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AGRICULTURAL DEVELOPMENT IN JAMAICA

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Background to the Agricultural Situation

According to the Agricultural Census of 1968, the land area of Jamaica is approximately 2.8m. acres, out of which 1.5m. acres or slightly more than one-half is under cultivation. There were 193,400 farms giving an average of 7.7 acres per farm. Sizes of farms vary considerably and their distribution is very unequal. Farms smaller than 5 acres represent 78 per cent of the number of farms and account for only 15 per cent of the land in farms, while those over 500 acres represent 0.15 per cent of the number of farms and account for as much as 43 per cent of the land in farms.

Thousands of small farms, several of them highly fragmented, are for the most part located on steep lands of low fertility many being too small to generate satisfactory levels of income. Paradoxically, evidence exists that there is a significant acreage of idle agricultural land. Most of the land in farms is owned and operated on a freehold tenure basis. There exists some degree of tenanted lands, and in addition there is an element of illegal squatting on a number of properties publicly and privately owned.

Of the total land area only about 20 per cent is flat or gently rolling. In general, rainfall is adequate in the northern acres, particularly the north-eastern sections. The southern plains and much of the land which lies in the rain-shadow area of the central mountain ranges have low rainfall and in some instances the lack of water for all purposes is the major factor which limits development.

Crops produced for export occupy the greater portion and the best of the lands in farms - sugar cane 165,000 acres, bananas 80,000 acres, and citrus 27,000 acres. Crops such as coffee, cocoa, and pimento occupy large areas, but, in general, they are not produced in pure stand. Coconuts produced largely for local use occupy about 100,000 acres, improved pastures 150,000 acres, while the acreage in root crops and vegetables is about 100,000 acres. About 10 per cent of the land in farms is suitable only for forestry, and a smaller percentage is sheer rock, thus reducing the amount of land which can be used for agricultural purposes. There is also a considerable acreage of permanent pasture which together with the acreage of improved pastures accommodates the estimated 300,000 cattle of all types, and other grazing animals. Slope factors make much of the land prone to soil erosion, thereby restricting its use for intensive cultivation.

The agricultural sector employs an estimated 225,000 persons (about 30 per cent of the labour force). While agriculture remains the main employer of labour, its labour-force continues to decline both in absolute and in relative terms. Sugar and bananas together account for nearly half of that labour force. In spite of employment opportunities for unskilled workers and the existence of many unskilled unemployed, there is a definite shortage of many of these workers particularly in the sugar and banana industries.

The main factors which contribute to a shortage of labour in the agricultural sector include:

- (i) the stigma which is traditionally attached to agricultural labour;
- (ii) low wages paid to agricultural workers;
- (iii) the rising reserve price of agricultural labour, due in some measure to wages paid in competing industries, e.g. bauxite;
- (iv) the seasonality of agricultural employment due to the preponderance of mono-cropping on the larger farms; and
- (v) the low productivity of agricultural labour and to a number of factors including:
 - (a) scarcity of skills which in turn leads to bottlenecks in production;
 - (b) inadequacy of training facilities for improving lower-level skills in agriculture;
 - (c) inadequacy of appropriate tools with which labour should work;
 - (d) the worsening terms of trade for agriculture with respect to imports from developed countries and the prices paid by developed countries for our agricultural exports; and
 - (e) inefficient and inadequate processing facilities.

Recent Performance in Agriculture

Production Levels

The contribution of Agriculture (including Forestry and Fishing) expressed in current values grew from \$68.4m. in 1963 to \$105.6m. in 1972, giving a compounded average rate of growth of 4.9 per cent per annum. Growth for the total economy over the same period was 9.3 per cent per annum, moving from a total value of \$511.6m. to \$1,157.6m. This indicates the growth of the agricultural sector relative to the total economy. Agriculture's contribution to the Gross Domestic Product (at current prices) fell from 13.4 per cent in 1963, ranking fourth, to 9.1 per cent in 1972, ranking seventh.

Only two of the main sub-sectors of the agricultural sector achieved real growth rates of more than 5 per cent during the period under review. These sub-sectors are *domestic agriculture* and *livestock and hunting*. Domestic agriculture achieved a 5.4 per cent growth rate mainly as the result of the large increase in the output of root crops. For livestock the main areas which recorded increases were broiler meat, and quality pork to a lesser extent. By comparison, production of exports, chiefly sugar, bananas and citrus, has shown significant decreases over the period. (Appendix Table 1.)

External Trading in Agriculture

The period 1960 to 1962 started off with a favourable trading advantage in 1960 of \$12.8m. which improved to \$29m. in 1963. Thereafter there was a sustained, at times sharp, annual deterioration leading to an adverse net balance, first evident in 1968 (\$2.6m.). By the end of the period this unfavourable position had worsened considerably, reaching an adverse trading position of \$28m. in 1971 and \$39m. in 1972.

The value of food imports increased at an average annual rate of 10 per cent during the period under review, rising from \$32.4m. in 1962 to \$71.3m. in 1972. The steep decreases in the value of exports and increases in the value of imports indicate that the agricultural sector has not maintained its level of performance as an important net earner of foreign exchange or in producing enough for local consumption to reduce reliance on imports.

Employment and Income Levels in Agriculture

As previously indicated, the estimated labour force in agriculture is about 225,000 persons. A wide disparity exists between the average per capita income of the labour force in agriculture and that of the total employed labour force. For the latter the income in 1972 was \$1,700 compared with about \$500 in agriculture. Labour productivity in agriculture is less than one-third of what it is for the entire labour force.

Capital Formation

Fixed capital formation ranged between a low of \$8.4m. and a high of \$14.4m. during the period under review. In relative terms capital formation in agriculture expressed as a percentage of total capital formation fell from 12.9 per cent in 1964 to 4.4 per cent in 1971. While the item *Sugar, Rum and Molasses* is classified under the Manufacturing Sector, since it depends so much on the agricultural sector for its raw materials it is of some interest to look at its fixed capital formation over the same period. The figure increased from \$1.9m. in 1962 to \$4.9m. in 1966, declined somewhat then followed a rising trend which reached \$5.2m. in 1971. (See Appendix Table 2.) The relative decline in investment in agriculture is indicated from the fact that while the growth rate was 8.6 per cent per annum for the total economy that for the agricultural sector was only 2.2 per cent per annum.

The Role of Agriculture in the Jamaican Economy

The role of agriculture in the Jamaican economy has been subjected to intense analysis over the last three decades. Many recommendations have been made a few of which have been implemented. In spite of attempts to prop up the industry, agriculture continues to lag steadily behind the rest of the economy, its contribution to Gross Domestic Product declining from 13.4 per cent in 1962 to 9.1 per cent in 1972. The sector has been growing in absolute terms at only a slight rate while its place in the total economy has declined considerably. Notwithstanding this, the sector continues to be an important one even for social and political reasons.

The reasons for the apparent failure of agriculture have been highlighted many times, but as already implied action taken has either been of an *ad hoc* and unco-ordinated nature or has not been deepseated enough to provide appropriate solutions for revitalizing the sector. The fact is that the organization of agriculture is so complex that it does not lend itself to easy problem-solving.

Because of the need to provide a densely populated country with a minimum standard of living, against a background of shortages of land (in

spite of the amount of idle land which exists), skilled labour, and capital, successive governments have tried to alleviate the situation by making large investments of a welfare nature in agriculture. This has resulted in a conflict between the goals of increased productivity on the one hand and those of social security on the other. In addition, agricultural labour and potential agricultural labour have been drifting to urban areas at an alarming rate, thereby creating a paradoxical situation where shortages of agricultural labour coexists with great rural unemployment.

A careful analysis of the sector reveals not only the traditionally-held dichotomy between the *Plantation* sector producing largely for export, and the *peasant* or *small-farming* sector producing largely for the domestic market, but also - and this largely among the *small-farming* sector - different types of land tenure, and systems of production. These include leasehold and freehold tenure, land settlement schemes sponsored by both the public and private sectors, cooperative farming, and, most recently, government-operated food farms.

Agriculture has also been expected to perform in the more classical sense, in terms of providing food for the nation, earning foreign exchange, providing work for unemployed - and although limited in scope - providing a supply of raw materials for industry.

It is the aim of this paper to analyse the structure of Jamaican agriculture, to examine the various sub-sectors, including land use, land tenure and land distribution, and to assess where possible the problems and needs of the sector.

Plantation or Export Agriculture

The main characteristics of the Plantation sector is its highly specialized nature of production. Because of this, technical knowledge of the crop is much greater than in cases where there is little or no specialization. The main crops produced are sugar cane, bananas, citrus, coconuts, coffee, and cocoa.

A second feature is the extensive nature of production. Large acreages are occupied by the plantation and many have large unutilized or underutilized areas. Plantations usually occupy the better grades of land which are flat or gently sloping.

Inputs of capital are much higher than in the *peasant* or *small-farming* sector because the plantations have more ready access to supplies of credit. In spite of this, however, and notwithstanding the fact that the terrain is favourable to intensive use and mechanized tillage, the plantations still utilize a considerable labour force (when this is available).

Management - usually hired management - is said to be relatively more efficient than that which obtains on the small farms. (There are some critics who believe that when adjustments are made for the adverse conditions which the *small* farmer has to face, that his decisions are quite rational and that he is not as inefficient as he is said to be.) Managers are selected for their technical know-how and their efficiency is measured by their output. Their terms of employment include relatively high salaries, housing, and other fringe benefits, or in some instances concessions to share in ownership. These undoubtedly create attractive conditions at the management level.

The marketing of export crops is a crucial factor. Export markets are usually contracted long in advance at guaranteed prices. This factor cannot be overestimated since it means that much of the uncertainty of production is removed. Although marketing of export crops is highly organized and better structured than for crops produced for local consumption, there are still many undesirable features associated with the marketing of some export crops, particularly bananas.

The current value of export agriculture in 1972 was \$27.5m., as compared with \$34.6m. in 1963 and \$31.6m. in 1967. Production figures for 1972 were sugar 373,000 tons, bananas 127,000 tons (export only), citrus 1,102,000 boxes, pimento 2,032 tons, copra 17,391 tons, cocoa 2,333 tons, and coffee 211,000 boxes.

In 1972 agriculture employed 33.6 per cent of the employed labour force. By far, the largest contributor to this was sugar cane production which resulted in the employment of 52,712 persons (peak employment during crop). For bananas the estimate for 1972 is 50,000 persons. These would, however, particularly on the smaller farms,¹ have been employed in other activities and in general for only a portion of the year. No employment figures are available for the other main export crops.

It has been stated by some critics, particularly Beckford and the New World Group of Economists, that the plantation system is responsible to a great extent for the retarded nature of agriculture and the highly skewed development of the economy. This is because the plantation was introduced into Jamaica and other countries by the Metropolitan Nations of the North Atlantic for the benefit of those countries. The income generated by the plantations, instead of being used to diversify the production base of the economy, served to promote industrialization and development in the already highly developed metropolitan economies. In many instances, decision-making is directed from outside the economy and results in linkages being formed between the plantations and the metropolitan countries rather than the plantation and the Jamaica Economy.

The Small Farm Sector

The major feature of the *small-farm* or *peasant* sector is that it is difficult to classify. No precise model exists here as in the case of the plantation. The small farmer operates under very trying conditions. He has very little land - and this of the worst quality, and often fragmented into parcels, and situated in inaccessible areas. Because of this, infrastructural connections are very poor. He has limited access to supplies of credit, and when this is available the topography of his land does not enable him to use mechanized equipment freely. Because of the need to hedge against crop failure, to provide short term cash, and to provide old age pension all in one, the production pattern of the small farmer often appears irrational to the casual observer. Marketing of his crops is a major problem, and even where markets are available, it is often difficult for the farmer to transport his crop from his holding to the most accessible point. Many times tenure arrangements are unsure and further complicate the production pattern.

¹ Small farmers also produce most of the crops which are grown on the large farms.

While some small farmers in Jamaica, because of the way they operate and due to the limitations set by land, are likely to remain subsistence oriented, others can, and are moving in the direction of viable commercial operation, e.g. some farmers under the S.S.F.D.P. Scheme.

On the whole, the language used to describe small farmers is very vague. It would seem, however, that *small* includes both the scale of operation and the amount of land farmed. The Census of Agriculture for Jamaica 1968/69 defines a farm as either: (a) one (1) square of cultivation, (b) twelve (12) economic trees, (c) one (1) head of cattle or two (2) head of pigs, goats or sheep, (d) one (1) dozen poultry, or (e) six (6) beehives. Since by definition a farm may consist of several parcels this makes the situation even more ridiculous.

Many programmes have been designed to increase the farmers' productivity. These include the Farm Development Scheme 1955-1960, the Agricultural Development Programme 1963-1967, and the Farmers' Development Programme 1968-1972. To a large extent, however, results have been disappointing, illustrating in many cases the maxim that *unless the farmer himself changes it is of little benefit to change the tools with which he works.*

The current value of domestic agriculture in 1972 was \$44.6m., as against \$18.3m. in 1963 and \$25.2m. in 1962. This is outstanding evidence that in spite of the problems confronting small farm operation, significant growth is possible given the will of the farmers and the provision of favourable conditions (possibly excluding land) for production (Table 1).

Table 1.
Production of Main Domestic Crops and Estimated* Total
Man Days Required; Jamaica, 1971

Crop	Production (short tons)	Total Number of Man-days
Legumes	7,044	891,669
Vegetables	68,110	1,739,783
Condiments	3,353	265,244
Fruits	12,416	298,060
Cereals	5,758	890,010
Plantains	25,825	543,434
Potatoes	36,146	764,606
Yams	135,435	2,444,394
Other Tubers	48,860	1,209,167

Note: *Based on the acreage cultivated, the growth period of the crop, and the required man-days per acre. No figures for actual employment in domestic agriculture are available.

Land Use, Land Tenure and Land Reform

Land Use

Jamaica has approximately 1.2m. acres of land suitable for the cultivation of crops including pasture, and an additional 462,000 acres suitable for tree crop cultivation. All this land, however, is not in farms, the total average in farms being 1.5m. acres. This land is distributed by class as follows:

<i>Soil Classes</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>
Acreage	78,500	280,400	598,800	262,800	461,780

The major problem associated with most of the land used for agricultural purposes is unfavourable topography. This to a great extent results in problems of use such as soil erosion, restriction in cropping patterns, and the inadequate provision of infrastructure. This leads to the necessity for adopting appropriate soil conservation measures. Associated with locational distribution of farms is the distribution of rainfall. Land on steeper slopes of the northern and central areas have adequate rainfall, while land in the rainshadow area which consists of the southern coastal plains experiences considerable water shortages which limit agricultural production.

The extremely wide variation in the size of farms constitute one of the major obstacles to agricultural development (Table 2).

Table 2.

Number of Farms and Acreage in Farms, by Size Groups of Farms; Jamaica, 1954, 1958, 1961 and 1968/69

Size Group (acres)	('000)							
	1954		1958		1961		1968/69	
	No. of Farms	Acreage	No. of Farms	Acreage	No. of Farms	Acreage	No. of Farms	Acreage
Under 5	139.1	249.1	141.2	270.8	112.6	198.0	155.7	229.2
5 - Under 25	53.0	502.9	53.3	546.3	41.1	398.4	37.6	340.8
25 - Under 100	5.6	232.2	4.0	176.9	3.8	167.6	3.1	127.2
100 - Under 500	0.88	214.1	0.64	131.0	0.77	185.6	0.699	148.0
500 and Over	0.332	716.1	0.314	697.8	0.347	770.8	0.293	644.0
Total	198.9	1,914	199.5	1,823	158.6	1,711	193.4	1,489

Source: Adapted from Agricultural Census, by Department of Statistics.

Further it is assessed that approximately 83,000 acres of land on farms larger than 100 acres are idle while a significant but unestimated acreage of idle land exists on farms smaller than 100 acres. Eighty per cent of the idle land falls in land classes III, IV and V.

Land Tenure

Most of the land in agriculture is owned and operated on a freehold basis.

The traditional desire to own land as a status symbol or for purposes of security (particularly in the case of small farmers) accounts to some extent for this pattern. In addition, land can be rented or squatted on free. The Land Settlement Programme has contributed significantly to the number of freeholders. Farms in many instances consist of more than one parcel and often one operator holds land under more than one type of occupancy. Freehold tenure has been associated with land fragmentation not only in terms of the number of component parcels but also in relation to sub-division of land into small parcels under the permissive *inheritance laws*.

The overwhelming attachment to a freehold type of tenancy dates back to Emancipation in 1838 when freedmen used every possible means to acquire land, even in small parcels, as some indication that they were at least visibly emancipated. The plantocracy of the day had acquired lands from the British sovereign on the payment of *quit rents*, and, to all intents and purposes, at the time of emancipation the land which they operated was held on a freehold basis. Much of this land has passed on to the heirs and assigns of the original freeholders.

Other important factors that created disenchantment with leasehold were the conditions under which land was rented. The land laws were *made* and interpreted by the plantocracy to the disadvantage of the tenants who were exploited in many ways.

Land occupancy over the years has been associated with much squatting which had started in the hilly backlands of large plantations even before Emancipation. At its inception it was associated with the *facility* granted by the estate owners to slaves and to freedmen (subsequently) to cultivate small plots of food crops and vegetables. Squatting increased considerably as absentee ownership developed. Within the last three decades there has been considerable squatting on land acquired by Government under its land settlement programme. This has been due to the fact that in some instances government acquired for settlement properties which were heavily tenanted or squatted on.

Land Settlement and Land Reform

Land settlement in Jamaica has a history beginning in 1895 when it was used as a means at settling unemployed land-hungry people on idle lands. Despite its advantages, however, it tided the country over a very difficult period, and proved to be a stabilizing influence with the people. Major faults of the earlier schemes included poor grades of land acquired for settlement, the small parcels of land allotted to settlers, and the absence of protective measures against erosion, and the fact that income derived from farming these plots were low in many instances. Much of the land is believed to have been used for speculative purposes.

Since 1960 much consideration has been given to the development of more meaningful settlement programmes. The Five-Year Independence Plan (1963-1968) for Jamaica included provision for *Land Reform*. It indicated that in this context *land reform* implied the settlement of farmers on small-sized farms of 5-14 acres and on medium-sized ones of 15-30, some of the latter to be used for establishing small-size dairy farms.

The major requirements for these settlements included the purchase of better grades of land for settlement, specification of precise criteria for selecting settlers, the use of income targets as a basis for determining the size of allotments, and the provision of housing and infrastructure.

Relatively few farms have been established under this new system, these being mainly farms of 25-45 acres for dairying. The formulation of a project along the level stated above takes considerable time even where a single enterprise, e.g. dairying, is involved. For the dairy project, interesting features were the full or near-full development of the farm provision of housing, livestock, water, etc., prior to settlement. In addition, the system is a leasehold-cum-freehold one, being leasehold oriented during the first 15 years *with the option to purchase after that.*

Prior to settlement, selected participants were required to undergo a year's training in dairying and ancillary operations, and to assist in the development of the farmers to be settled. The intention was to provide each farmer at the time of settlement, with an enterprise from which he would be able to start earning an income immediately.

Repayment is made on a phased basis. Rental paid for the land is used to offset the land charges, thus by the end of 15 years he would have repaid 60 per cent of the cost of the land and house. At that stage he may elect to continue the lease or pay the remaining 40 per cent thereby becoming a freehold operator. Under this system which has had its successes and shortcomings it has been shown that on this basis dedicated operators can earn incomes far in excess of their counterparts.

The use of a similar approach on smaller plots of land for mixed enterprises was also proposed. These were tied in with the nucleated village approach and the siting of housing and public services in the most economic manner. A net family farm income target was suggested as the basis for determining the average size of farms. Whilst the principle involved has been accepted, not much has been implemented in spite of the considerable amount of work which went into the formulation of the project. By the time this had been done there were pressures to settle land as hastily as possible because of the demand for land and the increasing level of unemployment.

Land Settlement on Private Lands

Land settlement in so far as it relates to a project managed by the private sector has neither been as extensive nor as precisely determined as that which is operated by government. Tenant farming in the private sector has been confined largely to that carried out on bauxite lands. Reference is made in this section specifically to tenant farming as carried out by Alcan Jamaica Limited.

A total of 19,255 acres is rented to Alcan tenants who will continue to occupy these lands until required for mining, provided they meet the conditions set by Alcan. The land is rented at \$2 to \$3 per acre per annum. Rented land is used mainly for the production of cash crops, but in some instances livestock rearing (e.g. cattle and poultry) is practised. Nearly 50 per cent of these farmers have been tenants on the Alcan land they now occupy for periods of 15-20 years.

Alcan provides certain services to tenant farmers. This includes an extension programme, tillage services, collective marketing facilities, and residential training courses. Fertilizer is also provided on cash and loan bases. A rigid system of rent collection is enforced. Except under extenuating circumstances Alcan repossess all land for which rental is outstanding, such land being available for renting to other farmers. Properties are inspected once per year to ensure proper maintenance. Land may be repossessed where there are indications of faulty management.

Operation G.R.O.W. (Growing and Reaping Our Wealth)

Operation G.R.O.W. was conceived by the Government in 1972 as one of the major thrusts in agriculture to revitalise the agricultural sector and to redress the existing imbalance.

The basic objectives of the programme can be summarized as follows:

- (a) to achieve the fuller use of two of the most important basic resources - land and people;
- (b) to ensure that the agricultural sector substantially increases its contribution to the economic development of the country;
- (c) to produce locally as much of the national food and raw material requirements as is economically feasible thus reducing dependence on imports;
- (d) to achieve the widest possible distribution of opportunity for access to the use of agricultural land among *bona fide* farmers;
- (e) to assist in removing the stigma attached to agricultural work by ensuring that the farmer reaps his due share of the improved living standards; and
- (f) to achieve better health standards for the population through the production of foods of higher nutritional value.

Project Land-Lease

This project is designed to assist in achieving a significant and rapid increase in the production of food crops by providing small farmers and others of proven agricultural experience, who are in genuine need of more land, with supplemental tenancies. Government leases lands from landowners who are willing to make land available, and sublets this in small units of land as a supplemental tenancy to enable farmers to produce more of the traditional food crops which they usually grow. Tenancy is for a period of five years in the first instance, with provisions for extensions where this is desirable. The land will be provided in the following manner:

- (i) by an appeal to landowners of all sizes to grant leases to Government on lands not currently being fully utilized;
- (ii) through the auspices of Land Development and Utilization Commission; and
- (iii) by Government where the provision of such lands will not hinder development of the projected Government-operated Food Farms.

Originally it was intended that only land from private landowners would be used. However, land owned by Government is also being used for this purpose. It is projected that under the first phase of this project

10,000 farmers will be placed on about 25,000 acres of land during the first two years, and that thereafter the number of farmers will be increased annually by 10,000 farmers. Projected acreage at the end of three years is 75,000 acres. Each farmer will be given an average allotment of two acres. The second phase of land lease is expected to create economically viable units, and will be associated with minimal infrastructural facilities, while the final stage moves into straight leasehold with all the necessary provisions including further infrastructural facilities.

Project Food Farms

Under this project the Government proposes to utilize approximately 50,000 acres of land currently owned (or in the process of acquisition) to produce a wide range of crops, depending on the use capability of the land. The accent is being placed on those crops which have implications for import substitution. Approximately 25,000 acres will be developed during the first year of the project while the remaining 25,000 will be developed over the next two years. Of the acreage already owned by Government, approximately 20,500 have been identified as suitable for the production of food and vegetable crops, tree crops, beef, milk, and forestry. The lands are situated in different parts of the island and involve some 18 properties. Each of these properties will be operated as a complete entity in the first instance with no sub-divisions, but it is intended to encourage groups and co-operative activity and to develop a system of long-term leasehold tenure.

The development of these properties is being planned by a multi-disciplinary team. A Farm Manager is responsible for each of the food farms now being operated. However, where the establishment of tree crops and other similar specialized operations are involved, he works in close collaboration with the appropriate Specialist in the Ministry of Agriculture.

Project Self-Help

This project is an expansion of the Self-Supporting Farmer's Development Programme which is a loan programme for approved credit-worthy farmers. The programme is financed partly from loans provided to the Government by the Inter-American Development Bank, the Jamaica Government, and the Farmers themselves.

Not much can be said about the performance of these programmes since they are at present being evaluated by the Ministry of Agriculture.

Agricultural Sub-Sector

The Sugar Industry

There has been much argument concerning the role which the sugar industry should play. In spite of recent and continuing set-backs in the industry it remains the largest single employer of labour and one of the main foreign exchange earners. Much of the dialogue is related to the fact that sugar cane occupies the best lands and is found on some of the largest farms. All three of the Quota Agreements - United Kingdom, U.S.A., and the International Sugar Quota under which Jamaica's sugar is marketed

are due for renegotiation during the course of this year. It will therefore not be possible to come to a decision about the future size of the sugar industry before the end of the year. Current costs of production are about J\$155.00 a ton. Thus if costs can be contained in the next few years in spite of doubtless continuing inflationary pressures, the Jamaica Sugar Industry can become once more commercially viable, but only if costs can be contained. Within recent months, government has renegotiated the price of sugar with the United Kingdom, the ruling guaranteed to the manufacturers being J\$168 per ton.

Bananas

Banana is another industry which continues to be problematic. A major concern is the low tonnage per acre. This results from inadequate application of technology, water shortage, and problems associated with reaping, transportation, and marketing of fruit. The existing system of export marketing makes the production of bananas for export by competent farmers more expensive than it ought to be. The main thrusts for the industry is to increase yields per acre, offer premium prices for bananas of exportable quality, and, in particular, geographical zoning of activities of the Banana Board. The new thrust for future development of the industry must take into consideration not only an important and potentially large local market but also the implications of the U.K.'s entry into the E.C.M.

Food Crops

Local production of food crops account for almost 65 to 70 per cent of food crops consumed. Cereals are an important exception, as imports account for at least 95 per cent of quantity and value of cereals consumed. The percentage of legumes and vegetables imported is considerably less. From a nutritional point of view however, the cereals are better than starches. This means that there are large imports of cereals both for human food and animal feed as well as large quantities of animal products including fish.

Increase in the production of root crops has largely been obtained by expanding acreage. Existing yields per acre are still low. A major goal is to increase considerably the yields per acre thereby releasing excess acreage for the production of other crops. Within a short period self-sufficiency in vegetables can be achieved. For these and for many of the crops grouped as food crops a major prerequisite is that of finding suitable improved and high yielding varieties, developing a package of appropriate practices to be adopted in their production, and concentrating on greater efficiencies in both production and marketing.

Other Crops

The performance of such export crops as citrus, coffee, and cacao has been well below the potential. This is largely the result of faulty technology, sub-standard management and non-application of inputs such as fertilizers, pesticides, etc., resulting in low yields per acre. Jamaica has the potential for producing considerably larger quantities of Blue Mountain Coffee to supply a market for which the price remains excellent.

Citrus, coffee, coconuts, and cacao are administered through commodity boards whose activities cover production, research and extension,

marketing and, in some instances, processing. Some of the problems facing these industries are organizational. Others relate to inadequacy of research and extension and, in some instances, a failure to adopt improved practices. In spite of considerable expenditure over the years performance has not kept pace with expenditure. Coconuts are perhaps the only exception, in spite of the ravages of the lethal yellowing disease.

Livestock and Livestock Products

Jamaica produces a range of livestock products including beef, milk, pork, goats' flesh, mutton, broiler meat, and eggs. While the production of broiler meat has been successful, the same cannot be said about other livestock products. Within a relatively short period of time self-sufficiency has been achieved in broiler meat, while, at the other extreme, programmes developed for expanding milk production have not met with the success expected, and importation of milk powder, butter and cheese continues to increase. Where beef is concerned local production accounts for about 75 per cent of the requirements. It should be possible to attain self-sufficiency within a relatively short period. Where quality pork is concerned the main problem relates to processing.

For livestock in general and particularly for poultry and quality pigs which require highly concentrated feeds, the country is in the unfavourable position of having to import most of the feeds or feed ingredients. This implies that efforts should be made to reduce reliance on imported feeds the prices of which continue to rise due to general world shortages.

Agricultural Marketing

Two aspects are of relevance, namely, that which concerns export crops and that which deals with marketing of crops produced for local consumption. Where export crops are concerned marketing is monitored largely through commodity boards. This aspect is usually more structured than the other. However, costs are high with the result that the prices eventually received by producers do not reflect the costs of production. In many cases Government has had to meet some of the short-fall in expenses of the Board to enable them to pass less unreasonable prices to growers. Jamaica has no control over shipping, and transportation is a factor which is very costly.

Where the other aspect of marketing, namely, that for products locally consumed is concerned, the position is even more problematic. Part of this is due to the large number of small producers living in difficult terrain, sometimes inaccessible, and who produce most of the foodstuffs grown for local consumption.

Marketing of these crops pass through various channels as follows: (1) parish council markets, (2) the Agricultural Marketing Corporation, (3) supermarkets and green groceries, and (4) higglers. There are 96 parish council markets located chiefly in the towns, a number of which are operated by the Parish Council and others leased to private owners. These markets are the main outlet for higglers. The domestic market first received official recognition during the Second World War when the Marketing Department was established.

In 1963 the Agricultural Marketing Corporation was formed and absorbed the assets of the Marketing Department. The Agricultural Marketing Corporation has as its main functions:

- (1) to provide and maintain adequate marketing outlets for agricultural produce grown primarily for domestic consumption;
- (2) to buy and sell agricultural produce;
- (3) to provide for the collection, transportation, storage, grading, packing, and processing of agricultural produce; and
- (4) to distribute agricultural output in the local economy.

The A.M.C. handles about 20 per cent of the output of domestic crops. In addition to its central market in Kingston it operates 8 branches and 122 buying stations. It has established retail stores in the Kingston Metropolitan area and in some parish capitals. The A.M.C. is now involved in the processing and distribution of pork. Recently it has been given sole responsibility for importing specified agricultural commodities for local consumption.

The higgler system handles between 70 per cent and 80 per cent of domestic food crops and is estimated to employ approximately 20,000 persons weekly. The wholesale higgler not only purchase for resale to retail higgler but also reap, assemble, transport, and store crops as well as grant credit to farmers.

Agricultural Credit

Agricultural Credit is provided by a number of agencies. The system is unco-ordinated and inadequate, particularly for small and medium-sized farms and for some crops, notably those for domestic consumption, and until recently only to short-term production. This unstructured system of credit induces farmers to produce crops on the basis of the ease with which they can obtain loans, as well as on the relative ease with which they may avoid repayment of loans, rather than on the productivity of their enterprises. This situation is counter-productive. The Agricultural Credit Board is responsible for the major portion of loans to farmers but most commodity boards, the Jamaica Development Board (JDB), commercial banks, and other private institutions all extend credit to agriculture.

The Problems and Needs of Agriculture

Many of the major problems of agriculture are associated with the structural defects within the sector. In summary form, these problems relate to the following:

- (1) the highly spread *distribution of land* ownership and the heavy concentration of the very large number of very small farm on land having steep slopes and poor quality soils;
- (2) the low *level of skills know-how and managerial ability* of the farm population as a result of which outmoded practices are employed in many areas of agricultural production to give generally low yields;
- (3) the lack of adequate *basic infra-structure and soil amenities* in the rural areas (roads, water, electricity, etc.) makes living in the country unattractive and encourages the migration of the younger population, as a result of which the average age of the persons engaged in agriculture now exceeds 50 years;

- (4) with the *unfavourable topography* of a large portion of the land in agriculture and the *excessive fragmentation* of farm holdings, many farms are too small in size to provide a farm family with an adequate income;
- (5) although there is a large pool of unemployed and under-employed persons, there is a disenchantment with the unskilled work opportunities which are available in agriculture and this leads to *labour shortages* in the sector; this in turn is associated with the stigma which is attached to agricultural work at most levels;
- (6) inadequacy of *credit facilities* for capital formation (including land purchase) and for working capital;
- (7) inability of some farmers to provide legal *documentation of ownership* of land;
- (8) the *high level of investment* required to bring lands in hilly terrain into profitable production (terracing);
- (9) the inadequacy of *research* for the development of improved varieties of plants and animals;
- (10) the need for more effective marketing facilities and adjustments of the high price spreads between farm and retail outlets, improvement in the quality of products offered;
- (11) inadequate development of group activities among farmers, particularly the small farmers who could benefit from organized co-operative effort;
- (12) inadequate *training facilities* necessary to up-grade the skills of farmers who could benefit from organized co-operative effort; and
- (13) inadequate measures to conserve and protect the limited *soil resources* of the country and to ensure that they are used to their optimum potential.

In more specific terms the problems which affect the agricultural sector stem largely from deficits in the four broad group of factors involved in agricultural production namely land, labour, capital, and management. Rational evaluation of performance is relevant only within the context of the policy framework implicit or explicit, which determines the roles expected of the agricultural sector. In this context these apparent roles previously related to:

- (a) providing food for the nation;
- (b) providing foreign exchange;
- (c) import substitution;
- (d) helping to alleviate social problems; and
- (e) providing reasonable and improved levels of living for the rural population.

Epilogue

The position in which agriculture now stands requires a dynamic policy for development within the overall ambit of national development. Such a policy must assess the various roles which the sector is expected to perform, remove inconsistencies, and determine priorities. For example, the agricultural sector cannot be expected to be a sop for unemployed, unskilled persons and at the same time be blamed for not showing a marked and sustained increase in the contribution of G.D.P.

If agriculture is to make its fullest contribution to economic development there needs to be fuller use of the total resources - land and people - which are available for agricultural production, but which, currently, are not being used at all or are not being used to their best advantage.

Emphasis must be placed on measures for achieving a more equitable pattern of land distribution. In addition, there must be a more rational and intensive pattern of land use. The stage has been reached where emphasis should be placed on rights of *usufruct* rather than of ownership thereby implying movement toward a greater degree of leasehold tenure, with less accent on freehold tenure.

During 1973 Government undertook an in-depth study of the Agricultural Sector specifically as a means for bringing about changes expected to lift agriculture from the stagnant position into which it has fallen. Two papers were presented to Parliament, the first on 21st November, 1973 and the second on 27th March, 1974. Some of the proposals have already been implemented, but others of a longer term nature are still being planned.

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Appendix Table 1. Contribution of Agriculture to G.D.P. at Factor Cost by Sub-sectors: 1962-71

(Constant Prices - Base Year 1960 - Million \$)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	Percentage Change 1962-1971	Percentage Av. Annual Rate of Growth 1962-1971
<i>Export Agriculture:</i>	21.4	22.7	23.3	24.2	25.2	23.9	23.6	20.9	20.9	21.9	2.3	0.3
Sugar Cane	14.0	15.2	15.7	15.8	16.6	15.3	15.1	13.5	13.6	13.7	2.1	0.2
Other Main Exports	7.4	7.5	7.6	8.4	8.6	8.6	8.5	7.4	7.2	8.2	10.8	1.2
<i>Domestic Agriculture:</i>	15.5	16.5	17.6	17.6	19.8	18.4	16.1	16.3	17.4	24.9	60.7	5.4
Root Crops	5.6	5.9	6.6	7.3	8.9	7.8	6.7	6.9	7.4	13.3	137.5	10.1
Other Primary Foods	9.9	10.6	11.0	10.3	10.9	10.6	9.4	9.4	10.0	11.6	17.2	1.6
<i>Livestock & Hunting</i>	9.6	10.2	10.7	11.3	12.1	13.0	13.5	14.0	15.5	15.8	64.6	5.7
<i>Fishing</i>	3.0	2.6	2.8	3.0	3.2	3.3	3.1	2.6	3.2	3.2	6.7	0.7
<i>Forestry & Logging</i>	2.4	2.3	2.3	2.3	2.5	2.3	2.4	2.3	2.5	2.6	8.3	0.9
Total	51.9	54.2	56.7	58.5	62.8	61.0	58.7	56.1	59.4	68.9	32.76	3.2

Source: National Planning Agency, *Economic Surveys*, Jamaica.

Appendix Table 2. Capital Formation for Agriculture and the Rest of the Economy; Jamaica, 1962-1971

(Million \$)

Years	Fixed Capital Formation			Agricultural Machinery & Equipment
	Total	Agriculture	Percentage of Total	
1962	98.2	10.3	10.5	2.3
1963	91.6	8.4	9.2	2.1
1964	111.8	14.4	12.9	6.9
1965	124.2	11.7	9.4	7.3
1966	146.0	13.0	8.9	4.2
1967	170.0	10.8	6.4	5.6
1968	221.4	9.8	4.4	4.4
1969	252.1	11.1	4.4	5.0
1970	265.9	11.7	4.4	5.1
1971	286.2	12.6	4.4	7.4