ECONOMIC INDICATORS 1980-91  
(GROWTH RATE %)

INDICATORS	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
GDP												
TOTAL	-5.8	2.5	1.0	2.3	-0.9	-4.6	1.7	7.4	2.9	6.5	4.8	0.2
PER CAPITA	-6.7	0.7	-0.7	0.6	-2.3	-5.8	0.8	5.8	1.4	3.0	2.8	-0.6
AGRICULTURAL	7.1	6.1	-7.9	7.2	10.0	-3.5	-2.1	5.2	-5.5	-4.2	11.6	0.4
CPI												
TOTAL	27.3	11.9	6.5	11.3	27.8	26.0	14.8	6.7	8.3	14.3	22.0	51.0
FOOD AND DRINK	33.4	10.3	6.1	12.0	28.4	25.5	17.8	7.3	9.5	20.0	22.3	54.8
FUELS AND HOUSEHOLD SUPPLIES	39.7	11.0	8.3	15.7	30.2	29.0	11.0	3.8	7.1	7.3	25.1	65.2
EXCHANGE RATE												
NOMINAL (1J\$/1US\$)	1.8	1.8	1.8	3.3	4.9	5.5	5.5	5.5	5.5	6.5	8.0	12.7
EFFECTIVE REAL (1980=100)	100.0	176.0	192.1	71.0	77.5	97.0	79.9	345.1	300.1	247.2	224.3	121.7

SOURCE: ESSJ

TABLE A.2  
SAVINGS AND INVESTMENT, 1980-91 (J\$ MN)

YEAR	IMPORTS OF GOODS AND N.F.S. (M)	EXPORTS OF GOODS AND N.F.S. (X)	TRADE BALANCE (M - X)	NET FACTOR PAYMENTS (R)	TOTAL EXTERNAL SAVINGS ES=(M-X)+R	PRIVATE SECTOR SAVINGS <sup>1</sup> (Sp)	GENERAL GOVERNMENT SAVINGS (Sg)	TOTAL NATIONAL SAVINGS NS=SP+Sg	TOTAL INVESTMENT ES+NS	PERCENT OF GDP (REAL VALUES)		
										EXTERNAL SAVINGS (ES)	PRIVATE SAVINGS (Sp)	GOVERNMENT SAVINGS (Sg)
1980	2525	2426	99	157	256	622	-118	503	759	14.0	34.0	-6.5
1981	3058	2510	547	71	592	592	-134	459	1077	28.2	28.9	-6.5
1982	2919	2240	679	21	700	799	-275	524	1224	30.9	36.6	-12.6
1983	3465	2821	644	52	896	1063	-402	661	1557	33.1	41.7	-15.8
1984	5580	4956	624	426	1050	1268	-155	1114	2164	29.8	38.0	-4.6
1985	7669	8521	1148	237	1385	1993	-540	1453	2837	32.3	46.7	-12.6
1986	7001	7284	-283	741	448	2033	104	2137	2585	8.9	41.5	2.1
1987	6344	8405	-60	874	814	2737	151	2888	3701	14.3	52.3	2.9
1988	9804	8892	912	-1240	-328	4941	321	5562	4934	-5.3	87.2	5.7
1989	15816	12442	3374	-1876	1498	5218	-34	6892	8180	20.1	80.6	-0.5

<sup>1/</sup> SUM IF BUSINESS AND HOUSEHOLD SAVINGS.

SOURCE: IDB' SOCIAL AND ECONOMIC REPORT OF JAMAICA 1990

TABLE A.3  
BALANCE OF PAYMENTS, 1980-91  
(MILLIONS OF US\$)\*

CONCEPT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
CURRENT ACCOUNT BALANCE	(166.3)	(336.7)	(403.4)	(355.1)	(332.1)	(301.6)	(98.4)	(136.1)	34.2	(295.3)	(263.5)	(52.2)
TRADE BALANCE	(75.5)	(322.7)	(441.5)	(436.5)	(334.7)	(435.6)	(247.9)	(356.7)	(357.3)	(572.4)	(468.0)	(359.5)
EXPORTS OF GOODS (FOB)	962.7	974.0	767.4	685.7	702.3	568.6	589.5	708.4	883.0	996.5	1,156.8	1,160.3
IMPORTS OF GOODS (FOB)	1038.2	1296.7	1,208.9	1,124.2	1,037.0	1,004.2	837.4	1,065.1	1,240.3	1,568.9	1,624.8	1,519.8
SERVICE BALANCE	(181.4)	(138.2)	(112.2)	(18.1)	(118.0)	(87.2)	61.4	49.0	(115.0)	(176.9)	(70.5)	34.6
CAPITAL ACCOUNT BALANCE	267.1	117.3	267.9	222.8	417.7	313.9	61.1	215.2	148.9	349.2	335.7	(34.9)
ERRORS AND OMISSIONS	(27.6)	4.7	18.0	133.2	(21.6)	(29.3)	(102.7)	(161.9)	(135.9)	(45.7)	(119.3)	87.1
GLOBAL BALANCE	73.2	(214.7)	(135.5)	(132.3)	85.6	12.3	22.7	79.1	183.1	53.9	72.2	(87.1)
CHANGE IN RESERVERS (-INCREASE)	73.1	214.6	117.6	(0.9)	(64.0)	17.0	80.0	82.8	(47.2)	(8.2)	47.1	-

SOURCE: ESSJ & IDB.

TABLE A.4  
FISCAL DEFICIT, 1980/81 - 1991/92

YEAR	GDP (A)	FISCAL DEFICIT (B)	(B/A)*100
1980/81	4,750.1	1,019.5	21.5
1981/82	5,267.2	1,070.3	20.3
1982/83	5,841.9	1,022.6	17.5
1983/84	6,897.0	1,641.6	23.8
1984/85	9,790.0	1,041.3	10.6
1985/86	12,013.7	1,321.8	11.0
1986/87	13,627.4	1,276.0	9.4
1987/88	17,235.5	626.4	3.6
1988/89	19,294.4	2,705.1	14.0
1989/90	24,078.9	1,237.2	5.1
1990/91	29,649.9	1,830.8	6.2
1991/92*	43,500.0	2,926.4	6.7

\* PROVISIONAL DATA.

SOURCE: PLANNING INSTITUTE OF JAMAICA.



TABLE A.5  
LABOR FORCE INDICATORS, 1980-91

YEAR	LABOR FORCE ('000)			UNEMPLOYMENT RATE (%)		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
1980	940.3	507.4	432.9	27.3	16.7	39.4
1981	986.1	521.0	465.1	25.9	14.7	38.7
1982	1,009.9	538.6	471.3	27.5	16.2	40.5
1983	1,008.4	544.5	463.9	26.3	15.9	38.0
1984	1,045.8	555.9	489.9	25.5	15.8	36.6
1985	1,042.4	563.4	479.0	25.0	15.7	36.0
1986	1,059.0	570.0	489.0	23.7	20.0	33.8
1987	1,069.7	575.3	494.4	21.0	13.2	30.4
1988	1,077.4	578.6	498.9	18.9	12.1	26.8
1989	1,062.9	569.5	493.5	18.0	10.9	26.1
1990	1,058.1	564.6	494.0	15.3	9.1	22.5
1991	1,072.5	571.8	500.7	15.4	9.4	22.2

SOURCE: ESSJ.

TABLE A.6  
DEBT INDICATORS, 1980-1991

INDICATORS	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
DEBT OUTSTANDING (US\$M) (AT END OF YEAR)	1,866.8	2,293.1	2,739.9	3,266.9	3,291.6	3,587.0	3,588.6	4,013.4	4,001.7	4,038.4	4,152.4	3,874.3
DEBT SERVICE PAYMENTS (US\$M)												
INTEREST	279.0	382.0	361.0	381.4	394.8	503.0	616.0	760.6	726.0	630.0	663.8	640.3
AMORTIZATION	159.0	151.0	195.0	195.3	186.0	285.0	258.0	285.3	249.0	230.0	292.5	245.6
	120.0	231.0	166.0	186.1	208.8	218.0	358.0	476.3	477.0	400.0	371.2	394.7
DEBT OUTSTANDING (% OF GDP)	70.0	77.5	83.5	82.6	135.8	180.3	150.2	140.4	115.4	102.9	100.3	116.1
DEBT SERVICE PAYMENTS (% OF GDP)												
INTEREST*	9.9	12.9	11.0	10.5	16.6	25.1	25.3	26.5	20.9	16.1	16.0	19.2
AMORTIZATION*	19.3	27.2	29.0	30.7	31.5	43.4	47.8	49.4	32.2	29.4	28.5	26.9
	11.2	10.8	15.7	16.1	14.9	24.6	20.0	19.1	11.1	10.7	12.6	10.3
	8.1	16.5	13.3	14.6	16.6	18.8	27.8	30.3	21.2	18.7	15.9	16.6

\* % OF EXPORTS OF GNFS.

SOURCE: ESSJ, BOJ.

TABLE A.7  
 AGRICULTURE PRODUCTION INDEX, 1981-91  
 (1981=100)

YEAR	EXPORT CROPS	DOMESTIC CROPS	MEATS & POULTRY	FISHERIES	TOTAL
1981	100.00	100.00	100.00	100.00	100.00
1982	97.59	85.21	97.73	103.73	91.10
1983	102.53	95.40	102.33	106.06	99.10
1984	91.10	115.54	110.52	107.69	110.30
1985	94.31	109.32	100.73	111.42	106.20
1986	96.05	103.04	96.27	126.81	102.60
1987	100.87	106.15	98.73	124.71	103.50
1988	74.34	93.74	105.64	123.31	94.30
1989	81.38	91.72	107.68	124.71	95.40
1990	88.44	102.01	124.51	135.67	106.30
1991	93.85	102.06	122.60	136.72	106.80

SOURCE: ESSJ.

TABLE A.8  
 OUTPUT INDICES FOR SELECTED EXPORT  
 CROPS, 1980-91 (1980=100)

CROPS	UNITS	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
SUGAR CANE	('000 MT)	100.0	88.6	102.8	92.1	104.3	93.7	97.8	89.8	128.3	89.4	112.2	106.2
SUGAR	"	100.0	84.3	96.5	101.5	93.4	113.2	96.6	91.7	113.5	93.0	102.0	111.8
BANANA (a)	"	100.0	73.0	100.0	92.6	48.0	108.3	161.5	161.0	83.1	148.0	146.9	123.2
COFFEE (b)	MT	100.0	115.2	104.2	119.7	102.2	69.2	126.4	115.6	120.8	44.6	130.5	129.1
COCOA	"	100.0	132.6	76.6	192.0	99.0	96.1	92.2	106.5	93.3	37.6	226.5	85.3
PIMENTO	"	100.0	278.1	62.7	121.8	117.9	102.2	62.5	110.6	102.0	83.8	130.3	69.6
CITRUS	"	100.0	77.7	106.1	74.2	85.1	124.3	129.6	85.9	144.4	52.0	183.4	57.7

SOURCE: ESSJ.

TABLE A.9  
PRODUCTION OF SELECTED EXPORT CROPS, 1960-1991

CROPS	UNITS	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1980	1981
SUGAR CANE *	('000 MT)	2,775.1	2,457.5	2,525.7	2,327.2	2,423.9	2,274.2	2,224.3	1,996.3	2,564.0	2,293.0	2,572.0	2,732.0
SUGAR	-	240.3	202.6	195.5	195.5	185.3	206.7	206.7	189.5	215.0	200.0	204.0	224.0
BANANAS **	-	37.0	27.0	27.0	25.0	12.0	13.0	21.0	33.5	26.1	41.6	61.1	75.3
COFFEE #	MT	6,804.0	7,536.2	6,164.8	9,770.5	9,895.3	8,912.9	8,736.3	10,097.1	12,193.0	5,443.0	7,103.0	9,173.0
COCOA +	-	4,203.0	4,291.0	5,546.0	7,126.0	6,527.0	6,297.0	6,315.0	6,633.0	6,291.0	2,299.0	5,281.0	4,374.0
PIMENTO ##	-	1,392.6	1,646.7	1,451.7	2,767.3	2,756.8	2,650.9	2,443.2	2,802.0	2,427.0	913.0	2,098.0	1,795.0
CITRUS: ++	-	1,277.6	3,552.8	2,227.4	2,714.0	3,201.0	3,270.0	2,044.0	2,260.0	2,305.0	1,932.0	2,518.0	1,752.0
SWEET ORANGES	-	43,460.4	33,775.1	35,825.4	28,576.4	22,612.0	28,100.6	36,406.0	31,282.2	45,129.0	23,448.0	42,898.0	24,801.0
GRAPEFRUIT	-	20,657.0	13,431.1	15,678.4	19,022.9	11,716.5	17,431.9	19,228.1	20,003.6	27,480.0	17,669.0	25,479.0	16,027.0
ORANGE	-	17,200.5	18,180.3	18,107.7	11,104.1	6,527.7	8,362.5	13,462.9	8,860.6	19,274.0	3,721.0	13,203.0	7,108.0
OTHERS	-	5,592.9	2,122.9	1,956.6	2,245.3	2,286.1	2,204.5	3,951.7	1,869.6	4,373.0	1,805.0	4,314.0	1,696.0
	-	-	40.8	81.7	204.1	81.7	81.7	163.3	408.2	2	23	-	-

NOTES: \* CROP YEAR OUTPUT

\*\* PURCHASES BY BANANA BOARD

TABLE A.10  
 PRODUCTIVITY OF SELECTED JAMAICAN CROPS  
 COMPARED TO SELECTED OTHER COUNTRIES

CROPS	JAMAICA RANKING TO OTHER COUNTRIES	NUMBER OF COUNTRIES	JAMAICA'S YIELD AS % OF HIGHEST YIELD IN OTHER CARIBBEAN COUNTRY	JAMAICA'S YIELD AS OF YIELD IN COUNTRY WITH HIGHEST YIELD
SUGAR CANE	5	15	100	55
COCOA	4	12	26	26
COFFEE	13	14	20	28
WATER MELONS	4	5	NA	82
ROOTS & TUBERS	5	15	53	35
SWEET POTATO	6	12	141	56
POTATO	12	13	53	30
CASSAVA	3	13	137	54
ONIONS	4	11	112	27
PULSES	4	15	90	53
PIGEON PEAS	1	3	164	102
RICE	9	15	64	29
MAIZE	9	15	81	21

SOURCE: USAID, 1991.

TABLE A.11  
NUMBER OF LIVESTOCK FARMERS AND LIVESTOCK NUMBER, 1982 AND 1990

LIVESTOCK	FARMERS REGISTER, 1982		LIVESTOCK CENSUS, 1990	
	NUMBER OF FARMERS	LIVESTOCK NUMBERS	NUMBER OF FARMERS	LIVESTOCK NUMBERS
CATTLE:	40,394	183,067	22,886	177,363
BEEF	18,910	106,558	20,633	144,750
DAIRY	5,596	26,954	753	22,385
DUAL PURPOSE	15,888	49,555	1,500	10,228
GOATS	51,702	241,694	26,843	193,825
SHEEP	-	-	200	3,141
PIGS	34,670	127,363	3,316	46,425
BROILERS	8,604	3,621,752	-	-

\* INCLUDES BOTH GOAT AND SHEEP FROM 1982 FARMERS'S REGISTER.

SOURCE: 1982 FARMERS REGISTER AND 1990 LIVESTOCK CENSUS.  
DATA BANK, MINAG.

TABLE A.12  
TOTAL AND AGRICULTURAL LABOUR FORCE, 1980-91 ('000)

YEAR	TOTAL LABOUR FORCE	WOMEN LABOUR FORCE	LABOR FORCE IN AGRICULTURE			% TOTAL LABOUR FORCE IN AGRICULTURE
			FORESTRY & FISHERIES			
			TOTAL	MALE	FEMALE	
1980	1,006.9	464.4	298.2	222.6	75.6	29.6
1981	1,022.9	475.8	285.0	217.2	67.7	27.9
1982	1,045.0	ND	278.1	210.7	67.4	26.5
1983	1,026.3	457.5	258.0	197.1	60.9	25.1
1984	1,047.5	458.5	262.9	197.7	65.2	25.1
1985	1,049.8	479.1	287.8	214.7	73.1	27.4
1986	1,055.5	489.0	275.9	208.1	67.8	26.1
1987	1,079.2	486.1	278.5	214.2	64.3	25.8
1988	1,075.1	489.9	271.6	201.8	69.8	25.3
1989	1,062.9	493.5	247.7	ND	ND	ND
1990	1,058.5	494.0	239.6	ND	ND	ND
1991	1,058.5	500.7	243.7	ND	ND	ND

SOURCE: PLANNING INSTITUTE OF JAMAICA.



TABLE A.13  
BUDGET: APPROVED ESTIMATES OF THE MINISTRY OF AGRICULTURE, FY 1983/84 - 1991/92 (US \$ 1,000 OF 1983)

TITLE	1983/84		1984/85		1985/86		1986/87		1987/88		1988/89		1989/90		1990/91		1991/92	
	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL	RECURRENT	CAPITAL
EXECUTIVE DIRECTOR & ADMINISTRATION	3,870.5	0.0	3,370.1	0.0	2,306.4	0.0	3,123.9	0.0	3,293.3	0.0	3,069.2	0.0	3,079.1	0.0	5,121.6	0.0	3,722.3	0.0
AGRICULTURAL PLANNING	282.2	0.0	256.0	0.0	160.8	0.0	182.9	0.0	1,235.8	0.0	1,008.0	0.0	877.9	0.0	0.0	0.0	0.0	0.0
LIVESTOCK DEVELOPMENT	2,811.3	2,100.2	1,889.7	1,411.6	1,007.7	1,007.7	1,770.1	2,941.0	1,703.7	3,107.1	1,891.1	0.0	1,762.2	0.0	0.0	0.0	1,887.1	0.0
SPECIAL PROGRAMMES	7,819.8	8,800.0	5,712.0	3,877.2	3,728.1	1,946.7	5,877.6	3,148.2	8,085.3	2,893.4	10,811.5	1,578.9	14,624.4	1,897.7	0.0	0.0	0.0	0.0
LAND ADMINISTRATION	1,352.8	300.0	822.4	887.7	572.7	311.3	671.6	1,467.3	1,003.0	5,454.1	1,119.0	488.4	851.6	7,172.1	0.0	0.0	0.0	0.0
MARKETING DEVELOPMENT	1,079.2	24,400.0	941.0	21,724.0	438.2	6,203.7	81.1	7,298.9	0.1	6,873.8	1,267.6	0.0	1,420.3	0.0	1,897.3	0.0	1,468.1	1,112.0
SUBSIDIES & CREDIT	1,290.0	0.0	894.1	0.0	0.0	0.0	0.0	0.0	50.6	0.0	0.0	0.0	499.8	0.0	0.0	0.0	0.0	0.0
GRANTS TO INTERNATIONAL REGIONAL AND LOCAL ORGANIZATIONS	5,237.8	0.0	6,344.3	0.0	0.0	0.0	6,871.8	0.0	8,141.0	0.0	6,740.7	0.0	7,808.4	0.0	4,882.0	0.0	0.0	0.0
EXTENSION	20,277.3	1,000.0	15,721.2	1,817.8	0.0	12,461.3	6,987.6	0.0	8,460.9	3,044.1	10,028.3	3,278.7	7,700.0	1,896.6	3,434.3	10,413.2	2,801.2	19,299.2
RESEARCH	4,620.0	12,000.0	4,726.8	10,513.3	0.0	2,813.2	0.0	3,461.3	0.0	5,284.3	0.0	6,319.4	3,017.6	4,099.0	3,264.2	1,208.1	1,978.7	2,179.7
IRRIGATION	0.0	0.0	488.1	0.0	0.0	488.1	0.0	1,748.9	0.0	1,748.9	0.0	3,325.9	0.0	1,233.3	5,422.0	1,511.9	8,199.1	898.8
INFRASTRUCTURE	0.0	2,802.2	0.0	18,872.6	0.0	828.4	0.0	488.7	0.0	1,914.7	0.0	888.9	0.0	819.7	0.0	0.0	0.0	0.0
PREMISES	0.0	5,202.2	0.0	5,189.0	0.0	1,028.3	0.0	216.3	0.0	788.4	0.0	720.7	0.0	469.9	1,388.6	789.2	1,822.7	1,163.0
TRAINING	0.0	800.0	0.0	254.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	403.2
OTHER	483.0	28,220.0	0.0	1,294.2	0.0	14,827.0	0.0	3,782.9	0.0	44,091.0	0.0	21,122.2	0.0	28,897.1	14,497.1	28,898.0	17,498.9	8,719.0
TOTAL	48,812.0	63,206.6	28,908.1	51,729.2	8,236.6	48,149.7	27,268.1	23,162.3	33,846.8	24,244.5	27,877.3	18,048.2	41,288.6	17,748.3	25,680.7	17,479.0	17,288.1	41,828.7

SOURCE: MMAAS.

TABLE A.14  
 NOMINAL AND REAL GOVERNMENT EXPENDITURE IN AGRICULTURE, 1980/81-1990/91

FISCAL YEAR	RECURRENT (J\$M)	% OF TOTAL RECURRENT	CAPITAL (J\$M)	% OF TOTAL CAPITAL	REAL* RECURRENT (J\$ M)	REAL* CAPITAL (J\$ M)
1980/81	33.7	2.2	83.4	10.1	33.7	83.4
1981/82	38.8	2.3	162.8	19.0	36.7	154.2
1982/83	43.0	2.3	102.4	12.0	36.5	86.9
1983/84	49.0	2.0	84.7	6.9	33.5	44.3
1984/85	51.5	1.6	75.6	5.2	27.7	40.7
1985/86	88.2	2.1	35.8	2.6	31.5	16.5
1986/87	73.4	1.9	89.5	4.6	31.0	65.3
1987/88	73.1	1.9	88.1	4.0	28.4	34.2
1988/89	80.3	1.6	340.9	9.3	27.6	117.1
1989/90	97.3	1.6	177.5	4.7	30.0	54.8
1990/91	104.4	1.5	179.3	4.4	23.6	40.6

\* DEFLATED BY THE CPI.

SOURCE: ESSJ.

TABLE A.15  
ACB: LOAN ALLOCATION BY SUB-SECTOR, 1983-91 (J\$ MILLION)

YEAR	DOMESTIC CROP	LIVESTOCK	EXPORT CROPS	INFRASTRUCTURE
1983	13,492.2	14,968.9	13,126.6	1,596.7
1984	8,770.8	7,467.1	20,930.1	4,632.0
1985	10,364.3	10,043.0	18,355.4	2,755.8
1986	6,928.7	7,473.6	30,355.2	5,759.6
1987	7,218.9	13,306.5	39,184.7	4,773.1
1988	3,323.4	16,128.2	40,143.5	8,249.8
1989	3,495.9	21,950.2	30,167.8	11,975.0
1990	8,621.8	32,626.6	57,485.3	11,134.2
1991	1,656.8	5,410.4	17,268.4	313.7

SOURCE: ACB.

TABLE A.16  
 POVERTY LINE AND REAL MINIMUM WAGE, 1983-92  
 (CONSTANT OF 1989)

YEAR	RURAL POVERTY LINE		MINIMUM WAGE	
	J\$	US\$	J\$	US\$
1983	1,273.5	659.8	3,679.9	1,906.7
1984	1,639.6	416.1	3,276.2	831.5
1985	2,097.0	377.2	3,792.0	682.0
1986	2,489.1	454.2	4,120.0	751.8
1987	2,673.8	487.0	3,860.2	703.1
1988	2,965.3	540.1	4,756.1	866.3
1989	3,570.0	620.9	5,200.0	904.3
1990	4,347.8	605.5	5,543.2	772.0
1991	6,807.8	561.7	3,668.6	302.7
1992	11,968.5	521.3	4,775.5	208.0

SOURCE: DERIVED FROM SURVEY OF LIVING CONDITIONS; IFS.

TABLE A.17  
EDUCATION INDICATORS

Country	Primary Pupil/Teacher Ratio	Primary Enrolment Ratio (net)	Completing Primary Level (%) **	Secondary Enrolment Ratio (Gross) †	Tertiary Enrolment Ratio	Public Expenditure On Education (% of GNP)	Public Expenditure On Education (% of total expenditure)	Adult Literacy Rate
	1999	1999-99 *	1999	1999-99	1999-99	1999	1999	1970 1990
Jamaica	34	99	83	61	5	2.3	12.9	87 96
Bahamas	28	NA	NA	NA	NA	NA	NA	NA NA
Barbados	21	NA	NA	93	19	NA	20.5	NA NA
Trinidad & Tobago	24	91	96	63	6	2.8	12.1	NA NA
Grenada	28	NA	NA	NA	NA	6.9	12.5	NA NA
St. Lucia	31	NA	NA	NA	NA	7.2	16.8	NA NA
St. Vincent	19	NA	NA	NA	NA	5.8	10.5	NA NA
St. Kitts & Nevis	23	NA	88	NA	NA	3.0	12.0	NA NA
Dominica	24	NA	79	NA	NA	5.7	10.6	NA NA
Dominican Republic	33	73	33	74	19	2.1	10.0	67 83
Belize	25	NA	67	NA	NA	NA	15.0	NA NA
Guyana	38	NA	NA	64	4	NA	NA	NA 96
Haiti	35	44	32	19	1	1.4	19.7	22 53
MEDIUM HUMAN DEVELOPMENT (excl. China)	28	98	82	46	6	2.5	18.6	NA 79
HIGH HUMAN DEVELOPMENT	30	97	81	86	25	2.2	18.9	NA NA

\* Net Enrolment ratio: The number enrolled in a level of education, who belong in the relevant age group, expressed as a percentage of the population in that age group.

\*\* The proportion of children entering the first grade of primary school who successfully complete that level in due course.

† Gross Enrolment ratio: The number enrolled in a level of education, whether or not they belong in the relevant age group for that level, expressed as a percentage of the population in the relevant group for that level.

The classifications of Medium and High Human Development refers to countries with a Human Development Index (HDI) of 0.5-0.799 and 0.8 and above respectively.

Sources: Human Development Report 1992 - U.N.D.P.

TABLE A.18  
 CARIBBEAN COUNTRIES - BASIC SOCIO-ECONOMIC INDICATORS: SELECTED YEARS

COUNTRY	GNP PE CAPITA (US\$) 1990	POPULATION ('000) 1990	ADULT ILLITERACY RATE (%)	LIFE EXPECTANCY OF BIRTH (YEAR)	INFANT MORTALITY RATE PER 1000 1990	DAILY CALORIE INTAKE 1989
THE BAHAMAS	11510	249	1	69	25	2761
BARBADOS	6540	257	1	77	10	3279
ANTIGUA & BARBUDA	4600	79	5	73	19	2222
TRINIDAD & TOBAGO	3470	1283	4	71	25	2853
ST. KITTS AND NEVIS	3330	40	10	69	36	2609
SURINAME	3050	447	10	67	39	2975
GRENADA	2120	94	3 (1979)	69	31	2706
BELIZE	1970	189	9	67	45	2656
DOMINICA	1940	82	6	75	16	2810
ST. LUCIA	1900	150	10	71	19	2595
ST. VINCENT AND THE GRENADINES	1610	114	18	70	22	2604
JAMAICA	1510	2390	8	73	16	2609
DOMINICAN REPUBLIC	820	7140	20	67	65	2530
GUYANA	370	798	5	64	51	2710
HAITI	370	6488	62	55	95	2013
REFERENCE GROUP (AVERAGE)						
CARIBBEAN COUNTRIES	2970	19600	16	88	41	2631
LATIN AMERICA	1950	410200	17	67	52	2728
HIGH INCOME	18840	835000	14	76	9	3389
UPPER MIDDLE INCOME	3810	423000	22	67	45	2980
LOWER MIDDLE INCOME	1320	88200	25	65	53	2741
LOW INCOME	330	3013000	57	62	69	2342

SOURCE: SOCIAL INDICATORS OF DEVELOPMENT, WORLD BANK; DEMOGRAPHIC AND HEALTH SURVEYS.

TABLE A.19  
PER CAPITA PRODUCTION INDICES, 1978-91 (1979-81 = 100)

PRODUCTS	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
CEREALS(TOTA	150.44	104.29	104.41	94.3	68.01	107.06	142.55	126.99	104.4	94.1	58.48	49.26	33.54	45.76
FOOD	114.39	106.56	97.23	96.35	88.47	95.43	106.99	97.69	100.62	98.67	95.65	92.09	99.57	96.42
AGRICULTURE	113.88	106.18	97.35	96.57	88.77	95.48	107.36	97.53	101.01	99.05	92.25	92.41	99.82	96.9
CROPS	111.81	105.23	96.59	97.95	87.75	90.73	102.53	96.95	94.28	93.92	88.76	82.81	88.12	89.49
LIVESTOCK	101.28	100.51	100.93	98.72	95.85	102.41	109.26	93.82	96.41	100.09	98.56	98.61	109.79	103.69
CEREALS	154.02	105.55	101.48	93.1	66	101.99	133.48	117.3	95.41	84.69	52.02	43.33	29.16	39.31
FOOD IMPORT INDEX	99.61	71.99	94.63	133.40	155.65	141.03	256.02	218.85	217.54	237.96	293.32	343.06	303.14	283.64

SOURCE: FAO PRODUCTION DATA & ESSJ.

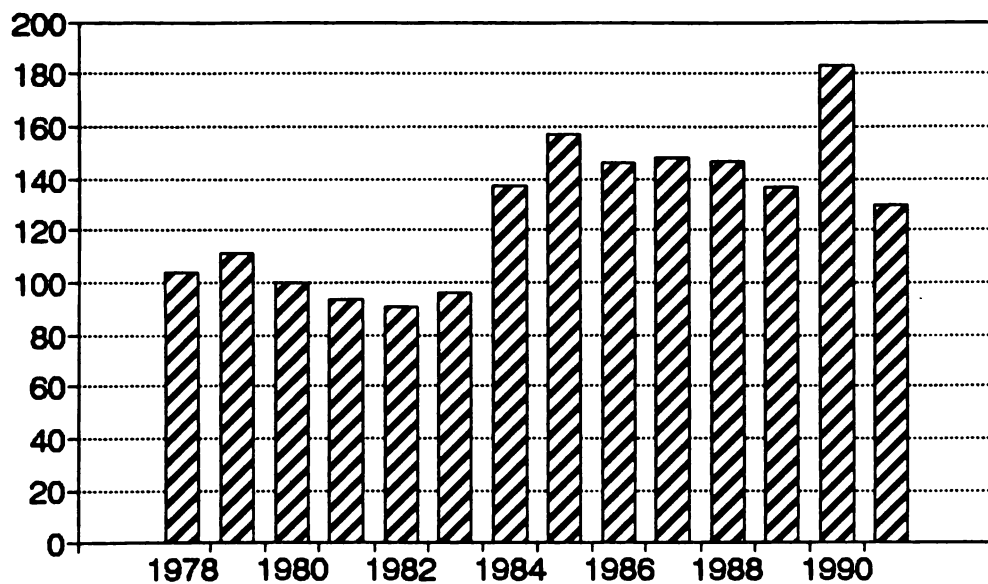
TABLE A.20  
DISTRIBUTION OF BENEFICIARIES OF THE FOOD STAMP PROGRAM, MARCH 1993

PARISHES	PREGNANT WOMEN	LACTATING MOTHERS	CHILDREN (0-5 YEARS)	ELDERLY POOR & HANDICAPPED	SINGLE MEMBER HOUSEHOLD	FAMILY PLAN	TOTAL
KINGSTON AND ST. ANDREW	3,010	1,232	26,733	3,682	6,398	29,542	70,597
ST. THOMAS	1,651	341	11,408	886	3,434	2,332	20,052
PORTLAND	1,375	1,117	8,251	405	1,513	3,488	16,149
ST. MARY	1,535	325	8,723	724	1,738	5,020	18,065
ST. ANN	2,407	100	14,965	1,296	4,031	6,675	29,474
TRELAWNY	1,424	19	9,263	732	3,008	3,383	17,829
ST. JAMES	1,140	408	12,968	425	4,274	2,625	21,840
HANOVER	1,736	50	9,845	690	4,134	1,126	17,581
WESTMORELAND	917	417	13,508	1,093	4,929	5,192	26,056
ST. ELIZABETH	724	395	13,892	946	3,566	8,505	28,028
MANCHESTER	1,525	549	11,392	959	2,736	11,091	28,252
CLARENDON	2,016	569	21,820	1,706	4,134	12,162	42,407
ST. CATHERINE	2,173	1,617	22,994	1,166	6,943	13,713	48,606
<b>TOTAL</b>	<b>21,633</b>	<b>7,139</b>	<b>185,762</b>	<b>14,710</b>	<b>50,838</b>	<b>104,854</b>	<b>384,936</b>

SOURCE: MINISTRY OF LABOR AND SOCIAL WELFARE.



FIGURE A.1  
REAL EFFECTIVE EXCHANGE RATE INDEX  
(1980=100)



SOURCE: IMF FINANCIAL STATISTICS.





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