FINAL REPORT

IFAD'S ROLE IN JAMAICA

Prepared for the

INTER- AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE.

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CURRENCY EQUIVALENTS

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

WEIGHTS AND MEASURES

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

ABBREVIATIONS AND ACRONYMS

AC Bank	-	Agricultural Credit Bank of Jamaica Ltd.
AC Board	-	Agricultural Credit Board
AIBGA	-	All Island Banana Growers Association
ARDD	-	Agricultural Research and Development Division
ASSIST	-	Agency for the Selection and Support of Individuals Starting Trade
BECCO	-	Banana Export Company
CARDI	-	Carribean Agricultural Research and Development Institute
CoIB	-	Cocoa Industry Board
CIB	-	Coffee Industry Board
CGA	-	Citrus Growers Association
CIDA	-	Canadian International Development Agency
CIDCO	-	Coffee Industry Development Company
CU	-	Credit Union
EEC	-	European Economic Community
GDP	-	Gross Domestic Product
GOJ	-	Government of Jamaica
IDB	-	Inter-American Development Bank
IPCBN	-	Integrated People's Cooperative Bank Network
MIDA	-	Micro - Enterprise Development Agency
NDFJ	-	National Development Foundation of Jamaica
PAMCO	-	Project Analysis and Monitoring Company
PCB	-	People's Cooperative Bank
PCER	-	Project Completion Evaluation Report
PIOJ	-	Planning Institute of Jamaica
PMO	-	Producer Marketing Organization
PMU	-	Project Management Unit
RADA	-	Rural Agricultural Development Authority
SFCP	-	Small Farmers Credit Project
SIA	-	Sugar Industry Authority

SECTION 1. CONSTRAINTS TO IFAD'S ROLE IN JAMAICA

1. ENVIRONMENTAL CONSTRAINTS

1.1 Introduction

Jamaica is an island nation in the Caribbean with an area of 10,940 square kilometres or close to 1.1 million hectares. Some two thirds of its area consists of a central range of hills and mountains rising to a maximum altitude of 2,256 metres at Blue Mountain Peak. The remainder consists of coastal plains, generally wider along the south coast than on the north, together with some inland valley floors and basins. This broad division into the hills and the plains underlies all aspects of land use. Temperatures average 27 °C in the lowlands, ranging from 24 °C in January to 28 °C in July, and falling with altitude. The country as a whole is well supplied with water, almost all of the hill lands receiving over 1,500 mm annual rainfall, rising to above 5,000 mm in some areas. Irrigation is necessary on parts of the coastal plains.

Jamaica's topographic structure 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. On the steeper slopes, only fruit trees, food forest or forest should be produced.

Notwithstanding this constraint to agricultural development, approximately 600,000 hectares of the island's 1.1 million hectares of land are used for agriculture. The results, however, can be regarded as far less than satisfactory, since the agricultural sector contributes only roughly 5% to GDP. This is inspite of the fact that it employs 26.8% (1991) of the labour force, indicating the very low productivity of much of the sector.

A report on the Environment and Development prepared for Jamaica by the United Nations Commission on Environment and Development (UNCED) identifies four major environmental impacts on agriculture. These are (i) erosion and sedimentation (ii) less stable river flow, (iii) agricultural chemicals in groundwater and (iv) saline intrusion. It also notes that soil erosion exacerbates the hazards of landslides and flooding. Some of the more important features which give rise to these environmental impacts are discussed below.

1.2 Slope and Land Classes

Slope angle of land is extremely important. A survey done in 1982 (Comprehensive Resource Inventory and Evaluation System, CRIES) gives the following frequency distribution of slope angle:

0	- 5	degrees	(0-9	percent	:	15%
5	- 10	degrees	(9-18	percent)	:	12%
10	- 20	degrees	(18-36	percent)	:	15%
Over	- 20	degrees	(over 36	percent)	:	58%

This reflects the fundamental division of the country already stressed. The plains and interior lowlands are level to gently undulating, whilst over half the area, the core of hill lands, has steep slopes. Some are excessively steep, and cultivation has been known on slopes of more than 45 degrees. A Jamaican system of land capability classification exists, with land classes from I to VII. Classes I - III are suitable for cultivation (in the case of

II - III with limitations) IV - V for tree crops, VI for forestry, and VII for conservation only. Slope is the main determinant of land capability, although other limitations are also used. For purposes of detailed agricultural planning, this system has been replaced by land suitability classification, based on suitability for specified crops or other land use.

1.3 Major Types of Soils

For its size, Jamaica has a substantial variety of soil types due to its contrasts in relief climate and parent material. Nearly 300 local soil types are recognized. (Annex I). The hill-lands are formed predminantly of limestones, with shales and sedimentary rocks in the Blue Mountains and some other central areas. Soils on the limestones range from shallow rendzinas to moderately deep or deep, red to brown, strongly weathered clays. Cracking clays are also found. The sedimentary rocks have loamy or clayey soils often shallow and gravelly. On the plains and interior lowlands, brown cracking soils are widespread, together with alluvial soils, calcareous in places. Poorly drained alluvial soils and peat occur on tidal flats and swamps.

1.4 Soil Erosion

Of the various forms of soil degradation - physical, chemical and biological - that of soil erosion in the hill lands is by far the most serious since wind erosion is not a major problem in Jamaica.

For a long time, Jamaica has suffered a severe problem of soil erosion in the hillsides. The basic reason is the growing of annual crops, particularly root crops on steeply sloping lands. This is due to the fact that increasing population density in the hillsides (the majority of Jamaica's small farmers are concentrated here) has led to intensive exploitation of the land and this is exacerbated by the fact that the majority of the small farmers attach great priority to the growing of annual crops for food. A Study done by Carloni in 1984, in the Kingston Watersheds showed that 59% of farmers regarded food production as their first priority.

This has had detrimental consequences on the crop yield, (low productivity already referred to) on sedimentation of rivers, causing serious flooding and loss of lives and to silting up of reservoirs, thus reducing the volume of water which can be supplied for domestic purposes. The problem is most severe in those watersheds which are most steeply sloping and at the same time settled, for example, the Rio Cobre, Rio Minho, and Upper Yallahs Watersheds. Eroded, abandoned land is commonly under guinea grass or bamboo. Unless urgent action is taken, the continuing scenario for the upper watersheds in Jamaica is accelerating deterioration and loss of resources necessary for agricultural development.

1.5 Deforestation

Jamaica's natural forests which account for 24.3% of the total land area are being diminished because of subsistence crop cultivation, pasture, establishment of timber and coffee, burning of charcoal and cutting of yamsticks. It is estimated that Jamaica loses approximately 81 million tonnes of soil per annum. Deforestation also leads to all the other problems mentioned under soil erosion. In addition it contributes to the loss of valuable nutrients from the remaining soil and reduced moisture retention properties of the soil. 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.

1.6 Soil Salinization

On parts of the southern coastal plains there is a problem of saline intrusion. This takes place in areas which are level, have fertile alluvial soils, but are dry and require irrigation. At present, it is mainly a matter of the infusion of saline sea water into the ground water. However, the process of soil salinization has occurred on some sites.

1.7 Soil Pollution

The problem of pollution of the water table by agricultural chemicals (fertilizers, pesticides) is still 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. Owing to the extent of limestone as parent material, soil acidification is not a widespread problem.

1.8 Environmental Management

Given the environmental problems outlined above and the limited natural resource base of the country, there is urgent need for proper management of the environment. Despite numerous laws, there is no comprehensive environmental legislation in Jamaica and although there are many statues 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 or regulations which are not enforced, has reduced the effectiveness of environmental management in Jamaica.

It must be recognized that because Jamaica is an island ecosystem, activities in any one sector will often have far reaching consequences on other sectors and that there will be inevitable conflicts between development and conservation. A good example of this is the debate being waged between coffee growers in the Blue Mountains and conservationists who would prefer to see much of the lands being used, left in forests. The fact that the need for economic development is so great, sometimes makes it difficult for the Government and the country to make appropriate choices.

1.9 Institutional System for Managing the Environment

In recognizing the difficulty it faces, the Government has sought to put appropriate institutional arrangements in place to guide and monitor the management of the environment. In January 1992, the Ministry of Tourism and the Environment was established to have prime responsibility in this area. The Ministry incorporates the National Resources Conservation Authority (NRCA).

The NRCA is the official lead government agency, responsible for the management, conservation and protection of the national resources of Jamaica. The NRCA was established in June 1991, in keeping with the provisions of the Natural Resources Conservation Authority Act (a) 1991. The Authority succeeded and replaced the Natural Resources Conservation Department (NRCD) which had been established in 1974. The NRCA has a wider scope and more enforcement powers than the NRCD as it is a specialized statutory agency. The NRCA operates under four (4) statutes, namely the Natural Resources Conservation Act, 1991; the Beach Control Act; the Wildlife Protection Act; and the Watershed Protection Act. Under the NRCA Act (1991) the Authority has the power to:-

request an environmental impact assessment from any person responsible for undertaking any enterprise, construction or development; issue permits to the person responsible for undertaking any enterprise, construction or development; fine polluters or other environmental offenders, revoke or suspend permits which have been breached; and with the approval of the Minister make regulations for the purpose of giving effect to provisions of the Act. (Annex 2)

While the creation of the NRCA and Ministry of Tourism and the Environment is very positive, the fact, however, that tourism has been linked together with the environment indicates a perspective that the proper management of the environment is more important to the preservation and development of the tourism sector than it is for instance to the agricultural sector. This is clearly not the case since the Ministry of Agriculture and its related agencies continue to have major responsibility for the 150,000 small farmers who cultivate in the hillsides and who contribute significantly to environmental degradation. The related agencies of the Ministry such as the Forest Department, the Coffee Board (CIB), Cocoa Board (CoIB), and the Coffee Industry Development Company (CIDCO) also have important roles to play, since much of their activities are in watersheds.

There is therefore need for effective co-ordination between these Agencies and the Ministry of Tourism and the Environment if satisfactory results are to be achieved. There is not much evidence that such co-ordination is now being effected. In addition, all Agencies involved are being badly affected by inadequate budgeting and by the inability to recruit and retain qualified staff. For example, a project prepared by CIDA for the forestry sub-sector cannot be implemented because of the inadequacy of staff. It is proving difficult even to recruit staff for training.

2. IRRIGATION AND DRAINAGE

2.1 Introduction

Agricultural production in Jamaica is greatly constrained by widespread dependence on rainfall and a deficient irrigation system. The result is sporadic production and unreliable supplies to the market place. Estimates are that production is sometimes reduced by up to thirty percent by poor weather conditions. It should be noted that all irrigation systems are publicly managed.

2.2 Water Resources

It is estimated by the Underground Water Authority that ground water accounts for some 84% of the country's exploitable water resources, of which 94% is contained in the limestone aquifers. The balance of 16% exploitable water resources would be from surface water sources, but with very few promising dam sites to provide storage potential, this represents only the safe yield estimates which are considered to be about 12% of long term run-offs in rivers. There is interchange between surface and ground water which occurs in many places, where for much of the time, the surface flow is totally absorbed by the cavernous and highly pervious karstic limestone, or the flow is augmented by springs. With ground water being the major exploitable resource, some 96% would emanate from the limestone aquifers, and only 4% from the alluvial aquifers. Approximately a quarter of the island is comprised largely of igneous and alluvial geology with poor potential. Elsewhere the predominance of limestone aquifers indicates high ground water potential

where this is not limited by topographical constraints.

Water quality is generally satisfactory. Surface waters are invariably of good quality for irrigation, although increased deforestation is causing high sediment loads. Due to the predominantly limestone aquifers, ground waters are normally of suitable quality with respect to salinity and alkalinity, but in certain coastal areas, particularly on the coastal strip of the Clarendon Plains where pumping is excessive, sea water intrusion has become serious and there is high sodium content.

Climate and river flow data are sparse generally, but groundwater data are more comprehensive. On certain rivers, automatic gauging stations have been established and are maintained by the Underground Water Authority.

The principal irrigated areas lie in St. Catherine, Clarendon and St. Elizabeth (Pedro Plains) along the south coast. They contain fertile alluvial soils, and are some of the most productive in the country. It is estimated that some 36,100 hectares of land are supplied with water from the irrigation systems. However, due to deterioration of intakes, wells and distribution systems, only some 25,700 hectares are currently irrigated, of which about 22,000 hectares receive water regularly.

2.3 Constraints to Efficient Irrigation

There are a number of serious constraints to the operation of an efficient irrigation system. These are as follows:-

(i) Inadequate budgetary allocation is one of the main problems affecting irrigation efficiency. This is compounded by the very high cost of electricity for pumping. It has also become necessary to separate a significant number of maintenance employees from their jobs. Because of the inadequacy of budgetary support, systems continue to perform marginally until breakdown, at which time repairs are usually carried out utilizing capital rather than recurrent funds. In each of the systems using ground water, there is at least one well out of operation.

(ii) Authority staff responsible for system operation and maintenance may not have had sufficient technical background and experience to plan effective maintenance nor in the case of water wells to practice preventative maintenance.

(iii) Most of the Authorities suffer approximately 20% water loss, and because of this, as well as silting and weed growth of the open canals, 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.

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.

With the continuous flow method for on-farm delivery, the method is simple but highly inefficient. Farmers do not 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 and water applied is normally unrelated to the soil moisture deficit. Although irrigation and drainage are integral parts of any water delivery system, drainage is generally ignored in all of the public irrigation systems. Consequently, in the lower Clarendon Plains, over irrigation has led to a serious soil salinity problem due to high water table.

In an effort to address these problems, Government is now undertaking a programme of rehabilitation under the Second Sugar Rehabilitation Project, partially funded by the World Bank. Following the redesign of the project during course correction, it was decided to undertake a number of irrigation related activities in Clarendon, one of the main areas served by irrigation. The activities included: rehabilitation of irrigation infrastructures (wells and canals); training of irrigation operators; provision of agricultural/irrigation extension services including demonstrations and formation of water user groups; and improved water distribution and cost recovery in the Mid-Clarendon Irrigation Scheme.

Some achievements have already been recorded under the redesigned project. Approximately 3,352 metres of distributaries have been lined and rehabilitated and nine (9) wells are in the process of being rehabilitated. Under the remaining programme, some 30 training sessions over the period October 1992 to June 1993 will be held for groups of farm managers, owners and operators, irrigators, canal attendants and pump attendants.

The training topics include crop water requirements, irrigation practices, land development and preparation, drainage and leaching, water measuring devices, agronomic and financial topics as well as the management of aquifers and the operations of wells. Lecturers are drawn from professionals in the Sugar Industry Research Institute (SIRI), the National Irrigation Commission (NIC), the Underground Water Authority (UWA), the Rural Agricultural Development Authority (RADA), and the staff of Monymusk Estate. Four (4) demonstration plots with long furrow irrigation on farmers fields will also be established with sugar cane on a large and small farm; and mixed crops on both a large and small farm.

The NIC is in the process of compiling lists of all water users in the area as well as their water demands and a computer model is being developed to plan the optimal water distribution. In addition, the NIC is preparing maps showing each farmer's property and the location of the farm turn-out. The irrigation training sessions are used to identify groups of water users by distributary and their potential leaders with a view to later formalizing groups and delegating to them water management functions.

As a concomitant to the rehabilitation being undertaken in the irrigation systems, new irrigation water charges are also being introduced. This will include the payment of both rates and dues, including a modified rate structure which includes a combination of a basic charge per hectare of irrigable land and a variable rate per cubic metre/hour of water received. It has been recommended that the new water charging system be introduced in October 1993, and that water

rates and dues that recover the full O & M costs be introduced in the rehabilitated area in May 1994.

2.4 Inadequacy of Farming Technologies

As can be seen from the above discussion, there is much need for improvement in the use of irrigation water. Water is a very important requirement for the production of crops and livestock since in many cases, water constitutes some 80% of the cells of plants. However, sometimes water like other inputs can be destructive to production if too much is used. Irrigation is therefore a means of controlling water for use in agricultural production. Irrigation methods vary, but in Jamaica the more important ones used are i) flood irrigation and, ii) drip irrigation.

It is of critical importance in the use of irrigation that an improved farming technology be utilized. This should include i) proper drainage conditions, ii) improved water holding capacity of the soil, iii) proper use of chemicals (e.g. fertilizers and pesticides). There should also be sound knowledge of the quantity of water needed by the plants. If these requirements are not met, the use of irrigation could prove to be detrimental rather than beneficial. In Jamaica there is clearly great potential for increasing farming technology, particularly in the area of drainage, since it has been mentioned previously, that drainage is often an ignored component of the irrigation/drainage equation.

3. CONSTRAINTS RELATED TO LAND TENURE

It has earlier been indicated that the overwhelming majority of the approximately 150,000 small farmers in Jamaica are concentrated in the hillsides, often in very steep areas. As a result of over-intensive use of these hillsides, it has also been indicated that massive erosion of the soil and related consequences have taken place. In comparison, the lands on the plains are often very extensively utilized, in many cases for pasture. In addition a review of the data related to land distribution shows that while 81.40% of farms are less than 2 hectares, they occupy only 15.7% of land in farms, while at the other end of the spectrum, only 2% of farms are 200 hectares and over, yet they occupy 44.4% of land in farms (Table 1).

Because of these disparities, 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 programmes including land lease schemes; integrated rural development programmes with settlement components; pioneer farms for landless youths; and more currently land divestment programmes.

Land settlement programmes in Jamaica involve the sub-division of government land for settlement by farmers on a freehold basis. The first planned land settlement programme was in 1895 and had objectives which are similar to those of the present divestment programme; namely the improvement of living conditions by creating owner-operated farms, bringing idle lands into production, and reducing the misuse of public lands by squatters. The beneficiaries of these programmes, mainly small farmers, are allowed to pay for the property over an extended period of time, usually 25 years, so in effect they receive an interest free loan for that period of time.

Needless to say, these land settlement programmes have been severely criticized over the years, because of the basis on which land is

distributed. Land is intended 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 in which the land is located, are not bonafide farmers, and have no intention of cultivating the land. Instead, the land is held for speculative purposes or to pass on to children. This of course poses a serious constraint to agricultural development, since land is such a limited resource. Sometimes bonafide farmers are given the land under one political administration but are 'thrown off' by another administration when it takes office, the land then being given to supporters. This often creates great uncertainty and insecurity and again poses a serious constraint to long term development on the land. The Public Accounts Committee of Parliament is now debating this issue and recommendations have been made that land should be divested by a non-partisan committee. It is doubtful, however, that such a recommendation will be accepted.

The present Administration which took office in February 1989, has accorded the highest priority to the land divestment programme, as a matter of fact, it is ranked as the first priority programme of the Ministry of Agriculture. In its policy statement, the Government said that increased land divestment would be a paramount policy. It would be implemented on the basis that land idleness (estimated at 40,000 hectares) must be substantially reduced in order to increase production. The Administration has divested a total of 4800 hectares of land to 3,000 farmers since it took office, and another 4,000 parcels or lots are almost ready for distribution. The average lot size is 1.6 hectare which is considered to constitute a viable unit. It should be noted, however, that in some instances lot size is restricted to a house plot.

3.1 Land Titling

Between 1929 and 1978, it is estimated that a total of 56,465 small farmers received land. Of these, however, less than half had received titles. Several factors are responsible for this. These include governments' failure to build the roads and water mains legally required by the Parish Councils and without which titles cannot be issued.

Both the previous and present Administration have recognized the critical importance played by titling in agricultural development, since in Jamaica, experience has demonstrated that investment in agriculture depends fundamentally on security expressed in the form of a legally acceptable and socially recognized document, which farmers have as their right to possess the land they bought or inherited. In addition, security of tenure is in most cases a prerequisite for investment in long-term perennial crops which is so vitally needed in the denuded hillsides. Land tenure problems also aggravate land use management particularly with respect to forestry.

As a consequence, a Land Titling Project was implemented in 1988 with the financial assistance of the Inter-American Development Bank(IDB). The objective of the project is to develop the required infrastructure on land settlements which will make it possible for titles to be issued. To date, a total of 9,880 titles have been issued and an additional 2000 will be issued over the remaining life of the project. Since many of the farmer beneficiaries are of a very advanced age, it is questionable whether the project will have the desired impact of generating additional investment at least in the short run.

3.2 Other Tenure Problems

There are other tenure problems which are not related to the land divestment programme. In order to discuss these it is necessary to present information on the land tenure system legally utilized in Jamaica. The system recognizes an absolute right to ownership in land similar to that enjoyed in personal property. Complementary to absolute ownership is an absolute right to alienation subject only to equitable interests (e.g. easements, mortgages, etc.). Land is held either under a system of centrally registered title or under a common law system where title is traced from one to another. Registration of land title is based on the Australian 'torrens' system and registration is not compulsory. Apart from freehold tenure, persons occupying land may hold leases under the Registration of Titles Act, as tenant at common law or under the Agricultural Small Holdings Act or as squatters. In general, squatters have no right or interest in the land save as such rights may be acquired under the Limitations of Actions Act. In addition to the Registration of Titles Act there is the Facilities for Titles Act 1955. This Act provides that someone applying for a loan from an approved lending agency, but who is unable to show title under the Registration of Titles Act or Title at Common Law may adopt the procedure in the Act to establish his ownership by alternate means. The procedure requires the verification of the rights of the applicant by neighbouring owners, tax and/or rent receipts, any documents relating to title and that a complete statement of particulars supported by statutory declaration be submitted to the agency. If the agency is satisfied by the above and intends to make the loan with the land as a security, the notice of application must be advertised in accordance with the provisions of the Act.

There are a substantial number of farmers (estimates range between 20 to 35 percent) who are unable to claim proof of ownership under either the Registration of Titles Act or the Facilities of Titles Act. This is so for a number of reasons, one of the major ones being what is referred to as 'Family Land'. This is land which a farmer might leave to all his children. Most of the children do not show any interest in the land, but should a sibling decide to invest in the land, it immediately becomes a serious legal problem. It is estimated that the majority of cases which go through the courts is related to this matter. This therefore poses a serious constraint to agricultural development.

3.3 Rented or Leased Land

Tables 2 and 3 show the different arrangements under which farmers operate land, - owned, rented, leased under 5 years, leased 5 or more years, rent free, squatted and other. It appears from the Tables that the overwhelming amount of land is owned (although this does not indicate possession of a title) it is also difficult to draw any meaningful conclusions from the information presented because 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. The reason for this is usually proximity to dwelling or the use to which the land can be put. Where land is operated under a lease or rental arrangement it poses a constraint to development since these lands are usually only used for the production of short term crops for which the land might not be suitable.

3.4 Institutional Arrangements Related to Tenure

The major institutions involved in the divestment of land are the Lands Department of the Ministry of Agriculture, the Agricultural Development Corporation (ADC) - an Agency of the Ministry , the Technical Department of the Ministry, the Survey Department and the Rural Agricultural Development Authority (RADA). There is often a great deal of confusion and overlap between Departments as to where responsibility lies for a particular action. The Commissioner of Lands is a 'Corporation Sole' legally but administratively reports to the Permanent Secretary of the Ministry. This creates many problems. In addition, there is no one 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.

In relation to land titling, the main institutions are a Project Management Unit located in the Ministry of Agriculture, the Titles Office, the Lands Department and the Survey Department. There are many problems involved in receiving a title in Jamaica, due to the inadequacy of staff and facilities at the Titles Office. The inadequacy of staff is related to uncompetitive salaries for lawyers and other staff. The problem of facilities is being addressed under the Land Titling Project which is rehabilitating the office of the Lands Department, the Survey Department and the Titles Office. Improved equipment will also be provided. There seems to be no immediate solution to the problem of staffing.

4. CONSTRAINTS RELATED TO SUPPORT SERVICES AND AGRICULTURAL CREDIT

4.1 Background

The Agricultural Sector in Jamaica contributes only 5.2% to GDP (1991 constant prices). Not withstanding this, 26.8% of labour is employed by the sector indicating low productivity. Sugar and banana are the third and fourth largest exports of the country following tourism and bauxite/alumina. There is a dual agricultural system. At one end of the spectrum there is a small number of large (200 hectares and more) and medium sized (10-200 hectares) commercial operations. At the other end, there is a large number of small farmers who practice a combined subsistence and cash crop system. The larger farms are usually located on the plains, while the majority of the small farmers are located in the hillsides often on steep slopes. The Ministry of Agriculture estimates that in 1992, there were some 192, 500 farmers. This recent estimate was arrived at by extrapolation of data from the 1982 and 1989 updated Farmers' Register; the number of lots distributed by the Government and estimates of subdivision of large tracts (Table 4). (In 1978 the time of the last agricultural census, 180,000 units were reported). The large farms are better managed, have access to guaranteed markets and credit, can pay for their own research and extension and can employ security firms to protect them against praedial larceny. By contrast, small farmers suffer from inadequate management, infrastructure, research, credit, and extension and are subject to fluctuations in market demand.

Although Jamaica is a small country, there is a wide range of micro climates which make it suitable for the production of a wide variety of crops. Crops are classified into export crops mainly sugar, bananas coffee, cocoa, citrus, pimento, and domestic crops or 'non-traditionals' of which there are over fifty including roots, tubers, fruits, vegetables, legumes, and condiments. Crop yields in Jamaica are

generally lower than those in neighbouring countries, by up to 30%. This is due to the lower level of technology being adopted. Livestock is also important. In 1991, 16,000 tonnes of beef were produced and 53,000 tonnes of poultry meat. Production of pork and goat's flesh is also significant. There is both a marine fisheries as well as a significant aquaculture industry.

4.2 Constraint to Agricultural Development

As mentioned above, agricultural yields are generally low. Several factors contribute to low productivity, including: (i) the absence of an alternative technology which would be more productive; ii) an inadequate extension service; (iii) an ageing farm population which does not easily adopt to improved technology; (iv) wide spread lack of irrigation and consequent dependence on rain-fed agriculture; and (v) inappropriate land use particularly in the watershed areas. In addition the national resource endowment is limited since only 144,000 hectares are suitable for agriculture, with few or minor limitations. Another 239,000 hectares is considered useful for agriculture but with very strong limitations due to steepness of slope, poor drainage and other unfavourable conditions. The land distribution system is skewed as previously reported and there is a complex land tenure system including titled ownership, family ownership, a range of lease and rental arrangements, and squatting. This is further complicated by the fact that the average farm size in the hillside is too small to be economically viable.

4.3 Agricultural Research

The agricultural research system is in need of reorganization and requires clearly defined programmes and priorities as well as an appropriate institutional structure. At the moment, agricultural research is fragmented with a number of institutions and agencies involved. This includes the Ministry of Agriculture's Research and Development Division; the Caribbean Agricultural and Research Development Institute (CARDI); the University of the West Indies (UWI) and a number of Statutory Organizations such as the Sugar Industry Research Institute (SIRI); the Coffee Industry Board (CIB), the Banana Board, the Cocoa Board (CoIB) and the Citrus Growers Association (CGA).

Up to now the Research and Development Division of the Ministry of Agriculture has had the major responsibility for research. This Division is headed by a Director who is responsible for five research stations which are scattered throughout the island. The main centre is at Bodles, St. Catherine, which was constructed with Inter-American Development Bank (IDB) funding, but has never been properly staffed or utilized. There is an establishment for 84 professional staff but only 21 are currently in place. The Research and Development Division is badly affected by inadequate budgeting and it is fair to say that very little research work is being done. CARDI, the U.W.I., and the Statutory Bodies undertake specialized research which does not include mixed cropping research particular in relation to appropriate farming systems for hillside farms.

There is general consensus in Jamaica that research work is inadequate and unless this is improved the poor performance of the sector can be expected to continue and in particular, the small farmers who operate in the hillsides will continue to demonstrate low productivity and be condemned to a life of poverty since the present research system has failed to develop an alternative technology. As a consequence, a number

of studies have been undertaken in relation to the establishment of an appropriate institutional framework. One view is that research should be under the umbrella of a private institution while another view is that the Government should retain overall responsibility. The debate has been intense and protracted and unless resolved quickly, a further disintegration of the research services can be expected.

4.4 **Extension**

When the present Administration took office in 1989, it undertook a review of the Extension Services and concluded that they were at their lowest level ever. A decision was taken that if a radical turn around was to take place in the agricultural sector, a number of changes would have to be effected namely: i) emphasis should be placed not only on the development of the farm but also on the development of the farm family, (ii) an integrated rural development approach should be adopted and (iii) the institutional framework within which the programme was to be implemented should be removed from the central civil service arena and housed within a suitable statutory framework. As a consequence, the Government established the Rural Agricultural Development Authority (RADA) with the following functions:

i) the provision of technical extension advisory services;

ii) training and development of extension personnel;

iii) the administration of farmer training programmes;

iv) the mobilization of agricultural credit and inputs for small farmers;

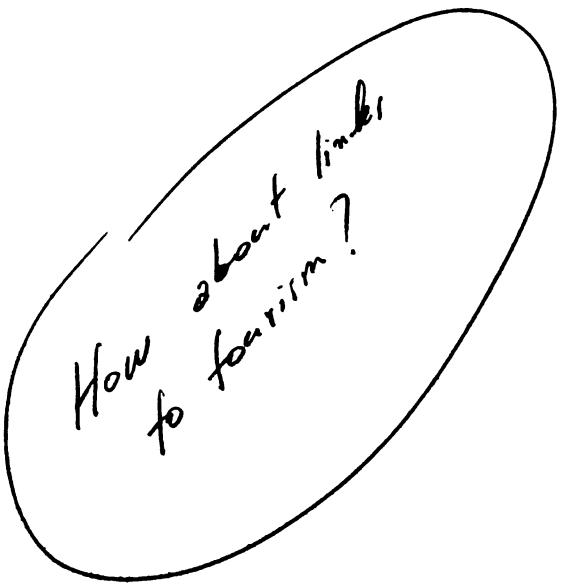
v) assisting small farmers in organizing co-operative marketing and disseminating timely market information to farmers;

vi) developing and operating rural agricultural service centres at strategic locations;

vii) liaising with agricultural research organizations with a view to providing the research delivery link to small farmers;

viii) providing a channel for the free-flow of policy inputs from the bottom upwards, and for the implementation of policy decisions from top downwards.

Today, three years after the establishment of RADA, there are mixed reactions to its establishment. 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 a large budgetary reduction. As a consequence, RADA has had to develop a different strategy focussing on only 20,000 farmers in the principal production areas. In addition extension work is now being undertaken on a group basis rather than an individual one. While the problem of mobility has been improved somewhat it still remains a serious constraint. There is also consensus that the existing inadequate extension service is not properly coordinated with research and development programmes to allow it to act effectively as the agent for the transfer of technology to small farmers.



4.5 Training

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 government and permission is readily granted for them to avail themselves of these opportunities. A major problem results, however, because staff are not bonded to return to the institution from which they came but rather to the country. It is proving extremely difficult to retain the services of staff who have received specialized training. In relation to training of farmers, the programme 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 programmes.

4.6 Production Problems

Production is affected by a number of serious constraints. There is widespread fragmentation of land holdings, which together with inappropriate selection of crops, has contributed to low yields and high unit production costs. In general farming systems used by small farmers do not contribute to efficient production because of cultivation of too many crops in the system. This is exacerbated by the very high costs of production inputs including fertilizer, pesticides and other chemicals. Poor road conditions and consequential high cost of transportation makes the cost even higher. Consequently use of production inputs is inadequate and sometimes they are totally unutilized. Dependence on rainfall is also a serious problem constraining production.

4.7 Agro-Industrial Links

Linkages between agriculture and the manufacturing and processing sectors have been slow to materialize, although the potential exists for considerable expansion of agro industry to serve both the domestic market including the tourist sector, and export market. Strategies are required to encourage greater integration of agro industrial operations with the production of local raw materials in order to ensure a more consistent flow of fresh produce to such enterprises; increased production of agricultural products at affordable prices for processing and the expansion of agro-industrial operations.

4.8 Marketing

There has been general inefficiency in the domestic marketing system, due largely to inadequate market intelligence, insufficient information dissemination and a poor distribution system. This has contributed in many cases to heavy post harvest losses and to artificial gluts and shortages with corresponding fluctuation in prices. Both these factors seriously inhibit increased production. A survey carried out in 1992, by Data Resources System International for the Ministry of Agriculture, came to the conclusion that 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 produce. There is a clearly expressed need for improved marketing and infrastructure including storage and transportation facilities. The survey showed that formal, highly organized methods of identifying buyers and suppliers of fresh produce, including the use of mass media and the activities of government institutions are not well established. Added 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. Exporters for example, were the only group reporting that the AMC was playing a satisfactory role with respect to their operations. This is logical since the AMC focuses on the provision of sorting and packaging facilities for exporters. The other groups - farmers, higglers*, processors and institutions were generally ignorant of the role of the AMC.

It is important to note that farmers and higglers consider wholesale purchasing, transportation and storage, and the provision of information on prices and supply as suitable roles for government agencies. However, only in respect of providing information was there an across the board agreement between farmer, higgler and other wholesale buyers

on a strong role for government. These perceptions should be taken into account in making improvement to the current methods of buyer- seller interaction.

4.9 Credit

The Agricultural Credit Bank (ACB) is the major institution involved in making loans for agriculture. The Bank does not lend directly to farmers but wholesales to commercial banks for unlending to commercial banks and to the Peoples Co-operative banks (PCB) for unlending to farmers. The Bank was established to (i) consolidate the various public sector credit programmes under one agency; (ii) encourage commercial banks to retail agricultural credit; (iii) attract international funding for the agricultural sector and (iv) develop PCBs.

Some success has been achieved in improving the delivery of credit through the AC Bank system. However, experience of credit programmes for small farmers indicates that their access to this credit is frequently hampered by: (i) their inability to meet collateral requirements; (ii) their concern that credit conditions are too stringent and (iii) a perception that payment schedules are too burdensome .

4.10 Interest Rate

The subject of interest rate has become a critical subject since the linking of interest rates for agriculture with the treasury bill rate. This was done very reluctantly by the Government as a conditionality of the Agricultural Sector Adjustment Loan (ASAL) financed by the World Bank and the IDB. By April 1992 under this regime interest rates reached a high of 50% for commercial farmers and 34% for small farmers. In 1991 there was a decline of 67.2% below the commitment of 1990 - the lowest level since 1986(Table 5). The 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 impact of high interest rates for agriculture was aggravated by fiscal and monetary policies prevailing in the macro economy which made it easy for depositors to make large profits on Treasury Bills (TBs) and Certificates of Deposit(CDs). Given all the problems affecting agriculture it has proved much more attractive to invest in risk free, high profit areas. While there has been some adjustments to the macro economic policies with consequential lowering of rates for T.Bs. and C.Ds. investment in the equity market is still very attractive and competes for funds with both manufacturing and agriculture. The fall in

the T.B. rates has resulted in the fall of agricultural rates to 25% for small farmers and between 32 to 37% for large farmers with effect from January 1, 1993. While there are still criticisms that the rate is still too high, there has been a marked increase in inquiries to the ACB. There is no doubt, however that the interest rate issue will have to be monitored carefully since it could well prove a unsurmountable deterrent to agricultural development.

4.11 Institutional Co-ordination of Agriculture

The Ministry of Agriculture is the main institution servicing the agricultural Sector. Within the Ministry there are four functional groups - Planning and Evaluation; Financial Administration; Research and Development, and Technical Services. Directors for these areas report to the Permanent Secretary who is the accounting officer of the Ministry. The Minister of Agriculture who is the political head is responsible for policy and is supported by two deputies.

The structure of the Ministry has been subject to fairly frequent restructuring in the past, and is subject to even further changes given the tight budgetary situation and the uncertainty about research. In addition to the Ministry, RADA, a Statutory Organization is responsible for the implementation of the policies of the Ministry through 13 decentralized RADA offices across the country. There has been much discussion relating to the efficiency of the operations of the Ministry of Agriculture, given the fact that its chief implementing arm - RADA is a separate Agency. Attempts have been made by the Minister of Agriculture to reduce the possible negative impact of this by instructing that the RADA Head Office remains within the compound of the Ministry. Co-ordination, nonetheless appears to be less than adequate between the two Organizations and some adjustment will have to be made in the near future.

In addition to the Ministry and RADA, there are the Agricultural Development Corporation (ADC) with responsibility for commercial activities; the National Irrigation Commission (NIC) with responsibility for the management, operation, maintenance, and expansion of all existing and future irrigation systems and schemes; the Commodity Boards for sugar, coffee, cocoa, a number of banana related Organizations including the Banana Board, the Banana Export Company (BECO), and the All Island Banana Growers Association (AIBGA). There is also a Citrus Growers Association (CGA). This multiplicity of organizations does present some problems for co-ordination of the activities of the sector. In many instances, the Chairman of the Boards of Statutory Corporations do not liaise closely with the Permanent Secretary, but reports directly to the Minister of Agriculture. This can sometimes lead to serious administrative problems. The problems of centralization and decentralization will be discussed in the next section.

4.12 The Role of Other Public and Private Institutions in Agriculture

There are a number of major public and private sector agencies as well as quasi-public ones which interface closely with the agricultural sector. The major public sector bodies other than the Ministry of Agriculture are the Ministry of Finance and Planning , The Ministry of Tourism and Environment and the Planning Institute of Jamaica. The major private organization of farmers is the Jamaica Agricultural Society (JAS) The quasi-public organizations are the statutory boards including:- the Sugar Industry Authority (SIA) the Coffee Industry Board (CIB) the cocoa industry Board (CoIB) the Citrus Growers Association

(CGA) and a nubmer of banana affiliated agencies such as the Banana Board, the All Island Banana Growers Association (AIGBA) and the Banana Export company (BECO). A brief description of each is given below :-

4.12.1 The Ministry of Finance and Planning

This Ministry has responsibility for monetary and fiscal policies and is also responsible for national planning and monitoring of projects thorugh the Planning Institute of Jamaica and the Project Analysis and Monitoring Company respectively.

4.12.2 Commodity Boards

The commodity boards have responsibility for sugar, coffee, cocoa, and pimento. These boards provide a number of services to their respective industries including extension, research, marketing and in some instances credit and crop insurance. The Citrus Growers Association and BECO also provide similar services.

4.12.3 The Jamaica Agricultural Society (JAS)

This Organization assists small scale farmers by providing marketing, agricultural credit, education, and training services. Several Co-orperatives or Federation have been formed under its auspices, including the Jamaica Coffee Growers Federation, the Cocoa Growers Co-orperative Federation, and the JAS Cattle Insurance Co-orperative Society. The JAS has more than a thousand branches and some 115,000 members - the majority of the farming population. The JAS has many problems at present and it is not as active an organization as it was at one time, with many of its branches either not functioning or functioning at a very low level. The organization suffers from a serious financial problem and this has been exacerbated recently with the reduction of its subvention from the Ministry of Agriculture. The organization has been charged by the Ministry to become viable and independent.

4.12.4 Institutional and Financial Constraints

The institutional constraints affecting agriculture are related to overlapping of functions between agencies and lack of co-ordination in the case of others. All public institutions are constrained by budgetary inadequacy and inability to attract and retain qualified staff. Financial constraints other than those affecting institutions are related to shortage of capital for development purposes, the paradox being that the ACB has large sums of money available for lending to farmers which is not being utilized sufficiently.

5. THE ADVANTAGES AND PROBLEMS OF CENTRALIZATION OF SUPPORT SERVICES

5.1 Introduction

Apart from the Ministry of Agriculture, RADA, AC Bank, and the PCBs, the Commodity Organizations are the major providers of support services - research, extension, input supply, marketing, and sometimes crop insurance. These services are provided by the Cocoa Industry Board (CoIB), the Citrus Growers Association (CGA), the Coffee Industry Board (CIB), the Sugar Industry Authority (SIA), the Sugar Industry Research Institute (SIRI), and a number of banana related Organizations including the Banana Board, the All Island Banana Growers Association (AIBGA), and the Banana Export Company (BECO). It should be noted that the support services to farmers suffer not so much from centralization or decentralization but rather from duplication and fragmentation as is the case in relation to both research and extension. It should also be noted that centralization is not a critical issue given the small size

of the country. Rather the problem relates to inadequacy of funding to service the farmers effectively.

5.2 **Disadvantages of Fragmented Extension System**

The support services provided by the Ministry of Agriculture and the Commodity Boards are targeted principally at small farmers. Apart from the Ministry of Agriculture which does generalized extension work all the other organizations provide specialized extension services, focusing on the crop for which they have responsibility. However, as has been mentioned previously, small farmers rarely engage in mono-cropping. Instead, they practice a farming system which accommodates as many crops as is physically possible. This means that the information provided by separate Agencies is often of limited value to the farmers since they do not share the same objectives as the respective Commodity Organizations. For example, fertilizer provided by the All Island Banana Growers Association (AIBGA) might be utilized on other crops for which the fertilizer might not be suitable.

In addition, it has to be questioned whether it is cost effective to have so many Agencies providing the same services, none of them being able to do so adequately. This is particularly the case with extension. While the establishment of one extension service providing appropriate technology for the mixed farming systems practiced by farmers, in a more effective and cost efficient manner does not appear feasible at this time, the possibility has to be explored in the not too distant future.

5.3 **Disadvantages of Fragmented Research System**

In relation to research the present system is fragmented and while it would be perhaps more effective to have a central research agency, this does not appear to be feasible at the present time. Instead, it might be more pragmatic for the Commodity Boards to continue doing research related to specific crops, while the Ministry of Agriculture concentrates on research on an integrated farming system for the hillsides. All the Agencies could be co-ordinated by a National Research Co-ordinating Committee which would have responsibility for planning and co-ordination.

5.4 **Disadvantage of Centralized Input Supply System**

A decentralized input supply system appears to be more effective than a centralized system would be. When services are centralized, the logistics of transportation and administration can become a major deterrent to production, since some areas where roads are bad and transportation unreliable, could actually be completely cut off from the necessary supplies. When the Commodity Organizations are involved however, there is greater possibility that their distribution outlets will be located in the areas in which the specific crops are located. The RADA field offices can also serve as distribution outlets to a certain extent.

5.5 **Advantages of Centralized Credit System**

The policy of Government is that agricultural credit should be disbursed by one organizational system and that this is the ACB/PCB network discussed previously. The reason is that before the establishment of the AC Bank 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 in that farmers would take the cheapest loans available for development of the associated crop, which was not necessarily the crop for which they had

the greatest comparative advantage. The present system of a central development bank and a decentralized network of co-operative banks seem adequate to ensure wide spread coverage of farmers.

5.6 **Advantages of a Centralized Market System** Add the title

The marketing of domestic crops of which there are over fifty, is very decentralized and disorganized. There are many problems related to this system which results in artificial gluts and shortages, and distortion of prices. 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 much more centralized and organized since each crop has an Agency which deals with this. This has proved to be an incentive for many small farmers to produce these crops. Except for sugar, however, which has not yet been privatized, all the other export industries have been deregulated so that farmers are no longer obliged to sell their crops through these Agencies, but can now sell to exporters who meet certain criteria. 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 relation to coffee, the concern is related to severe price undercutting and to the unreliability of certain traders. The Commodity Organizations were established in the 1940s to reduce the impact of these problems and to bring stability to the industries involved. The situation in Jamaica with respect to the deregulated marketing of specific export crops will have to be closely monitored over the next few years in order to ensure that there is no return to the chaotic situation of the 1940s.

6. WOMEN DEVELOPMENT CONSTRAINTS

6.1 **Background**

The Government recognizes that sustained progress in the economic and social development of Jamaica including - improved growth and productivity, more equitable income distribution, and improved education, health and nutrition - necessitates the full participation of the women of Jamaica. The Government also recognizes that many women are the sole bread winners of 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. Many women who are not heads of households also undertake substantial responsibilities for contributing to household support. The Government has therefore adopted a policy statement to re-affirm its commitment to women's development and has directed all Ministries and Agencies of the government to implement this. (Annex 3) The policy is set out below:-

- All policies of the Government must reflect a full recognition of the equal and complementary partnership of women and men.

- Economic and social development policies and programmes must provide for equality of access to resources by both women and men.

- In policy planning, special consideration must be given to women's multiple responsibilities, both as income earners and in the household. In particular,

policies must take account of the high proportion of women of all ages who are single parents and sole supporters of their families.

- Special measures must be developed to compensate for historic and current disadvantages experienced by women.

6. WOMEN DEVELOPMENT CONSTRAINTS

6.1 Background

The Government recognizes that the development of approaches and measures to implement these policies will require a continuing process of review and evaluation. Permanent Secretaries in all Ministries will be responsible for the implementation of the principles and immediate goals of the Policy Statement as they relate to their own Ministries. Policy Statements aside, what is the reality of the situation regarding women? Statistics published by the Bureau of Women's Affairs in 1992 indicate that females in Jamaica represent 51% of the population; 46% of the labour force; do at least 85% of the unpaid labour in the home; represent 99% of the minimum wage domestic workers; heads 42% of the 500,000 households in Jamaica and experience unemployment rates as household heads at twice the rate of men (almost 9,000 male heads versus 22,000 female heads are unemployed).

6.2 Employment

The unemployed labour force is made up of 68% females and 31% males. Unemployment decreases with age for both sexes, but is at critical proportions for young women between 14-24 years.

6.3 Wages

Domestic work is done mainly by women (99%) who are paid the minimum wage rate which is now set at $300.00 per week. A gardener for a half day's work can earn two times that of the domestic worker for a full days work. Female wage labour is also under-valued in the agricultural sector, where 'days' work for men attract a higher rate than that for women ($40.00 compared to $30.00 in 1990, were the customary wages). Casual daily rates for employees in Government's Salary Classification Schedules still indicates 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.

6.5 Role of Rural Women

Rural women have played and continue to play a very important role in agriculture. Their importance might be underestimated by the fact that while a woman and her husband might own the farm jointly the legal title might be in his name only. It is important to note that the law does not prevent women from having their names on titles, owning property or accessing loans. In reality however, the women might be willing to accept a 'background' role and allow her husband to play the major role, even though he does so with her advice and support. The 1978, Census of Agriculture found that 19.4% of all farms were operated by women. Of these, 39% operated farms of less than 0.4 hectares. Although the total number of landless farmers is low, the census records that 40% of them were women. Women also work as agricultural labourers performing such manual tasks as weeding, harvesting, assembling, transporting, cleaning, grading, and packing. While there are no jobs which are clearly defined as women's jobs, there is however, usually some differentiation in

roles. Men are usually involved with land preparation, planting, and weeding, while women's major responsibilities are for reaping and marketing.

The Ministry of Agriculture has had some difficulty in articulating the needs of women in agriculture. This is so because the Ministry has portfolio responsibility, for a production sector and not just for a gender. It is difficult to argue that women farmers need more water, fertilizers and access to land than do men. This situation is changing somewhat, however, and the Ministry is now seeking to develop areas which might be specially suitable to women such as cottage industries and agro-processing. It is clear, however, that such programmes are of minor significance and are not at the expense of large non-gender projects. The Bureau of Women Affairs itself is finding out that there are problems in seeking to differentiate the needs of men and women. For example, a separate Five Year Development Plan was developed for women. The Bureau is now redoing this because it has found out that, that approach is not leading to increased development for women. Greater recognition is now being given to the need for training of women, particularly young women in all skills, providing guidance on lifestyles and on family values, teaching women to limit the size of their families, teaching them their legal rights to ownership of property and so on. It is also being recognized that rather than trying to create special jobs for women, emphasis should be placed on developing day-care centres for children, which can be used by both men and women and which will free up both to participate more fully in the development process.

7. CONSTRAINTS AND OPPORTUNITIES OF THE CO-OPERATIVE SECTOR, PRODUCERS' ORGANIZATIONS AND NGOs

7.1 Background

The Co-operative Movement has not had a very strong history in Jamaica. During the 1970s an attempt was made to establish sugar workers co-operatives by giving ownership of the Bernard Lodge, Monymusk, and Frome Estates to former workers. This move was very unsuccessful as the co-operators did not recognize the responsibilities inherent in ownership or management. In addition, they had not been prepared and trained to assume these responsibilities. The experiment had to be abandoned as production became less and less and financial losses more and more. Demise of the co-operatives struck a serious blow to the co-operative movement in Jamaica.

There are a few functioning co-operatives in Jamaica such as the Christiana Potato Growers, which buys planting material for their members as well as market potatoes. There are also a number of coffee and cocoa co-operatives which also concentrate on the marketing of crops. These however, are few and far between. It is generally accepted in Jamaica that Jamaicans are too individualistic to show much interest in co-operatives. However, it has also been accepted that co-operatives can work in specific areas such as marketing.

7.2 Producers Marketing Organizations (PMOs)

After the demise of the Sugar Workers Co-operative in the 1980s, attention was turned to the establishment and development of Producer Marketing Organizations (PMOs) in 1985. These were developed under the Agricultural Marketing Development Project a joint USAID/GOJ venture,

aimed at improving the effectiveness of domestic crop marketing. The project was intended to increase farmer income by means of increasing farmer participation in marketing. Integration of production and marketing and the improvement of produce quality were also project objectives. The idea was to encourage farmers to co-operatively assemble, grade, and package produce. After these functions were performed, it was assumed that buyers would then come to the farmers groups (PMOs) to purchase.

The implementation of the project as originally conceived has proven to be well below expectation. The original scheme called for the development of twenty-five (25) farmers' marketing co-operatives (PMOs) and four (4) sub-terminal wholesale produce markets. However, only seven (7) PMOs have been established, three (3) of which were already co-operatives before project implementation. No sub-terminal wholesale produce markets have been established. Collective integration of production and marketing has not occurred. The PMOs essentially perform a higgler function. The findings of a survey of the PMOs carried out in 1987, identified a number of strengths and weaknesses. The potential strengths were recorded as follows:-

i) PMOs may serve to increase local competition among marketing intermediaries;

ii) PMOs sometimes offer a market outlet to farmers overlooked by other market intermediaries;

iii) PMOs may serve to increase the 'Market Power' of farmers in certain areas through forward integration into export, wholesale, and retail markets;

iv) PMOs have the potential to serve as a forum to express farmers' concerns and collective action.

It should be noted that the majority of the potential strengths were not actually being realized as can be seen from the weaknesses listed below.

- the PMOs are basically indistinguishable from other marketing intermediaries in there respective areas;

- member participation and level of-operation of each of the PMOs is inadequate;

- farmer members often use the PMO merely as a market of last resort;

- farmer members generally display a lack of understanding with regard to co-operative principles and how the PMOs can assist them;

- PMOs lack the resources to design and implement production/marketing strategies;

- communication between the PMOs and their markets, as well as between the PMOs themselves, is wholly deficient, precluding co-ordinated marketing;

- transportation facilities are inadequate for PMO marketing.

Today the situation with respect to the PMOs, remain virtually unchanged. They have not yet demonstrated success and the Ministry of Agriculture still continues to promote them on the basis that it has no financial assistance to offer, and that they must become viable.

7.3 Commodity Organizations

Commodity organizations are public bodies which have been established by Government initiative using legal powers. As previously mentioned, the Organizations were set up to improve the economic position of agricultural producers and to develop the particular industry, while maximizing benefits to the country. Generally, the types of functions performed by Commodity Organizations include:

- raising the bargaining power of agricultural producers on the domestic and export markets;

- improving marketing organizations by regulating quality, packaging standards, sales practices, and setting up processing facilities;

- protecting producers and consumers against the impact of sharply fluctuating internal and external prices.

The Boards were established in the 1940s during the war years when farmers had great difficulty in selling produce. They were subject to exploitation by produce dealers and insecurity of marketing arrangements. At the other end, the importers suffered from lack of standardized quality supplies. The establishment of the Boards brought order to this situation. They were given monopoly powers in that no one could export or purchase the product handled by them, unless authorized by the Boards to do so. In fact, up to 1983, when deregulation of the functions of these Boards began, the Coffee and Cocoa Boards, Sugar Industry Authority, Pimento Warehouse (Export Division) and Citrus Growers Association were the sole exporters of their respective commodity.

Today, the situation has changed almost dramatically, particularly in relation to coffee and citrus. There is great competition from qualified exporters to procure supplies and price undercutting has become the order of the day. There are fears in some quarters that there could soon be a return to the problems experienced during the war years. Despite this, there are increasing calls from other quarters for even greater deregulation of these organizations. 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 become more attractive. They have also benefitted from higher prices as a result of devaluation. It should be noted that while these higher prices have been somewhat offset by the higher cost of imported inputs the farmers have benefitted overall.

New

7.4 NGOs

It is estimated (Gardener, 1991) that there are approximately 300 private voluntary organizations listed in Jamaica. In reality, however, there are only about 20 Non-Government Organizations (NGOs), although there is a wide group of registered community based groups which are all private voluntary organizations (Annex 4).

Many NGOs are described as umbrella organizations, which evolved out of a network of groups, community based or project oriented organizations, which have pooled resources to form an agency, which provides development support to member organizations. For example, the Jamaica Agricultural Society (JAS) is an umbrella organization for commodity organizations. The Producer Marketing Organizations (PMOs) already referred to, are seven (7) community organizations which are linked by commonality of origin and purpose. The Peoples Co-operative Banks (PCBs) are also examples of this commonality of objective and purpose. Two private, not-for-profit Foundations established during the 1980s, with assistance from the United States Agency for International Development (USAID) are particularly active in rural development. They are the National Development Foundation of Jamaica (NDFJ), and the Jamaican Agricultural Development Foundation (JADF). There is also an off-shoot of the JADF, known as JARP, the Jamaica Agricultural Research Project. These organizations operate as development banks to small enterprises, providing technical assistance, training and other services to agriculture and other small enterprise ventures in rural areas, as a non-profit service.

International donors, and funding agencies are expressing growing concern that the benefits of economic growth are not being distributed on an equitable basis. Since inequity is most often more evident in rural areas, where the majority of the poor are located, donors are most concerned about who undertakes rural development, and who are the beneficiaries. One way in which many technical co-operation agencies believe that equity can be improved is by disbursing funds through various voluntary autonomous, democratic associations, such as co-operatives, workers associations, and community based groups (FAO Working Paper on Peoples Participation, August 1989). This Paper identified the general comparative advantages of working through NGOs. These are as follows:-

- NGOs have a concern and commitment to the process of development;
- NGOs are able to deliver services, e.g. emergency relief at a low cost in remote areas, and to special target groups, which are alienated from the government;
- NGOs have experience with small scale development projects;
- NGOs can mobilize a high degree of involvement on the part of target groups.

The NGOs are not without problems, however. In Jamaica the primary concern which has been expressed, appear to be primarily associated with the nature and type of mechanisms by which collaboration could take place between the government and the NGOs in the Jamaican context. In the last decade in Jamaica, there has been 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. This has to be monitored carefully, however, since if funds continue to be channeled away from Government, and towards NGOs, these in turn will become 'power brokers' with all the negative connotations of centralization and bureaucratization, insensitivity etc. There is also a concern that since the Government is elected by the people to protect the rights of the people, that it should not abdicate its responsibilities to ensure balanced development; which could occur if too much autonomy is given to the NGOs.

SECTION II TOWARDS A STRATEGY FOR IFAD

8. A GENERAL FRAMEWORK; THE GOVERNMENT'S STRATEGY FOR THE RURAL POOR

8.1 Status of the Rural Poor

Jamaica falls in the category of lower middle income countries and its pattern of income distribution is skewed. Over the period 1980 - 1987, the income share of the lowest 40% of the population was 15.3%. In 1989 the share of the lowest 20% was reported to be only 5% compared with 49% for the highest 20%. At that time about one third of the population was estimated to be living below the poverty line of US$650 per capita in urban areas and US$600 in rural areas. As mentioned earlier, poverty is markedly more pronounced in the rural areas. The detailed Survey on Living Conditions (SLC) in 1989 showed that persons in the lowest quintile were more likely to live in rural areas, be employed as small farmers or agricultural workers, or to live in female headed households. Small farmers have a significantly lower income than other categories of workers. Poverty in the agricultural sector is largely due to the small area cultivated by a significant number of farmers, the high level of fragmentation of plots, the low level of technology utilized and the shortage of capital to purchase inputs which could increase yields. Poor roads and inadequate transportation networks especially on the hillsides, which inhibits farm input supply, crop extraction and general access, also contribute to the marginalization of some parts of the rural areas.

8.2 Causes of Rural Poverty

Poverty is caused by a number of factors, often inextricably linked to each other. In Jamaica, one of the major factors contributing to rural poverty is inequitable access to land. Since non-agricultural industries are not prevalent in rural areas, land remains the single most important factor for producing food for household consumption. In addition, it can provide surplus income for purchasing foods not produced by the household as well as non-food items. It has been previously indicated that Jamaica is a very mountainous country, and that the rural poor are concentrated in the steepest areas, except for relatively small populations who live in rural towns. Growing population pressure in the hillsides and inappropriate farming systems and technology have led to increased fragmentation and soil erosion, both of which have contributed to decreasing the level of incomes, the quality of living, and the sustainability of life. In addition, the tenure system where a significant amount of land is owned by siblings, rather than by individuals and a large number of land owners are without legal title, exacerbates the situation since insecurity of tenure can result in under-investment and under-development of farm holdings.

Access to water, credit, training, extension, and agricultural inputs (improved seed, fertilizers, pesticides, labour servicing devices), also pose a serious constraint to the development of land operated by the rural poor, thus compounding and reinforcing poverty. Poor post-harvest techniques, lack of storage facilities, poor road conditions, and high transportation cost also contribute to rural poverty. There is also a relatively small category of rural dwellers classified as landless farmers. These are predominantly livestock farmers, who graze dual-purpose cattle, pigs and goats on lands which do not belong to them. In dealing with the rural poor, this category of farmers should not be forgotten.

8.3 Policies and Programmes for Alleviating Rural Poverty

8.3.1 Land Divestment Programme

The Government's major strategy for alleviating rural poverty is through its land divestment programme. This is based on the fact that there is a substantial amount of idle land in the country which could be productively utilized if placed in the hands of persons who have demonstrated strong interest in its development. The categories of persons to be addressed under the programme include existing bonafide farmers who can be identified by an extension officer or community leader; landless farmers who are currently carrying out farming practices on lands not belonging to them as in the case of roving livestock farmers and squatters who have been farming on government lands. Women and young persons who might not be currently farming, but who have been participating in farm related programmes, either in secondary or tertiary institutions or through youth clubs, or the 4-H movement are also to be accommodated in the programme. The land to be sold to farmers or potential farmers should constitute a viable farm unit from which an acceptable level of income can be made.

8.3.2 Land Titling

As a concomitant to the land divestment programme, government is also implementing a land titling programme on lands which have already been divested to guarantee security of tenure and thus facilitate long term investment on the land.

8.3.3 Hillside Strategy

In order to deal with the critical issue of land degradation in the hillsides, Government has formulated a hillside development strategy which has three objectives:- i) to arrest land degradation in the hillsides through proper agronomic techniques; ii) more productive use of the hillsides through appropriate selection of farming systems and iii) increased income and improved quality of life for persons in these areas. To a great extent this strategy revolves around increased afforestation and development of tree crops such as coffee, cocoa, citrus, mangoes and other fruit trees for which there are lucrative export markets. The strategy also includes the provision of major incentives to facilitate and motivate farmers to produce these crops. Given the facts that the demonstrated preference of the farmer is the production of food crops; the long period required for maturation of these crops during which time the farmer would be without an income; and also, the fact that the farmer might not have title to the land and therefore would be unable to access credit; it was thought essential to provide appropriate incentives. These include the use of a crop lien in cases where marketing arrangements are considered secure and the provision of advance payments against the maturation of the crop. The existing IFAD Small Hillside Farmer Support Project embodies these incentives. Government has also been utilizing grant resources to promote a programme of hillside conservation and development. The Hillside Agricultural Project (HAP) was designed for implementation in critical watershed areas, and utilizes the innovative approach of using farmers' groups and associations to develop the project themselves. The farmers also play a strong role in the management committee of the projects developed. The projects include rehabilitation and expansion of perennial crops, soil conservation and agro-processing. The project has recently been extended from the Rio-Cobre Watershed to include all watersheds in the eastern end of the Island.

8.3.4 **RADA**

The Government established RADA as the main vehicle for revitalizing and developing rural areas. RADA has been badly affected, however, by budgetary cuts which have resulted in its downsizing and separation of a significant number of employees from their jobs. As a consequence of this, and in an effort to maintain effectiveness, the Organization has made certain adjustments to its production strategy. Consequently the major thrust of the organization is being targeted at five (5) major areas. These include:-

i) intensification of its programme geared towards placing lands in the hands of those who wish to participate in an increased agricultural production drive;

ii) extension delivery is now being concentrated on targeted areas considered to be of high productive potential. Crops which are considered important from the point of view of export potential, and those which are important staples are being given special attention;

iii) the development of a well targeted inter-organizational approach to the transfer of technology to farmers;

iv) the provision of effective marketing intelligence services to farmers.

v) the development of rural infrastructure especially roads to facilitate agriculture and rural development;

These initiatives are geared towards:-

i) farmers enjoying the economies of scale by purchasing chemicals etc. in bulk;

ii) organizing farmers for joint marketing, thereby reducing transportation cost per capita;

iii) pooling of tractors and other equipment to facilitate land preparation at reasonable costs;

iv) efficient organization of farmers to enhance efficiency in the transfer of technology;

v) vibrant inter-agency co-ordination in the field;

vi) extension delivery and the transfer of technology will be effected by RADA on a 'group delivery' basis. This means that farmers will participate in 'training days' on specified sites in groups;

vii) the mobility of extension officers will be greatly improved, thereby facilitating their capability to service a greater number of farmers;

viii) RADA will place great emphasis on development and implementation of development projects in each parish. These projects are designed to meet the specific needs of the area and include drainage, small irrigation schemes, soil conservation projects as well as production of foods crops, vegetables and export crops.

New

It should be noted that in the period during which these measures are being instituted (April 1992 to present time) RADA has achieve some level of success in the implementation of these strategies. The overwhelming problem however, relates to the fact that these benefits are targetted at only 20,000 out of 150,000 farmers - a woefully inadequate number.

8.3.5 Projects for Rural Women and Youth

The Government has stated its intentions of developing special projects for women and youth. It is important to note that this will not prevent them from participating in national projects which are not gender or age specific. These two groups are also to be given special consideration in the allocation of lands. One of the major projects targeted for women is the development of cottage industries and agro-processing. Youth are to be assisted with the procurement of agricultural inputs.

8.3.6 Micro-enterprise development

There are a number of institutions addressing the financing requirement for existing or newly established small-scale enterprises. The major ones are the Credit Unions, the National Development Foundation of Jamaica (NDFJ) and the Micro-Enterprise Development Agency (MIDA). Except for the Credit Unions, all are expressly geared to the small business sector, including agriculture and all operate country-wide.

8.3.7 Credit Delivery to Rural Poor

Government has sought to improve the delivery of credit to the rural poor through the development of what is called the Integrated Peoples' Co-operative Bank Network Strategy - IPCBN. The strategy was formulated with the contribution of CIDA, which had earlier financed a special study on this subject. A joint AC Board/AC Bank Task Force was established in 1990 to develop a comprehensive action plan to improve the credit system. The following decisions have been taken as a result of the work of the Task Force:-

i) Definition of AC Bank and Ac Board Roles

AC Board will abandon its role as a financing source for agricultural credit. It will only carry out 'regulatory functions'. In future, AC Bank would be the only source of credit to PCBs. Further it would also support the PCBs to become financially independent by providing capital and increased technical assistance and training for existing and new staff.

ii) Restructuring and Merging PCBs

The existing 109 PCBs would be reduced to approximately 20 reasonably good autonomous PCBs. These would be called host banks. Of the remaining 89 PCBs, 64 would be amalgamated with the host banks to form networks and 25 phased out. Depending on the size, the other banks participating in the network would be called satellite or window banks. The 'satellite'

and 'window' banks would retain their community based character by each having a Management Committee that would recommend the applicants for loans to the host banks.

8.4 Impact of Policy Measures, Programmes and Projects of the Rural Poor

The strategy for dealing with the rural poor is indeed comprehensive and if implemented according to plan should undoubtedly go a far way to changing positively the profile of the rural poor. Two major factors likely to affect the efficacy of the policies and programmes, however, are adequate budgeting and staffing. Unless these two areas can be satisfactorily dealt with, it is likely that the results will not mirror closely the objectives and targets. In relation to specific programmes, there are a number of likely pitfalls which every effort should be made to avoid. In relation to land divestment, every effort should be made to ensure that land does not fall into the hands of speculators who have no intention of using them for productive reasons. In addition, it should be borne in mind that land is not the only factor of production so that issues such as research, extension, input supply, credit and marketing must also be meaningfully addressed if the land divestment programme is to succeed. In relation to land titling, the programme does not address the issue of family land which is a serious deterrent to farming. Legislation might be needed to address this. In relation to the hillside strategy, it is likely that the impact will be significant. Sustainability, however, particularly in relation to the use of grant funds is not ensured and urgent consideration will have to be given to strategies for dealing with this. In relation to RADA, it would appear that shortage of funds has led to concentration on too small a group of farmers (around 20,000). Urgent steps should therefore be taken to address the remaining small farmers who constitute the majority. Also in relation to RADA, it has not been effectively demonstrated that an appropriate farming system or technology is in place for small farmers. This should also be addressed as a matter of priority. In relation to micro-enterprise development, the opportunity exists for reaching a large number of the rural poor. However, it has to be accepted that the majority of potential beneficiaries lack the basic business training required for them to succeed. To address this, the NDFJ and the Agency for the Selection and Support of Individuals Starting Trade (ASSIST) and other institutions are now providing basic business training to borrowers before any funds are disbursed, apparently with good results. The training involves record keeping, inventory control, introduction to marketing etc. Finally, in relation to the IPCBN strategy, it is imperative that it emphasizes the development and promotion of a savings programme, which should provide the PCBs with additional and crucial resources for sustaining their lending operations and would also provide a future source of equity for farmers.

9. THE LESSONS OF IFAD'S EXPERIENCE IN JAMAICA

9.1 The Small Farmers Credit Project

The International Fund for Agricultural Development (IFAD), is a specialized Agency of the United Nations, established in December 1977, to finance development programmes specifically aimed at helping the world's poorest people - the poorest of the poor. Shortly after its establishment, IFAD began dialogue with the Government of Jamaica on the development of an appropriate project for IFAD financing. Discussions were protracted and it was not until 1982 that the first IFAD project

was approved by its Board. The Loan Agreement provided for US$10 million to partially finance a Small Farmers Credit Project (another US$10 million was provided by the IDB and US$5m GOJ). The Project became effective in 1983 and closed in 1989. The main objectives of the Project were (i) to strengthen the institutional and financial framework for agricultural lending in Jamaica and (ii) to improve incomes of approximately 4,000 small farmers with holdings between 0.8-4 hectares, by providing credit, technical assistance and soil conservation practices. The components were (i) credit - US$18.5 million; (ii) assistance to supporting activities - US$5.5 million; and (iii) monitoring, evaluation and technical assistance. Originally, the project was to be implemented in four pilot areas but this was later modified to cover the entire country. The AC Bank was designated as the Executing Agency with overall responsibility for the project. Credit funds were to be retailed through participating PCBs. The Ministry of Agriculture was responsible for the technical support of the credit project through its extension and soil conservation services and for monitoring and evaluation through its Data Bank Branch.

9.2 Lessons Learned From the Small Farmers Credit Project

Two major lessons were learned from the implementation of the Small Farmers Credit Project. One related to technical aspects of the Project and the other to institutional arrangements.

Technically it was demonstrated that there were no sound agronomic or technical bases for the projected increases in yields under the project. In fact the technology which was available to farmers could only support modest increases. Consequently, the Project Completion Evaluation Report (PCER) recommended that in future the increased production capacity of small farmers should be based on a more realistic assessment of available technology. It also recommended that the capacity of the extension system in disseminating new technologies should also be carefully assessed. Provisions should also 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.

In relation to institutional arrangements a number of shortcomings were identified as follows: i) the project did not provide for any savings mobilization or other financial services which could have greatly improved the ability of the smallholder credit system in Jamaica to move towards greater sustainability. ii) inadequate attention was paid to institutional development, particularly of the PCBs as it was assumed that the institutions would develop with increased credit activities financed under the project. An important conclusion is that the development of institutional capacity required time and resources which the project did not provide for the PCBs. As a consequence while the AC Bank emerged as a strong financial institution the PCBs remained weak. iii) project monitoring should be an integral part of project management. Otherwise, as in the case of the project where monitoring was done by Ministry of Agriculture, while project management was the responsibility of AC Bank, project managers derived no direct benefits from monitoring; iv) the problems experienced between the Cooperating Agencies- Ministry of Agriculture and AC Bank suggest that only one institution should play a lead role. To avoid similar problems in the future, the PCER recommended that clear institutional responsibilities should be defined, sensible coordination systems should be put in place and financial responsibilities and flows clearly defined; v) marketing

difficulties were consistently reported as a problem, and it was clear that more attention should be directed towards linking credit and marketing functions.

9.3 **The Small Hillside Farmers Support Project**

The second IFAD funded project - The Small Hillside Farmers Support Project became effective in December 1988 but activities under the project did not get under way until mid-1989. The closing date is April 1995. The project is financed through a loan of SDR 5 Million from IFAD, a grant from the government of the Netherlands of US$ 1.42 Million and the borrowers contribution of US$ 6.1 Million. The main objectives are; i) to finance small holders with less than 4 hectares and landless/quasi landless farmers to improve their income and help reduce out migration and create employment; and ii) expand areas under perennial crops to reduce erosion through conservation compatible techniques. The project initially covers the hillside areas surrounding Kingston, comprising five watershed in three parishes; St Andrew, St. Thomas and St. Catherine.

9.4 **Lessons learned from the Small Hillside Farmers Support Project**

Based on a review of the reports prepared by project management it appears that overall the project is achieving its objectives based on the number and the volume of loans approved and the acreage developed at June 1992. The number of loans approved at June was 1,193 which was 74% of the projected total of 1606. However, the rate of disbursements to commitments continued to be low and is attributed to :- i) The fact that many farmers who had loans approved have not proceeded with the development of their farms to date; and ii) tardiness on the part of the Commodity Boards in submitting claims to the PC Banks for material supplied to farmers. A number of bottlenecks were identified as militating against successful project implementation. These were related to institutional weaknesses in a number of areas.

9.4.1 **Institutional Weaknesses**

During the reporting period the Senior Project Officers At CIDCo and CIB were changed. This and the restructuring of the CIB/CIDCo resulted in a slowdown in the extension aspect of the project which includes the delivery of fertilizers and seedlings.

In addition the management of some participating PCBs continued to be weak and posed a constraint to effective programme development. Applicants for the post of Secretary/Manager in six (6) participating PC Banks were interviewed and recommendations are to be made for the employment of six individuals. During the reporting period no progress was made in classifying the posts of Project Coordinator/Planner and Project Evaluation Officer at levels acceptable to the Ministry of the Public Service and Ministry of Agriculture.

At the end of the reporting period there were still many farmers with sub-loans at various PCBs for extended periods of time who had not proceeded with the development of their farms. This was one of the factors explaining the difference between amount approved and amount disbursed. The increased interest rates may have been a significant contributing factor to this.

9.5 **Rural Financial Services Project**

A third IFAD funded project - the Rural Financial Services Project - was approved in 1991 but implementation has not yet began since the AC Bank is in the process of putting in place the necessary conditions for project implementation. Development of the project is based on the PCER of the Small Farmers Credit Project recommendation 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) credit to the target group; and iii) strengthening of support services, primarily RADA and CIDCo. The total cost of the project is US$ 13 Million.

9.6 **IFAD/GOJ Relationship**

As a result of its intervention IFAD 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 nor to dictate to the government how it should run the country; ii) IFAD is willing to try innovative designs as in the case of the Small Hillside Farmers Project where for the first time cash advances are being given against the maturation of the crop in order to guarantee an income to the participant during the gestation period; iii) willingness to make course corrections as is the case of the Small Farmers credit Project when the size of the target group was raised from 2 to 4 hectares and when the project was extended from four (4) project areas to the entire island.IFAD's mandate of reaching the poorest of the poor however; has come into collision with market forces which has caused excessively high interest rates to put agricultural credit out of the reach of most small farmers. This has seriously constrained agricultural development and made the poor even more vulnerable. While the obvious economic solution to this is to reduce the rate of inflation and so bring down interest rates (the Government is committed to doing this, already with some success), the time might be appropriate for IFAD to consider strategies based less on lines of credit and more on seeking to resolve some of the very serious constraints which militate against the development of agriculture and the hopes of the poor to improve their quality of life. The present Rural Financial Services Project is a step in the right direction.

As can be seen from the lessons of the first IFAD Project, it is unrealistic to expect increased yields when there has been no change in technology. The second IFAD Project might well be indicating that it is futile to expect small farmers to pay high interest rates when the results might not be attractive enough to justify these. In Jamaica, constraints related to inadequate research and extension, poor roads, transportation and marketing, as well as dependence on rain-fed conditions are so massive that the efforts of the small farmer to increase production and productivity might well become engulfed in them. In Jamaica, credit programmes have almost dried up because there are too few takers and development of new projects have come to a standstill. There will be no meaningful change in this respect until the bottlenecks discussed above have been effectively removed.

10 STRATEGIC CONSIDERATIONS

Agriculture, together with Manufacturing, Mining and Construction, constitute the productive sectors of the Jamaican economy. In recent years the contribution of these sectors have been surpassed by that of the Service Sector including Tourism. Notwithstanding this, agriculture remains a key sector in the economy. Since the Government is conscious of the fragility of tourism and other services. Consequently, Government is seeking to develop a strategy which will lead to self-sustaining growth in the sector and increase its contribution to GDP. Government is also committed to increasing the productivity of the labour force in agriculture, so that it can enjoy a higher standard of living.

The Government estimates that at a minimum, the agricultural sector should be able to make a significant contribution to the country's domestic food requirements, and generate increased foreign exchange earnings through exports. Accordingly, the Government prepared a National Five Year Development Plan, 1990-1995, to move the sector forward through a range of policies and strategies aimed at raising productivity and production, and increasing the sector's efficiency and competitiveness.

10.1 Objectives of the Sector

The Government's broad objectives for the agricultural sector are designed to achieve the following objectives:-

i) increase and sustain its contribution to the general economic growth and development of the country;

ii) increase production and productivity in order to:

- make a substantial contribution to meeting the food and nutritional requirements of the population;
- reduce reliance on food imports through greater domestic food production;
- expand export of agricultural commodities to maximize foreign exchange earnings: and
- encourage agro-industrial development.

iii) improve the quality of rural life by means of higher farm incomes and by expanding rural infrastructure and services;

iv) reduce unemployment, under-employment and minimize rural/urban migration by creating increased opportunities in agriculture and related activities;

v) foster the development of appropriate technology through research and development and ensure the transfer of this technology to farmers;

vi) stem environmental degradation in general, and in the critical watershed areas in particular, and pursue development strategies aimed at achieving long-term conservation objectives and promoting the efficient use of national resources.

10.2 Policies and Strategies

The policies and strategies which have been designed to increase the sector's vibrancy and address the constraints identified, take into account such 'externalities' as the trend towards trade liberalization in the global economy, and the unification of markets in Europe and North America. The Government's major emphasis will be on the expansion of traditional and non-traditional export crops as well as on the production of selected crop and livestock products for the domestic market, both to improve food security and save foreign exchange. Small farmers will play a major role in this development programme.

10.3 The Role of Agricultural Sub-Sectors in the Economy

10.3.1 Sugar

The Jamaica Sugar Industry presently produces about 225,000 tonnes of sugar (Tables 7-11). Nine sugar factories are currently in operation, four of these are owned and operated by Government, while five are privately owned or operated. The sugar industry employs over 40,000 persons and continues to make significant contribution to Jamaica's foreign exchange earnings, averaging between US$82 million per annum over the period 1987-1991. However, the industry is characterized by high cost of production, excess milling capacity, and low levels of capital replacement. Sugar cane is produced predominantly on the plains on large holdings, but small farmers also make a significant contribution to the industry. Sugar cane is the largest user of irrigation.

The EEC is the major purchaser of exported sugar. It purchased in 1991 85% of Jamaica's exports. Under the LOME Convention, the EEC guarantees that it will buy 125,000 tonnes of raw sugar from Jamaica. The price paid is a substantial one. Should Jamaica lose the preferential status of LOME, it could have disastrous consequences for prices.

The present sugar industry is inefficient and uncompetitive. Government's strategies for improving the industry, include improvements in field and factory operations. The goal is a restructured industry which will have the capacity to produce between 260,000 to 270,000 tonnes of sugar by 1995, to satisfy the domestic and export quota markets. Government is currently engaged in divesting the public owned sugar factories and lands as part of its programme to increase efficiency.

10.3.2 Banana

The production of export banana continues to be one of the most important productive activity in Jamaica (Tables 7-11). Production had declined during the 1980s to about 11,000 tonnes although there was an export quota of 150,000 tonnes. As part of the recovery programme initiated in the 1980s, production was concentrated in the hands of three high technology commercial estates totalling 2,800 hectares. Small farmers were largely excluded from the industry, even though historically they had been important producers of the crop. They were excluded on the basis that the cost of production for the high quality banana required on the export market was too high for them. This has now changed and small farmers have re-entered production. There are now about 1,500 registered small banana producers at present, producing about 25% of the export crop.

The total estimated production for 1992 is 80,000 tonnes and the target is to reach 110,000 tonnes by 1994. Expansion beyond this level is not feasible as export of banana is highly dependent on the retention of a preferential market in the EEC. This has been a cause of much concern recently, as there is great lobbying from Latin American producers and some countries in Europe for this preferential system to be removed. The situation has been resolved for the present with the decision that a 20% tariff will be levied on importation of bananas from Latin America and other non ACP sources up to a volume of 2 million tonnes and 170% on volumes above that. It is still possible, however, that the high cost (due to higher 'labour' costs) of Jamaican and ACP bananas could still prove to be higher than the low cost Latin American bananas. It is imperative therefore, that the efficiency of the industry be improved.

10.3.3 Potential for Further Expansion of Sugar and Bananas

Examination of the traditional export crops indicate that there is no significant potential for intervention by IFAD in crops such as sugar-cane and bananas. Both these industries have been or are in the process of being rationalized and expansion has been planned to meet the needs of secure or relatively secure markets. Consequently it is projected that both the sugar and banana industries will realize their full potential by 1994 when 270,000 tonnes and 110,000 tonnes respectively will be produced. In the case of sugar the area is already in production to achieve the projected output, while in the case of banana, the output should be realized when an estimated 1,200 hectares are developed in the western end of the island.

10.3.4 Coffee

There are about 9,000 hectares of coffee in Jamaica. Of this, there are about 1,800 hectares of Blue Mountain Coffee and 7,200 hectares of lowland coffee. There are plans to expand Blue Mountain Coffee considerably, which are being supported by Japanese interests, and there is an EEC project to expand lowland coffee by 600 hectares. There are also rehabilitation programmes for existing coffee cultivations. Projects for coffee are 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.

Production was seriously affected by hurricane damage in 1988, but is now recovering. Up to that time production had been growing at the rate of around 3% per year to reach some 12,103 tonnes in 1988. This was reduced to 5,443 tonnes in 1989, but production by 1991 was 9,173 tonnes. There is a strong demand for Jamaican coffee, Blue Mountain fetching a premium of 4.5 the ICO indicator price, and lowland coffee a premium of 2. Exports go mainly to Japan. Coffee marketing has been deregulated subject to quality controls. Coffee can give very high returns to small holders if proper cultural practices are used. There are about 40,000 coffee growers, 65% with less than 2 hectares, and averaging 0.2 hectares. Marketing for small growers is undertaken through co-operatives, which operate collecting centres and in some cases pulping centres.

10.3.5 Potential for Further Expansion of Coffee

In relation to potential for further IFAD intervention in coffee rehabilitation and expansion, it should be borne in mind that there is currently great emphasis on coffee production at the present time which

is concentrated in the Blue Mountain and non-Blue Mountain areas and the crop would therefore appear to well supported in Jamaica. In addition there is growing disquiet that coffee production particularly in the Blue Mountains is seriously contributing to land degradation since in many cases it is being produced in areas which should be left in forest. This is because of the very attractive price paid. There has also been some reports of pollution of rivers and streams from fertilizers and other chemical used in coffee production.

10.3.6 Citrus

There were an estimated 5,513 hectares of citrus in 1986/87, of which 3,904 hectares were in oranges, 749 hectares were in grapefruit 467 hectares were in ortanique and 430 hectares were in miscellaneous citrus. Production is concentrated in the central part of the island. There are about 17,000 registered growers, but it is not certain how many producers are active. Most growers have small areas, although there is a growing number of large estates including 1,200 hectares planned for the Western Region. Production is recovering from hurricane damage, and new plantings and rehabilitated citrus are coming into production. There are plans to further increase the area in production. The crop is either processed for juice or exported as juicing fruit and fresh fruit. Production for 1991 was 24,801 tonnes. Marketing is mainly organized through branches and agencies of the Citrus Growers Association, which operates a processing plant. There is also a strong informal market for domestic sales. Crop theft is a serious problem for citrus, and is slowing development. Prices (inspite of falling world prices) and demand are high, although recently prices have been affected by falling world prices, and the crop has good prospects. However, the long term nature of the crop, and the time taken to establish a new grove may make the use of credit unattractive whilst interest rates remain high.

10.3.7 Potential for Further Expansion of Citrus

This crop shows good potential for the future. There is a demand for canned and fresh fruit juices not only in the United States and in Europe but also on the local market. The damage done to the orange crop in Florida by frost in recent years has also benefitted Jamaican producers significantly. Local interest in the crop is currently very high and an expansion of 1,200 hectares in Montpelier (Western Region) of the country is currently taking place. Any expansion taking place should however utilize recommended rootstock since the tristeza disease has now been identified in the island. A programme of control of the disease is now being implemented. Appropriate citrus technology is widely practiced and further adaptive research should not be required. It should be noted that farmers have not expressed much interest in taking loans for citrus in the past.

10.3.8 Cocoa

The area in Cocoa is estimated as 1,600 hectares, mainly in mixed stands. There are an estimated 30,000 growers. The crop was damaged by the hurricane and production fell from 2,427 tonnes in 1987/88 to 913 tonnes in 1988/89. Production stood at 1,765 tonnes in 1991. Despite serious problems in the price, cocoa export was worth US$4.6 M before the hurricane but only US$2.3 M in 1991.

Marketing is carried out through co-operatives or through one of four fermentaries. Farmers are paid in two installments, the second depending on marketing out turns. Cocoa is largely grown by small

holders. Area is static, but both IFAD and USAID are funding rehabilitation programmes. A cocoa study was undertaken by EEC but not funded.

10.3.9 Potential for Further Expansion of Cocoa

Market prospects for cocoa are poor, world prices are falling and Jamaica has high production costs. The quality is good, however, and a price premium is obtained. However, export sales have been restricted to a single manufacturer for a single product, chocolate wafer mints, which limits prospects for growth. Returns to new plantings are low, and even rehabilitating is marginal. These returns will be adversely affected by high interest rates. The prospects for further expansion of cocoa is therefore low.

10.3.10 Pimento Production and Potential for Further Expansion

There are about 16,000 pimento growers. The area in pimento is hard to define as trees are generally found on marginal hillside land. Exports are about 2,000 tonnes a year, and supply about two thirds of the world markets. Jamaica's sales and market shares declined over fifty years, and is now less than half its peak level. Marketing is carried out by agents and dealers, including the JAS. Exports are undertaken by the Ministry of Agriculture.The pimento crop is said to have benefitted from an unplanned pruning by the hurricane, which has rejuvenated the trees. There are limited prospects for the development of pimento.

10.3.11 Coconut Production and Potential for Further Expansion

Coconut production was increasing before the hurricane, reaching about 21, 729 tonnes of copra equivalent in 1989. Hurricane damage was serious and production fell to 10,000 tonnes in 1989. Recovery is hampered by a lack of planting material, and a long maturity period. It is expected to take ten years to recover pre-hurricane production levels. Production in 1991 was 12,569 tonnes. There are about 21,000 coconut growers, mainly small holders with mixed stands but there are also some large estates.

The crop is marketed either as copra for edible oils, or as nuts for water or as dry nuts. Copra production has fallen to a very low level, as most nuts are used for direct consumption. Coconut oil is reportedly very high in cholesterol, reducing its market value, and cost of production are higher than other imported edible oils. The new varieties, introduced to replace tall varieties killed by lethal yellowing are dwarf types, and are prone to praedial larceny. There is scope for additional planting in order to attain pre-hurricane levels.

10.3.12 Other Tree Crop and Fruits; and Potential for Expansion

Mangoes, passion fruit, guava, soursop, and papaya all have potential for development. Mango can be preserved in chunks and juice; passion fruit is popular for blending with various citrus juices, papaya has good export potential as a breakfast fruit and the other crops all have potential for juices or other processed form. The Ministry of Agriculture and USAID are currently developing a grant funded project to develop agro-industry, by supporting product development, equipment for agro-processors as well as the expansion and maintenance of selected crops. It is important to note that this project will provide grants for development - an important factor -since markets will have to be developed.

10.3.13 Domestic Crop Production and Potential for Further Expansion

Jamaican Small farmers produce a wide variety of food crops totalling in excess of fifty. Crops produced include legumes, cereals, condiments, vegetables, fruits, roots and tubers. These crops were originally produced for consumption on the farm with the sale of surplus to the local market. Today, however, there is a rapidly expanding export market for a number of these crops including yams, dasheen, cocoes, pumpkins, hot peppers, plantains and a number of vegetables. Export of these crops are usually to ethnic population of Jamaicans in the United States, Canada and the United Kingdom. There is clear potential for further export of these crops particularly yams. More yams, plantains, vegetables and other roots crops could also be produced to reduce the importation of rice, cornmeal and flour.

10.3.14 Livestock Production and Potential for Further Expansion

The livestock industry is important. Cattle production is for both beef and dairy with most of the large beef ranches being located on the plains. There are also ten large dairy farms on the plains as well as a significant number of medium sizes ones (2 - 10 hectares). Most of these were established by government under dairy settlement programmes. Small and landless farmers are involved in the rearing of dual purpose cattle in the hillside and even in the towns and cities. In 1991, 75,652 heads of cattle were reported slaughtered (61,053000 kgs of meat) and 27 million litres of grade A milk was produced. The poultry industry is also very important and in 1991 5,343 tonnes were produced.

10.3.15 Dairy Production and Potential for Further Expansion

Within the local livestock industry, the dairy sub-sector has been consistently identified as an area for expansion and development which could result in both nutritional and economic benefits. There is malnutrition amongst the most economically vulnerable groups - young children and pregnant and lactating mothers. In 1985 about 15% of children under 5 were classified as moderately to severely malnourished. This is likely to be much higher now given the negative impact of the structural adjustment programme.

The performance of the dairy industry however, has been inhibited by a number of factors, one of the major ones being Jamaica's relatively easy access to cheap surplus powdered milk from developed countries. The existing reality though, in terms of world trends indicates that surplus production of skimmed milk powder and butter oil will become increasingly unavailable and therefore significantly more costly within the next few years. Government has taken a policy decision to address this by applying a duty rate of 30% under the Common External Tariff (CET) to serve as an incentive for the use of fresh milk by local processors.

Historically the development of the dairy industry in Jamaica has centred around the evolution of the Jamaican Hope Breed of cattle. Work begun on the development of the breed in 1910 and by 1952 the Jamaican Hope was declared a breed. The Jamaican Hope is a dairy breed developed specifically for the qualities which enable the animal to thrive in tropical countries. This breed is heat tolerant and has a high resistance to tick infection, and tick borne disease and is able to maintain high levels of milk production on the undeveloped and difficult pasture conditions common to most tropical areas. With a high productivity and tolerance of stress, the Jamaica Hope is not only

believed to be the optimal breed for the Jamaican dairy farmers, but has also attracted attention in many tropical countries.

The Current Jamaican Hope population is estimated at approximately 15,000 although only a third of this number is registered. Breed development has been stagnant for the last few years with little improvement in the levels of milk produced per cow. The lack of improvement in the breed in recent times can be attributed to there being no systematic selection programme for increased milk yield and a deterioration of the herd at Bodles Research Station which was the source of improved genetics.

Despite these problems the breed continues to form the backbone of the country's Grade A dairy herd and appeals to many producers because of its performance under less intensive management. In addition it is a reliable breeder capable of producing a calf (and hence starting a new lactation) every 12 months under high temperature which often interferes with reproduction in breeds developed in temperature climates.

11 ELEMENTS OF A STRATEGIC FRAMEWORK FOR IFAD's INTERVENTION

New

11.1 General Approach to IFAD's Strategy

Jamaica is in the process of undertaking a number of policy and programme reforms to the benefit of IFAD's target group, the rural poor and small farmers. However, implementation of these have been affected by budgetary constraints and manpower shortages in the public sector. Consequently, the desired impacts have not yet been achieved. IFAD can therefore play an important role in assisting the Government of Jamaica to develop a medium to long term agricultural development strategy which will focus on the role of small and marginal farmers, the landless, women, young persons and the unemployed, while at the same time identifying specific areas of investment which could be supported by the Fund. A strategic response to the problem of rural poverty in Jamaica must correspond to the constraints related to the rural poor and small farmers. This report has indicated that the rural poor are to a great extent concentrated in the hillsides throughout the country and to a lesser extent in small rural towns. In arriving at a strategy for Jamaica, the report has attempted to analyze the various constraints faced by the Fund's target group in the country (Chapter). The constraints relate principally to a limited resource base as well as to environmental, technological and institutional factors.

11.2 Elements of Strategic Framework for IFAD's Intervention

In seeking to develop a strategic framework for future intervention by IFAD in Jamaica, a number of factors must be taken into consideration. These include identification of the potential target group; identification of the region or location of the target group; the environmental, technical, institutional and financial constraints related to the location; the sub-sectors which have potential for development by the target group and the lessons learned form previous IFAD projects in Jamaica.

11.3 Selection of Target Group and Location

As indicated earlier, the majority of the poorest farmers live in steep hillsides. The landless or near landless are also predominantly located

in these areas. These persons cultivate very small plots (often less than 0.4 hectare) and also work as agricultural or non-agricultural labourers. There are also unemployed landless persons who have very little skill training. Other disadvantaged groups in this area include women who might be heads of households or who might be without families, and young persons who might have had some training in agriculture or other areas but who find it difficult to obtain land for farming or non-agricultural employment. All these persons would qualify as potential beneficiaries of IFAD's strategy to support the poorest of the poor in Jamaica.

Included a new title

11.4 Rationale for IFAD's Intervention

In dealing with the potential target group who are farmers, IFAD has to take into consideration the fact that to a great extent the hillsides are not suitable for the preferred cropping system of the majority of these farmers since it has been shown earlier that the first preference is for food crops but that this to a great extent is not suitable for the topography of the hillsides. On the other hand, farmers might not be able to access credit to invest in long term perennial crops which are more appropriate. One of the major reasons for this is the tenurial system where family land or leased or rented land is being utilized. Consequently, a considerable part of the farm, even although it might be less than a quarter of hectare might remain unutilized. It has also been demonstrated from the lessons learned from a previous IFAD project that the technology might not exist for projecting significant increases in yields from existing crops and that the increased production capacity of poor farmers should be based on a more realistic assessment of available technology. It is clear, however, that unless urgent and immediate work is done in improving the existing technology, there will be very limited improvement in the life of poor farmers. The strategy to be pursued by IFAD must therefore place primary emphasis on research and technology development. It should also place emphasis on ways of improving the marketing of small farmers crops. Agronomic ways should also be found of improving the environment. In all of this, the special needs of women, young persons, the landless and the unemployed should not be forgotten and a special strategy should be devised for dealing with them.

New

11.4.1 Strategic Intervention by IFAD

Based on the above presentation, a multi-pronged strategy for further IFAD intervention is proposed. This will include institutional building of the Research Division of the Ministry of Agriculture and of RADA in order to facilitate improved technology development and transfer to farmers. Institutional support is also proposed for the Jamaican Agricultural Society to enable it to facilitate improvements in farmers' services, such as improved post harvest handling and marketing. IFAD's strategy should also include the development and promotion of agro-industries in order to increase the availability of markets for primary produce and to increase agricultural production and employment opportunities in both agriculture and in processing. The strategy should support agro-forestry development since this will provide improvement to the environment which is under so much stress as a result of too intensive cultivation of the hillsides by farmers. The strategy will emphasize recognition of the need to deal specifically with the needs of women and young persons which up to now have received inadequate attention. Finally, the strategy while recognizing the limitations attached to credit programmes principally because of high 'interest rates' will promote credit for agriculture where this is

clearly viable, but more importantly, it will focus on non-agricultural credit which can reach a wider cross-section of the rural poor.

11.4.2 Institutional Support to Research

The small farmers of Jamaica are negatively affected by many constraints. However, at the centre of these is the constraint related to a technology which is inappropriate for the hillsides in which they farm and continued utilization of which will forever limit their production levels and productivity. An alternative technology must therefore be developed based on appropriate farming systems, improved inputs and machinery and modern tools specifically designed for hillside conditions. The capacity of the small farmers to efficiently utilize credit will remain very limited unless technology development and transfer to farmers is radically improved. Unless this is addressed as a matter of urgency, the small farmer will forever be doomed to a marginal existence. The contribution of the agricultural sector to national development will also remain unacceptably low (agricultural contribution to G.D.P. in 1991 was approximately 5%) and the environment will continue to deteriorate with negative impacts on the entire country. Consequently, IFAD could be of great assistance to the Government in developing an appropriate research system which would be capable of undertaking the type of research necessary to address the technology constraints being experienced by the farmers. The Government with IFAD's support should therefore take steps immediately to initiate the process os restructuring and improving the agricultural research system starting with the definition of an institutional framework and a programme for research. Technical assistance will be required to determine the institutional framework which should be put in place. The Government and IFAD should however, bear in mind that a realistic proposal appears to be for the Ministry of Agriculture to focus on small farmers research, while other institutions and agencies would continue to undertake specialized research. A National Co-ordinating Committee should be established with responsibility for planning of priorities and monitoring of programmes. It would have representation from all the research agencies in the country, both private and public.

The Ministry's research headquarters at Bodles should be developed with IFAD support into a strong and viable centre for research. Over time, Bodles could provide laboratory and research services for other agencies which might ultimately wish to merge their activities with the Research and Development Division. The Division should be organized in such a manner as to be capable of attracting international funding. It should also establish closer contacts with International Agricultural Research Centres, especially CIAT, CIMMYT, IICA, and CIP, and obtain their assistance in research techniques, staff training, information and so on. IFAD would have to provide technical assistance in order to achieve this.

High priority should be given to staff training and preparation of a development plan, formulation of which should make provision for advance training of selected existing staff, as well as newly hired personnel. The plan should also devise a better balance in research than is presently the case. The main focus should be placed on research to benefit small farmers particularly in the hillside. Primary emphasis should be placed on appropriate farming systems research which integrates tree crops, forestry, food crops, livestock and soil conservation.

11.4.3 Institutional Support to RADA

Institutional support to RADA by IFAD is justified on the basis that current capacity of the Organization is far too limited and is reaching only 20,000 small farmers out of a total of 150,000. This is clearly inadequate if small farmers are to be assisted to increase production, productivity and standard of living. RADA, because of staff reduction is concentrating on reaching groups rather than individuals and IFAD should assist the Government in developing a special strategy to deal with this. It is also imperative that a stronger link be forged with research so that more effective transfer of technology can take place. The strategy should also place more emphasis on soil conservation since it has been indicated how serious the issues related to land degradation are. IFAD's strategy for assisting RADA should therefore include technical assistance to assist in developing linkages with the Research Division in order to effectively extend technologies being developed to farmers. This assistance would focus on integrated farming systems.

IFAD should also provide technical assistance in the area of soil conserving techniques on hillside farms in order to accommodate farming systems which are technically feasible and economically viable. Although there has been some degree of mitigation of the problems of mobility of extension farmers, this problem has not been completely solved and requires additional assistance. The provision of extension material will become an important part of IFAD's strategy to assist RADA particularly as the thrust is towards groups rather than individuals. The Agricultural Extension Officer should be supplied with small video units which can be used with small groups of up to 20 farmers. Flip stands and materials should also be supplied. There is also need for other audio visual equipment such as cassette players and cassettes. Extension officers will also have to be trained in the use of these equipment. The strategy should also include the provision of equipment for use on demonstration sites which will also be a critical part of the extension approach being utilized. Equipment should include knapsack sprayers, mist blowers, fertilizers, pesticides, seeds and planting materials and farm hand tool sets. Finally, IFAD's strategy for supporting RADA should include training of extension officers on a continuous basis. This programme would emphasize training in the implementation of methodologies being developed on the research station.

11.4.4 Institutional Support to the JAS

Institutional support to the JAS by IFAD is justified on the grounds that the Government alone will never be able to organize farmers effectively and mobilize them to participate more meaningfully in the production process. The JAS, the major farmers' organization is very weak and there is a clear role for IFAD given its emphasis on farmers' associations to provide support in this area. IFAD's strategy should therefore include technical assistance to the JAS to allow it to re-organize itself efficiently. Its commercial operation must be separated from its responsibility for organizing and mobilizing farmers. Assistance is also required to allow it to put a modern accounting system in place which can help it to become viable. IFAD's strategy should also include a comprehensive training programme to upgrade the staff of the JAS and to teach it modern ways of organizing farmers. The JAS should also participate in some of the training programmes put on for the extension officers. This is essential as the JAS staff should be informed on appropriate farming systems and technologies. A programme of providing mobility for the JAS staff is also essential to make it possible for some of them to have access to remote areas in

which many farmers are located.

New

11.4.6 Agro-Forestry

In addition to economic trees, forest species have an important role to play in watershed protection, especially on steeper slopes unsuitable for agriculture. Correctly managed forest trees can contribute both to land conservation and to the generation of income. The need for improved management and development of the country's forest resources is high on the Government's agenda for conservation of the environment and is seen by an increasing segment of the population as a urgent requirement in striving for socio-economic development. Consequently, the Government with the assistance of FAO has developed a comprehensive National Forestry Plan but has been unable up to now to attract international funding because of the institutional weakness of the Forestry Department. Until this comprehensive afforestation programme can be implemented, IFAD's strategy should support the Government by implementing a comprehensive training programme of farmers who operate in forestry areas which are becoming rapidly denuded. The emphasis would be on the most critical watersheds and would focus on human co-existence with the forests, so that immature forests are not cut down, whether for charcoal burning or yam sticks, or to clear land for crop cultivation.

A key part of IFAD's strategy relating to agro-forestry would be to generate a significant degree of benefits for rural people and thereby heighten their commitment to conservation of forestry and natural resources. In this respect the strategy proposed is the introduction of agro-forestry activities among farming communities in critical hillside areas. The objective is to improve the availability of wood products and fuel wood, while increasing productive tree cover. At present, there is a critical shortage of yam sticks required for the production of yams, a root crop which is grown by small farmers and which is becoming increasingly important as an export crop. It is estimated that 6 million yamsticks are required each year and this number will be increased if exports are expanded. The main producing areas are located in the uplands of the central and north western parishes of the island and involves more than 8,000 farm families in this region. Over the years, the forested areas on private lands nearby have been completely depleted of yamsticks and yam farmers now have to purchase their requirements which are being cut and transported from mangrove forests. The price of yamsticks has increased to the extent where it is now the most costly input for the yam grower. It therefore appears that this is an excellent opportunity to introduce the community approach for establishing wood lots primarily to supply the wood product requirements of the community. Also since wood lots will be confined to marginal land and degraded or denuded sites, the rural community would be able to demonstrate better land use and the benefits of forest conservation. This strategy would require IFAD to provide technical assistance in the form of an international agro-forestry extension expert and a communications specialist.

11.4.7 Agro-Processing

Assuming that production and productivity are increased in the medium term, there will have to be very significant improvements to the marketing system in order to efficiently dispose of the crops produced. Given the small size of the domestic market, however, it sill definitely be necessary to focus on the export market. It has been indicated, however, that the traditional export crops have reached or are near

their optimal production level. It is therefore imperative that more attention be given to the development of agro-processing. It has been previously indicated that development of this sector is constrained by insufficient backward linkage with agriculture and inadequate supply of raw material at a price which would make agro-processing viable. Consequently, supply to agro-processors is usually erratic and on a last resort basis. Of the 12-15 plants involved in processing, most are small and all are under capitalized, operating out of date inefficient machinery. Capacity utilization is less than 60% in most cases with only two large plants being fully utilized. In spite of these difficulties there is clear potential for this sector since Jamaica produces a wide variety of exotic fruits, suitable for processing. These include ackee, passion fruit, citrus, guavas, mangoes, soursops, pineapple and many more. In order to assist development of this sector, IFAD's strategy should include a number of components including the fostering of backward linkages between processors and farmers, orchard development of the crops to be processed, product development, assistance in the retooling of small plants and development and monitoring of acceptable standards of products as well as manpower training. One of the clear advantages of promoting agro-processing is the potential which it has of providing developmental opportunities for a wide cross section of the rural poor including small and marginal farmers, women, young persons and the unemployed.

11.4.8 Assistance to Women's Development

In view of the importance attached to women's issues by IFAD and the Government greater recognition must be given to the training of women to enable them to reduce their dependence on men and to improve the economic and social well being of themselves and their families. IFAD's strategy should therefore be to develop a comprehensive training programme for women in a wide range of skills including those traditionally reserved for men. Recent experience in Jamaica is demonstrating that barriers to jobs formerly regarded as being for men, are rapidly breaking down, but that more women are unable to avail themselves of these new opportunities because of lack of training. This component should be complemented with the development of cottage industries based on utilization of the produce of the fruit trees usually found around the home and which can be used for the production of jams, jellies and other preserves. The development of cottage industries have the advantage of allowing women to remain at home where they can care for young children. However, it is likely that the majority of women will work outside of the home. A critical part of the strategy for the development of women must therefore include the expansion of day care centres particularly for the children of the poor. Most existing centres are geared toward the children of the middle class and the poor are precluded because of the high costs. The expansion of such centres would free-up women to participate more effectively in the development process.

11.4.9 Assistance through Provision of Credit

It has been indicated that the existing high interest rates have proved to be a serious deterrent to the utilization of credit. Notwithstanding this, credit should still be an effective part of IFAD's strategy particularly in the area of non-agricultural credit although agricultural credit would also be provided. Provision of credit for agriculture however, should focus more on integrated farming systems rather than mono-cropping and should only be granted after thorough analyses of the proposed projects.

11.4.10 Credit for Coffee, Cocoa and Other Tree Crops

Whilst coffee and cocoa have scope for additional production, IFAD should bear in mind that coffee production is currently well supported by donors. It should also bear in mind that there are a number of environmental problems related to the production of this crop, particularly in the Blue Mountains. In relation to Cocoa, IFAD should bear in mind that international price forecasts are not good and would mean very marginal returns to investment. Further IFAD support to coffee and cocoa should therefore only be provided if and when the above issues have been successfully resolved.

In relation to citrus, the potential is good. IFAD should take note of the fact, however, that an EEC project for providing loans to citrus had to be canceled because farmers were not interested in taking up these loans. Therefore, before IFAD provides any credit facilities for this crop, a survey should be carried out to ascertain if farmers have changed their attitude to credit now that more attractive markets have been secured.

IFAD's strategy should provide credit support for the production of mangoes, passion fruits, ackees, and other tree crops primarily for agro-processing but it would have to provide technical assistance in the areas of farmer organization, product development and marketing. These tree crops could be produced throughout the dry hillside regions of the country.

11.4.11 Line of Credit to MIDA for Non-Agricultural Credit

In order to reach a wide cross-section of the rural poor islandwide, including the landless, women, young persons and the unemployed, IFAD's strategy should support the provision of a line of credit for non-agricultural enterprises to the Micro Enterprise Development Agency (MIDA). This Agency provides loans below the rate of the ACB/PCBs and also provides basic business training to borrowers as a mandatory requirement before funds are disbursed. Short and medium-term loans should therefore be made available for enterprises including food processing, baking, dressmaking, hairdressing, retailing, taxi services and other forms of transportation, bricklaying and for small rural artisans. Only trained artisans would qualify for enterprises requiring special skills such as carpentry and masonry. A special fund should be set up by IFAD to provide pre-business training in business management, book-keeping and marketing.

IFAD should also provide support for marketing credit which would be available for crop purchasing (short term) transportation (medium term) and for rudimentary infrastructure for assembly, grading and storage of produce handled by groups.

11.4.12 Support to the Livestock Industry (Dairy)

IFAD support to the Dairy Industry should involve support to the Research Development Division for herd development of the Jamaica Hope. This would include purchase and rearing of breeding stocks for eventual delivery to farmers using facilities at Bodles and Montpelier research stations for the breeding of these animals. It would also include an outreach programme in which in-calf heifers would be distributed to participating farmers by RADA. They would be provided with the necessary supporting services and should be required to satisfactory rear the first female calf for return to a revolving herd pool, from which additional farmers could receive animals. In order to facilitate

the most economic model for delivery of services, farmers comprising three clusters are recommended to participate in the scheme. The clusters should be structured so as to be linked with a guaranteed market outlet. They should also be grouped for efficiency in the delivery of extension livestock services so as to reduce the cost of servicing. The three clusters should be based in principal dairy farming areas as indicated below:-

Cluster I - Trelawny area comprising Wakefield, Bankers Hill, Clarks Town and Deeside.

Cluster II - St. Ann/St. Mary area comprising Guys Hill, Carron Hall.

Cluster III - Manchester, St. Elizabeth, St. James

12. JOINT EFFORTS AGAINST POVERTY WITH OTHER DONORS AND INTERNATIONAL ORGANIZATIONS.

12.1 Introduction

There are a number of International and Bilateral Organizations working in Jamaica in the area of agriculture and rural development, whose activities complement those of IFAD's. (Annex 5). Currently one of the most active Aid Organization in Jamaica is USAID which is financing two major projects in agriculture both of which are grant-funded. One of these is the Hillside Agricultural Project (HAP) which is rehabilitating critical watersheds in the eastern end of the island. The other is the Agricultural Export Services Project which is undertaking both institutional development in areas related to external marketing as well as implementing production projects geared for export. The Inter American Development Bank (IDB) is currently implementing the Land Titling Project which is aimed at improving physical infrastructure which will facilitate the issuance of titles to farmers in land settlement. It is also undertaking institutional building of the three departments involved in this process - The Lands Department, the Survey Department, and the Titles Office. The World Bank is currently implementing the second Sugar Rehabilitation Project which is upgrading the Frome and Monymusk Sugar Factories as well as undertaking irrigation works in the mid Clarendon area.

The Overseas Economic Co-operation Fund of Japan is currently implementing the Blue Mountain Coffee Development Project in the Claverty Cottage/Shirley Castle area while the European Economic Commission (EEC) is implementing a coffee expansion project in lowland areas. CIDA is undertaking a Trees for Tomorrow Project in the area of forestry. In addition it is also implementing a Small Scale Enterprise Project to provide credit, technical assistance and training to micro and small scale enterprises through the National Development Foundation (NDF). It is also providing support to agricultural credit through technical assistance and training .

Finally, the Netherlands is supporting a Strengthening of Rural Communities Project in the Rio Grande Valley through agricultural development, animal husbandry, community development and infrastructure development.

12.2 New programmes being planned

In addition to the above mentioned activity the World Bank has for the past three years been seeking to develop an appropriate Watershed Development Project. This, however, has not yet come to fruition since the World Bank and the Government are unable to agree on the components. Germane to the problem, however, is the fact that the very small farmers located in the hillsides are unable to bear the cost of World Bank loans. If this project is to advance therefore the Bank must find a co-financier who can put concessional funding into the project.

The EEC is also in the process of developing a comprehensive Rural

Development Project which will be implemented with grant funds.

12.3 Constraints to Development of New Projects

A serious matter which has to be taken into consideration, is the fact that the market rate being charged for agricultural loans has created a serious bottleneck for all donor agencies in the agricultural sector since there is very slow take off of projects which have credit as a significant component. This has also constrained the development of new projects. The major projects currently fuelling development in the small scale agricultural sector is undoubtedly those which provide grant funding for project activities. While the Ministry tries to ensure that there is no abuse of such projects and that they are directed to productive areas, questions are being raised as to their sustainability.

It is clear, however, that any further investment in the small scale agricultural sector is going to have to be in the area of institutional building or provision of concessionary funding for productive components. The Inter-American Bank (IDB) has recognized this and will not be making any further loans available for the agricultural credit. The sector will, however, be able to access loans on a viability basis from a block of credit available to all sectors.

It would appear that in the short run, the Agencies with which IFAD can make joint efforts against poverty in Jamaica would include CIDA, and the Netherlands. Both these agencies have had a positive relationship with IFAD. The Netherlands is currently co-financing the Small Hillside Farmers Project while CIDA is undertaking a parallel intervention in supporting the institutional strengthening of the PC Banks. There is also scope for co-operation with both the EEC and USAID, although not necessarily through co-financing but more probably through actions designed to reinforce objectives and strategies being utilized to develop the sector. There is also scope for co-financing with the World Bank since as mentioned earlier, if the Bank's Watershed Project is to proceed, then it will definitely need to seek co-financing from Agencies whose terms and conditions are more appropriate to the needs of the small farm sector in Jamaica.

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ANNEXES

ANNEX 1

SOIL TYPES OF JAMAICA

A. According to the FAO/UNESCO (1974) soil classification

Mountains:

On calcareous shales:
- Eutric regosols
- Eutric cambisols
- Orthic luvisols

On non calcareous shales:
- Dystric regosols
- Dystric cambisols

Hills and foothills:

On limestones:
- Rendzinas
- Eutric and ferralic cambisols
- Humic and ferralic acrisols
- Orthic and rhodic ferralsols
- Chromic vertisols

On calcareous shales:
- Eutric and vertic cambisols
- Eutric regosols
- Ortric luvisols

On non-calcareous shales, conglomerates and tuffs:
- Dystric regosols
- Dystric cambisols
- Orthic luvisols
- Chromic vertisols

On granodiorite:
- Dystric cambisols
- Dystric regosols

Interior basins:
- On old alluvium and hill wash deposits:
  - Chromic vertisols

Plains:
- On old alluvium
- Orthic luvisols
- Chronmic and pellic vertisols

On recent alluvium:
- Eutric and Dystric cambisols
- Haplic and calcaric phaeozems

Swamps and tidal flats:
Eutric and thionic fluvisols
Eutric histosols

B. According to the United States Soil Taxonomy.

Mountains:
Eutropepts
Dystropepts
Troporthents

Hills and foothills:
Eutropepts
Dystropepts
Ustropepts
Troporthents
Tropudalfs
Tropudults
Eutrorthox
Chromuderts

Interior basins:
Eutropepts
Dystropepts
Tropudults
Paleudults
Eutrorthox
Hapludolls
Tropaquepts
Paleaquults

Plains:
Eutropepts
Ustropepts
Haplustalfs
Paleustults
Paleudults
Calciustolls
Chromusterts
Pellusterts

Swamps and tidal flats:
Eutropepts
Tropopsamments
Fluvaquents

The National Resources Conservation Authority

Legislation (The Natural Resources Conservation Act)

The Natural Resources Conservation Act of 1991 establishes a statutory body (NRCA) to "provide for the management, conservation and protection of the natural resources of Jamaica". The act also empowers NRCA to establish policies, promulgate regulations and standards, and develop and implement strategies to achieve this goal. As set forth in the ACt, NRCA is the primary agency with responsibility for environmental management in Jamaica. The authority falls within the portfolio responsibility of the Ministry of Tourism and the Environment.

MANDATE

The mandate for NRCA is broad, with agency functions including the following:

- Inplementation of measures necessary to ensure effective management of Jamaica's physical environment;
- Promotion of public awareness of Jamaica's ecosystems and their importance to social and economic well-being;
- Management of National parks, marine parks, protected areas, and public recreation facilities;
- Advisement to the Minister on matters of general policy related to environment arrangement ; and
- Performance of other functions as determined by the minister, the Act, or any other enactment.

To perform these functions the Act empowers NRCA to engage in a wide range of activities ranging from the formulation of regulations and standards tothe development implementation and monitoring of environmental management programms.

BOARD OF DIRECTORS

NRCA's Board of Directors is comprised of 10 members who represent a broad spectrum of public and private interests, including NGOs. The Board is charged with providing direction andsetting policy related to principal NRCA initiatives and other proposed schemes for environmental management. The Board meets at least once monthly and more often as specific initiatives require.

PERFORMANCE OF FUNCTIONS

In performing its functions, the NRCA is engaged in:

- development, implementation and monitoring of plans and programmes relating to the management of the environment and the conservation and protection of wildlife and natural resources;

- public information, public education and the development of effective techniques for public participation in environmental conservation and sustainable development practices at community, parish, and national level and within the public and private sector;

- management of the system of national parks, marine parks, protected areas and public recreational facilities in collaboration with other government agencies, environmental organizations and community groups;

- formulation of standards and codes of practice to be observed in the improvement and maintenance of environmental quality covering areas such as air and water quality and hazardous chemicals;

- facilitating and undertaking environmental studies, encouraging and promoting research related to pollution management and natural resources conservation and the dissemination to the public of the results of such research.

- coordinating seminars and training programmes and initiating the collection and dissemination of information relating to environmental matters;

- entering into any arrangements which the NRCA thinks is necessary for the proper performance of its functions;

- maintaining and enhancing a close liaison with other government agencies, the private sector and NGOs concerned with environmental issues as well as relevant international and overseas agencies.

Legal Mandate of NRCA

The NRCA operates under (4) statues namely:

- the Natrual Resources Conservation Act, 1991

- the Beach Control Act

- the Wildlife Protection Act

- the Watershed Protection Act.

It has far ranging powers under these statues to intervene when the activities of any - including other governmental agencies - pose a serious threat to natural resources or environmental health and safety.

Current NRCA Funded Activities

The portfolio currently managed by the NRCA relate directly to:-

- the declaration and development of marine and national parks, protected areas and nature resources;

- the management of beaches, wetlands and watersheds;

- projects involving the protection of wildlife species;

Women in development

Goals of the Policy of Government Related to Women

- Recognizing the existing high levels of unemployment among women, and the immediate inpact that women's employment and income have on living standards of children, the government will seek to ensure that economic, trade and employment policies protect and increase women's access to employment and income;

- Recognizing the benefits to the economy and to women of increased opportunity productivity and income in entrepreneurial and agricultural activities, the government will promote the identification and upgrading of women's existing skills and promote new opportunities, as well as taking measures to address constraints such as credit, access to markets and the need for support services;

- Recognizing that many areas of employment in which women predominate are also those which receive low renumeration and have poor working conditions, the government will take special policy measures to improve pay and conditions of women's work and to promote the diversification of women's employment opportunities;

- Recognizing that appropriate child care arrangements not only increase the efficiency of women workers but are an investment in the children and future of Jamaican, the government will develop measures to expand and develop affordable child care services;

- Recognizing that evidence of physical and sexual abuse withim families and society is increasing, the government will pursue means of providing adequate protection and means of redress to women and children who are victims of family violence, incest, rape and sexual harassment;

- Recognizing the differences of housing in Jamaica and the extraordinary number of household heads who are women, the government will make special efforts to improve the supply of housing and terms of acquisition to assist women in providing shelter for themselves and their families;

- Recognizing the legal and administrative reforms are still required to achieve adequate protection and treatment of women under the law, the government will identify the areas in which reforms are required in accordance with the UN Convention on the Elimination of all Forms of Discrimination against women, and will implement the reforms necessary for the production and advancement of women;

- Recognizing that inadequacies in basic serivices such as water, sanitation, health, education, transport and public safety can increase the work-load and financial burden on women , the government will identify the gaps in the provision of basic services and the ways in which the cost of bridging these gaps is distributed between women and men. Government will also identify appropriate measures of adjustment;

- Recognizing that women are unique in their capacity to bear children and that many of our women remain unaware and powerless to control their frequency of conception and pregnancy, with detrimental effects on themselves and their families, the government will ensure that its legislative provisions and programmes protect and promote the rights of women to determine the number of childrem they desire and the method of contraception best suited to their total well-being,

- Recognizing the numerous factors that continue to militate against women and girls at all level of formal education, inclusive of the 'hidden curriculum' (the process by which structural and attitudinal constraints which are in effect, hidden barriers, are covertly transmitted to young people), the government will ensure females equal rights with males in this field, in particular in terms of equal access to the same curricula examinations, scholarships and study grants, quality of school plant, teaching staff and sports and physical education

Some Relevant NGO's in Rural Development

- National Development Foundation
- Jamaica Agricultural Development Foundation
- Jamaica Agricultural Society
- Association of Development Agencies
- Jamaica Conservation and Development Trust
- UNITAS
- CARE
- Womens Resources and Outreach Centre
- Foundation for International Self Help
- United Way of Jamaica
- Food for the Poor
- Association of Women's Organisations in Jamaica
- Projects for People

FUNDING AGE
1. United States Agency Development (USAID)
2. United States Agency Development (USAID)
3. International Bank f and Development (Wor
4. Inter-American Deve
5 Overseas Economic Co of Japan
6. Canadian Internatior Agency (CIDA)

STATISTICAL ANNEXES

TABLE 1 NUMBER AND ACREAGE OF FARMS BY SIZE GROUPS

NO. & ACREAGE	ALL FARMS	SIZE GROUP OF FARMS (ACRES)				
		0 - < 5	5 - <25	25 - <100	100 - <500	500 & Over
No. of Farms	179,700	146,200	29,900	2,500	800	300
	(100%)	(81.4%)	(16.6%)	(1.4%)	(0.4%)	(0.2%)
Acreage of Farms	1,319,100	207,600	25,300	109,000	163,800	585,600
	(100%)	(15.7%)	(19.2%)	(8.3%)	(12.4%)	(44.4%)

Source: Census of Agriculture 1978/79

TABLE 2

ACREAGE OF FARMS BY TENURE OF LAND BY SIZE GROUP OF FARM BY NUMBER OF PARCELS

ALL JAMAICA

Tenure of Land	Total	Under 1 Acre	1 Acre to under 5 acres	5 acres to under 10 acres	10 acres to under 25 acres	25 acres to under 50 acres	50 acres to under 100 acres	100 acres to under 200 acres	200 acres to under 500 acres	500 acres and over
TOTAL										
Owned	1,108,207	11,229	110,965	89,150	90,461	41,135	50,371	58,542	99,617	556,737
Rented	50,424	2,800	21,024	9,123	5,536	1,234	358	294	885	9,170
Leased under 5 years	30,358	578	8,509	4,870	3,256	1,558	1,132	1,498	3,016	5,941
Leased 5 or more years	93,429	957	18,317	16,734	9,881	6,043	4,296	3,533	3,968	29,700
Rent free	71,297	4,420	23,607	13,787	11,606	4,767	3,440	2,959	1,310	5,401
Squatted	9,414	1,033	5,307	1,886	931	137	120	-	-	-
Other	8,242	238	1,673	1,271	1,458	693	717	615	993	584
Total Owned and/or Operated	1,371,371	21,255	189,402	136,821	123,129	55,567	60,434	67,441	109,789	607,533
Land Rented Out	52,297	571	2,380	4,198	2,831	3,022	4,077	4,063	9,263	21,892
Acreage Operated	1,319,074	20,684	187,022	132,623	120,298	52,545	56,357	63,378	100,526	585,641
ONE PARCEL										
Owned	778,588	9,744	64,590	34,889	31,490	15,255	33,351	41,886	65,705	481,678
Rented	23,036	2,088	7,831	1,869	845	317	80	268	568	9,170
Leased under 5 years	13,832	482	4,679	1,517	738	360	533	644	1,857	3,022
Leased 5 or more years	48,904	805	10,380	8,564	2,390	2,867	2,098	2,407	2,275	17,118
Rent free	38,627	3,623	12,942	5,530	4,514	2,928	2,186	1,906	421	4,577
Squatted	4,684	857	2,785	546	374	67	55	-	-	-
Other	4,861	210	993	526	660	220	433	242	993	584
Total Owned and/or Operated	812,532	17,809	104,200	53,441	41,011	22,014	38,736	47,353	71,819	416,149
Land Rented Out	28,225	516	1,463	3,194	1,531	1,570	3,069	3,650	4,624	8,608
Acreage Operated	784,307	17,293	102,737	50,247	39,480	20,444	35,667	43,703	67,195	40,754

TABLE 2 Cont'd

ACREAGE OF FARMS BY TENURE OF LAND BY SIZE GROUP OF FARM BY NUMBER OF PARCELS

ALL JAMAICA

Tenure of Land	Total	Under 1 Acre	1 Acre to under 5 acres	5 acres to under 10 acres	10 acres to under 25 acres	25 acres to under 50 acres	50 acres to under 100 acres	100 acres to under 200 acres	200 acres to under 500 acres	500 acres and over
TWO PARCELS										
Owned	218,931	1,382	34,427	32,024	27,989	11,113	10,187	10,977	21,829	69,003
Rented	15,297	655	8,572	3,433	1,815	391	104	10	317	-
Leased under 5 years	8,596	91	2,889	1,911	1,039	483	190	484	1,159	350
Leased 5 or more years	25,743	150	6,188	5,168	3,787	1,407	1,067	422	654	6,900
Rent free	19,964	739	7,622	4,697	3,562	903	792	843	563	243
Other	1,957	28	492	376	357	198	155	351	-	-
Total Owned and/or Operated	293,663	3,205	62,103	48,383	38,842	14,530	12,495	13,087	24,522	76,496
Land Rented Out	9,501	53	558	616	594	411	665	359	3,907	2,338
Acreage Operated	284,162	3,152	61,545	47,767	38,248	14,119	11,830	12,728	20,615	74,158
THREE PARCELS										
Owned	110,004	98	9,475	15,347	17,584	6,530	3,516	2,942	6,636	47,876
Rented	7,752	55	3,470	2,281	1,590	309	42	5	-	-
Leased under 5 years	4,175	5	774	971	848	310	97	370	-	800
Leased 5 or more years	9,026	2	1,463	2,295	2,188	1,023	658	358	739	300
Rent free	7,619	52	2,450	2,550	1,807	465	39	145	111	-
Squatted	1,048	16	480	425	110	17	-	-	-	-
Other	795	-	158	247	278	90	-	22	-	-
Total Owned and/or Operated	140,419	228	18,270	24,116	24,405	8,744	4,352	3,842	7,486	48,976
Land Rented Out	5,467	2	326	273	349	464	213	16	359	3,465
Acreage Operated	134,952	226	17,944	23,843	24,056	8,280	4,139	3,826	7,127	45,511

TABLE 2 Cont'd

ACREAGE OF FARMS BY TENURE OF LAND BY SIZE GROUP OF FARM BY NUMBER OF PARCELS

ALL JAMAICA

Tenure of Land	Total	Under 1 Acre	1 Acre to under 5 acres	5 acres to under 10 acres	10 acres to under 25 acres	25 acres to under 50 acres	50 acres to under 100 acres	100 acres to under 200 acres	200 acres to under 500 acres	500 acres and over
FOUR PARCELS										
Owned	66,747	4	1,978	4,997	8,060	4,962	1,724	826	2,899	41,297
Rented	2,981	2	915	1,015	757	164	128	-	-	-
Leased under 5 years	1,209	-	156	351	379	283	10	-	-	30
Leased 5 or more years	7,684	-	258	519	934	255	221	50	300	5,147
Rent free	2,837	5	486	709	920	216	246	20	215	20
Squatted	356	-	105	101	85	-	65	-	-	-
Other	379	-	24	107	119	-	129	-	-	-
Total Owned and/or Operated	82,193	11	3,922	7,799	11,254	5,880	2,523	896	3,414	46,494
Land Rented Out	3,391	-	29	100	226	197	77	15	373	2,374
Acreage Operated	78,802	11	3,893	7,699	11,028	5,683	2,446	881	3,041	44,120
FIVE PARCELS										
Owned	21,055	-	424	1,432	3,412	1,544	621	1,133	718	11,771
Rented	971	-	200	422	291	43	4	11	-	-
Leased under 5 years	1,647	-	11	91	206	122	177	-	-	1,040
Leased 5 or more years	1,339	-	30	146	336	343	188	296	-	-
Rent free	1,680	1	92	237	505	148	91	45	-	561
Squatted	108	-	19	23	48	18	-	-	-	-
Other	150	-	3	7	35	105	-	-	-	-
Total Owned and/or Operated	26,950	1	779	2,358	4,833	2,323	1,081	1,485	718	13,372
Land Rented Out	181	-	4	10	65	36	48	18	-	-
Acreage Operated	26,769	1	775	2,348	4,768	2,287	1,033	1,467	718	13,372

TABLE 2 Cont'd

ACREAGE OF FARMS BY TENURE OF LAND BY SIZE GROUP OF FARM BY NUMBER OF PARCELS

ALL JAMAICA

Tenure of Land	Total	Under 1 Acre	1 Acre to under 5 acres	5 acres to under 10 acres	10 acres to under 25 acres	25 acres to under 50 acres	50 acres to under 100 acres	100 acres to under 200 acres	200 acres to under 500 acres	500 acres and over
SIX PARCELS AND OVER										
Owned	112,891	1	71	470	1,926	1,731	972	778	1,830	105,112
Rented	387	-	36	103	238	10	-	-	-	-
Leased under 5 years	899	-	-	29	46	-	125	-	-	699
Leased 5 or more years	738	-	3	42	246	148	64	-	-	235
Rent free	570	-	15	64	298	107	86	-	-	-
Squatted	43	-	5	17	21	-	-	-	-	-
Other	100	-	3	8	9	80	-	-	-	-
Total Owned and/or Operated	115,628	1	133	733	2,784	2,076	1,247	778	1,830	106,046
Land Rented Out	5,532	-	-	5	66	344	5	5	-	5,107
Acreage Operated	110,096	1	133	728	2,718	1,732	1,242	773	1,830	400,939

Source: Census of Agriculture 1978/79

TABLE 3 PROVISIONAL FARMERS' REGISTER 1982 Acreage Operated by Parish and Land Tenure

PARISH	LAND TENURE					
	OWNED	RENT/ LEASE FROM	USED RENT FREE	RENT/ LEASE TO	GIVE RENT FREE	TOTAL ACREAGE OPERATED
ST. ANDREW	17,493.4	3,236.2	1,966.7	195.5	129.1	22,369.4
ST. THOMAS	33,276.0	5,679.7	3,936.8	655.9	1,113.0	38,777.4
PORTLAND	38,617.4	8,198.9	7,058.2	1,510.3	701.5	51,739.7
ST. MARY	69,294.6	8,576.9	4,239.5	2,736.1	1,302.6	77,909.8
ST. ANN	56,566.0	14,528.9	5,804.0	1,668.4	2,111.2	72,593.5
TRELAWNY	54,189.2	12,083.2	3,258.5	1,598.5	285.1	67,505.1
ST. JAMES	54,357.1	8,437.0	6,066.2	1,447.6	631.4	66,630.3
HANOVER	31,635.8	9,460.3	4,511.4	2,478.2	482.9	42,550.3
WESTMORELAND	79,431.2	19,022.6	10,146.4	6,725.4	4,598.4	97,455.0
ST. ELIZABETH	77,093.0	7,907.3	9,883.1	2,381.3	641.5	92,993.5
MANCHESTER	39,621.5	26,229.6	8,285.2	826.8	1,291.7	71,914.9
CLARENDON	70,285.7	13,153.6	6,489.6	1,339.0	563.9	88,403.3
ST. CATHERINE	121,609.0	8,741.9	7,356.1	3,430.8	1,447.7	133,003.7
TOTAL	743,469.9	145,256.1	79,001.7	26,993.8	15,300.0	923,845.9
%	(80)	(16)	(9)	(3)	(2)	*

*N.B. The acreage by Land tenure will not Total 923,845.9 because Acreage Leased or Rented From will again be counted in that Rented or Leased to Similarly acreage used Rent Free will again be counted in that counted in that Given Rent Free.

Source: Ministry of Agriculture

TABLE 4

ESTIMATED NO. OF FARMERS BY PARISH
AND SIZE GROUP OF FARM - 1993

PARISH	ALL	FARM SIZE (ACRES)							
		Landless	>0-<0.5	0.5-<1.0	1-<2.0	2-<5.0	5-<25	25-<100	>100
All Island	192,500	9,000	18,500	23,500	40,000	60,500	37,500	2,500	1,000
St.Andrew	10,130	1,430	1,044	1,350	2,030	2,960	1,240	60	16
St. Thomas	10,200	1,080	830	1,150	2,090	3,220	1,670	100	60
Portland	9,400	480	670	740	1,690	3,070	2,430	230	90
St. Mary	14,800	750	1,270	1,540	2,940	4,955	2,990	210	145
St. Ann	16,350	420	1,485	2,240	3,860	4,930	3,100	230	85
Trelawny	10,750	220	1,030	1,680	2,520	3,510	1,645	95	50
St. James	10,300	460	1,075	1,100	2,050	3,090	2,270	170	85
Hanover	8,100	270	885	880	1,570	2,390	1,890	125	90
Westmoreland	17,050	530	2,265	2,600	3,400	4,330	3,530	290	105
St. Elizabeth	19,950	290	1,695	2,860	4,630	6,360	3,740	320	55
Manchester	21,100	325	1,070	2,450	4,815	7,650	4,450	300	40
Clarendon	24,100	1,255	2,795	2,825	4,720	7,700	4,540	175	70
St. Catherine	20,270	1,490	2,366	2,085	3,685	6,335	4,005	195	109

Source: Ministry of Agriculture
(See assumptions overleaf)

TABLE 4 CONTINUED

ASSUMPTIONS MADE IN ESTIMATING NUMBER OF FARMERS

The number of farmers is estimated to be 192,500 of which 151,000 operate farms of less than 5 acres.

This estimate represents an increase in the number of farmers quoted in the 1978/79 census of agriculture (total = 179,00 and less than 5 acres = 146,200) which was calculated using the following information:-

a) No. of farmers from the 1982 and updated 1989 farmers' Register.

b) No. of Land Settlement Lots distributed by Government (based on data supplied by Technical Services Division).

c) General tendency of farmers and developers in recent times to sub-divide large tracts of land into smaller agricultural holdings, and in some instances into housing lots.

It is concluded that there is an increase in the number of holdings especially with 5 acres and less than 5 acres.

Table 5 AGRICULTURAL CREDIT BANK: LOAN ALLOCATION TO THE AGRICULTURAL SECTOR: 1987-1991
(J$'000)

SUB-SECTOR	1987	1988	1989	1990	1991
Domestic Crops					
Cassava	19.4	18.1	115.8	39.9	84.4
Bee-Keeping	398.2	205.8	372.0	543.8	112.5
Coconuts	261.9	416.9	492.9	1278.8	614.1
Cocoes and Dasheen	226.4	128.0	205.1	210.7	109.1
Sweet Potatoes	61.5	112.9	120.3	59.4	57.7
Irish Potatoes	1888.9	1271.9	1589.2	2353.2	1697.1
Seed Potatoes	-	-	0.0	0.0	0.0
Onions	270.0	361.0	317.2	217.8	104.6
Peanuts	381.1	432.8	318.7	174.7	127.0
Pineapple	455.0	538.0	298.5	579.4	452.4
Plantains	527.6	498.3	466.6	740.3	273.4
Red Peas	586.4	564.5	495.9	522.5	233.3
Rice	4025.0	-	0.0	0.0	0.0
Tree Crops	148.0	51.4	315.0	11723.7	1179.4
Yams	1854.0	1715.1	2666.0	2715.3	1141.5
Other Crops	3135.5	784.7	762.5	4523.1	1265.6
SUB-TOTAL	14238.9	7099.4	8535.7	25682.6	7452.1
Livestock Sector					
Other Livestock	343.6	21.7	21.6	9.2	38.2
Cattle	14935.4	12259.9	17991.0	50727.2	7622.3
Pasture	2733.0	2492.0	2484.4	2991.8	808.2
Small Stock	1737.0	1457.0	638.5	2536.8	1878.2
Poultry	2208.7	10019.5	28821.5	27855.9	10849.9
Fishing	4288.9	8202.6	3637.6	13067.4	3139.1
SUB-TOTAL	26246.6	34452.7	53594.6	97188.3	24335.9
Export Crops					
Bananas	14961.8	34984.4	13943.5	8455.9	1775.5
Cocoa	2535.5	469.4	511.5	327.8	699.3
Coffee	12585.9	6154.9	15120.1	22941.3	3026.9
Citrus	9053.5	4038.3	3756.8	51416.6	35439.0
Horticulture	8184.5	2028.0	5662.4	15227.7	1280.3
Kola	-	-	0.0	0.0	0.0
Sugar Cane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 6 DOMESTIC FOOD AND LIVESTOCK PRODUCTION, 1987-1991

PARTICULARS	UNIT OF MEASUREMENT	1987	1988	1989	1990	1991
LIVESTOCK SLAUGHTER	Heads					
Cattle		67257	63151	62090	68461	75652
Hogs		109565	115140	125601	128010	78745
Goat		52245	51558	44083	57560	49930
Sheep		428	410	290	362	610
MEAT, FISH AND DAIRY						
Beef and Veal	000 kgs	13894	14450	13426	15024	16053
Goats Flesh		625	648	538	652	613
Pork		6459	7331	7504	7394	4740
Mutton		8	9	5	6	10
Poultry		37696	34207	39009	51946	53436
Fish (Inland)		2117	2797	3049	3364	3000
Eggs	Million	115	97	99	125	110
Milk (Grade A)	Million Litres	22	24	25	27	27
DOMESTIC FOOD CROPS	Tonnes	437603	387989	351600	411150	415416
Legumes	Tonnes	10295	7706	7968	7904	8422
Gungo Peas		1812	2138	925	1534	1623
Red Peas		4096	3138	3885	3624	3538
Peanut		2870	1597	2431	1860	2386
Other Legumes		1517	833	727	886	875
Vegetables	Tonnes	109812	87984	104329	108106	101226
Cabbage		14192	13066	17409	17333	14999
Callaloo		9776	9176	10534	11391	10744
Carrot		15289	11595	14176	15527	15255
Chocho		4370	3257	4288	4725	3493
Cucumber		13551	8563	8201	8115	6885
Lettuce		2417	2248	3071	2355	3379
Okra		1336	851	1118	1254	1177
Pumpkin		26942	21758	23691	26243	26237
Tomato		15962	12955	15267	14258	10936
Other Vegetables		5978	4514	6574	6906	8121
Condiments	Tonnes	15161	10167	10499	13155	10224
Escallion		4465	2735	3036	4210	2645

TABLE 7 PRODUCTION OF SELECTED TRADITIONAL EXPORT CROPS
1987 - 1991

CROPS	UNIT	1987	1988	1889	1990	1991
Sugar	'000 tonnes	189	215	200	204	228
Bananas (Export)	Tonnes	33778	28050	41628	61066	75290
Citrus	Tonnes	31263	45129	23448	42996	24801
Coffee (Cherry ripe)	Tonnes	10097	12193	5443	7103	9173
Cocoa (Output from Plant)	Tonnes	2602	2427	913	2068	1765
Coconut (Copra Equivalent)	Tonnes	21174	21729	9176	9373	12569

Source; Planning Institute of Jamaica

TABLE 8 FARMGATE PRICES OF SELECTED TRADITIONAL EXPORT CROPS
1988 - 1991

ITEMS	UNIT	1987	1988	1989	1990	1991
Sugar Cane	J$tonne	1457	1543	1485	2014	2746
Banana (price to growers)	J$ tonne	2866	2668	2337	3748	7046
Citrus						
Oranges	J$ tonne	6834	7606	10009	11684	22046
Ortaniques	J$ tonne	9259	9259	10009	13228	22046
Grapefruit	J$ tonne	6305	6305	5467	6526	13228
Coffee (Price to growers)						
Lowland	J$ tonne	3233	3601	3527	3674	6024
Blue Mountain	J$ tonne	9369	8965	8782	9369	17343
Cocoa	J$ tonne	2872	2872	1789	2737	2929
Pimento	J$ tonne	8047	8818	9149	9590	11464
Coconut (copra)	J$ tonne	3667	3667	3667	7316	7320

Source: PIOJ

TABLE 9 Volume of Major Agricultural Exports
1987 - 1991
(Tonnes)

ITEMS	1987	1988	1989	1990	1991
Sugar	133549	153024	132332	146359	157181
Banana	33778	28050	41628	61066	75290
Citrus	8307	10870	5676	11918	9985
Pimento	2260	2305	1932	2518	1752
Cocoa	1933	2388	1104	1900	1490
Coffee	911	946	827	771	912
Non-traditionals	20538	16438	11963	14733	16626

Source: PIOJ based on data supplied by
Statistical Institute of Jamaica (STATIN)

TABLE 10 Value of Selected Agricultural Exports
1987 - 1991
(US$'000)

ITEMS	1987	1988	1989	1990	1991
Sugar	73800	91853	64839	85767	93381
Banana	18909	15735	19260	37591	45207
Citrus (Fresh fruit)	2608	4563	2495	4674	3414
Pimento	4919	5138	4590	5660	3500
Cocoa	4634	3352	1822	3348	2301
Coffee	8310	9220	9478	8651	12035
Sub-total	113180	129861	102484	145691	159838
Nontraditional	18934	16467	15748	15640	17787
Total	132114	146328	118232	161331	177625

Source: POIJ based on data supplied by STATIN

TABLE 11 Projections for Agricultural Sector (Production)
1992 - 1995 (Metric Tonnes)

CROPS	1992*	1993	1994	1995 ***
1. TRADITIONAL EXPORTS:				
Sugar	240355	235000	245000	260000
Banana	76723**	90000	105000	110000
Coffee	14880	13500	15000	18000
Cocoa	2245	2961	3728	4101
Citrus	24801	27382	28450	31295
Pimento	2264	2437	2623	2885
2. DOMESTIC CROPS:				
Onions	4124	3882	4081	4285
Irish Potato	5988	13151	13605	14285
Sweet Potato	17874	29024	30838	32380
Pineapple	11050	10158	10317	10833
Plantains	20448	29477	29931	31428
Legumes	8229	13181	13556	16268
Roots and Tubers	179999	184525	187770	206547
Vegetables	91062	120703	122843	135127
3. LIVESTOCK:				
Dairy ('000) LITRES	38000	45000	50000	55000
Beef	15782	16190	16553	17000
Poultry	79421	82963	84324	86000
Pigs	6802	7029	7256	7256
Sheep & Goats	658	658	658	658
4. FISHERIES				
Marine Fish (Kg Million)	7.2	11.7	13.1	14.41
Inland Fish (Kg Million)	3	5.2	6.2	6.6

Source: Ministry of Agriculture

* Figures in this column represent actual production up to the end of the third quarter 1992

** This figure represents total Banana Exports for 1992

*** These figures are revisions of projections in the Five Year Plan

TABLE 12 VOLUME OF SELECTED NON-TRADITIONAL AGRICULTURAL EXPORT, 1987-1991
'000kg

COMMODITY	1987	1988	1989	1990	1191
Tubers	11818	11174	8931	11236	11520
Yams	9118	8567	6207	8286	9130
Sweet Potato	826	730	878	758	709
Cassava	7	2	4	1	-
Dasheen & Eddoes	1866	1875	1618	2191	1681
Other Tubers	1	-	224	5	-
Vegetables	5959	3024	1592	1781	2052
Pumpkins	1439	1081	1130	1155	1442
Sweet Pepper	1108	1040	-	-	-
Cucumber	2769	124	90	120	102
Tomato	3	1	-	2	1
Okra	3	7	2	-	5
Other Vegatables	637	771	370	504	502
Fruits	1572	1732	1114	1320	2689
Avocadoes	110	27	16	50	73
Mangoes	575	882	416	599	1382
Melon	29	1	-	30	47
Other Fruits	858	822	792	641	1187
Ornamental Horticulture	1189	508	326	396	365
Cut Flowers	644	435	295	359	270
Foilage	564	73	31	37	95
TOTAL	20538	16438	11963	14733	16626

Provisional Data Revised

Source: Statistical Institute of Jamaica

TABLE 13 VALUE OF NON-TRADITIONAL EXPORT CROPS 1987-1991
(US$'000)

COMMODITY	1987	1988	1989	1990	1991
Vegetables	2767	2087	1179	1122	1239
Tomatoe	3	1	-	3	1
Sweet Pepper	653	801	-	-	-
Okra	3	7	1	4	2
Pumpkin	611	600	578	598	708
Cucumber	640	124	72	96	73
Other vegetables	857	554	528	421	455
Tubers	9389	9997	11195	10581	11754
Yams	7463	7947	8834	8023	9914
Sweet Potato	599	602	744	677	618
Cassava	5	2	3	1	-
Dasheen & Eddoes	1322	1446	1614	1880	1222
Fruits	1029	1400	895	1046	2367
Avocadoes	51	20	14	46	47
Melons	11	1	-	5	42
Mangoes	425	715	382	582	1202
Other Fruits	533	664	499	413	1076
Ornamental Horticulture	5749	2983	2479	2891	2427
Cut Flowers	2768	2067	1900	2249	1878
Foliage and live plants	2981	916	579	642	549
TOTAL	18934	16467	15748	15640	17787

Provisional Data Revised

Source: Statistical Institute of Jamaica