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JAMAICA

Technical report: The agro-industry system of fruits and vegetables. Analysis and recommendations*

Prepared for the Government of Jamaica
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Mr. Daniel Perraud,
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* This document has not been edited.

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PRELIMINARY NOTES

- Exchange rate used: 1 US$ = 8 J$
- List of abbreviations:

AMC: Agricultural Marketing Corporation;

FTI: Food Technology Institute;

JAMPRO: Jamaica's Economic Development Agency;

JAS: Jamaica Agricultural Society;

PMO: Producers' Marketing Organization;

RADA: Rural Agricultural Development Authority.

TABLE OF CONTENTS

ANNEXES

COMMENTS BY THE PROJECT BACKSTOPPING OFFICER

Jamaica is a big tropical fruit producer in the Caribbean region. Fruit processing industry in Jamaica faces several problems due to the unstable fruit market situation in the country in general and the high raw material prices in particular. Direct linkages and good co-operation among local fruit producers, industrial processors and traders do practically not exist. middlemen are acting and dictating the prices.

Any improvement in the domestic fruit processing would require a stable and reasonable price policy and a direct supply of the raw material by the farmer to the processor. An appropriate information system would have to be established, including fruit price monitoring: a contract system should be introduced which regulates the commercial linkages of the fruit farmers, producer's marketing organizations and processors among each other.

In Mr. Perraud's report all these problematic points are shown, examined and evaluated. Qualified recommendations for an improvement of the present fruit industry situation have been made. Mr. Perraud's report is an important and valuable source of information which contains very useful recommendations for the co-operation between fruit growers and processors and the development potential of the national fruit industry with a view to fully meeting the domestic fruit demand and possibilities for export. His report can also be considered as a valuable instrument showing all measures to be taken for the establishment of good relations and close co-operation among fruit farmers, processing industrialists and traders, outlining suitable actions for the development of an appropriate value-added fruit processing industry for bananas, citrus fruits, etc. and for the creation of the relevant mechanisms for access to the international data bank of technology and the international market.

SUMMARY

* Agro-food processing in Jamaica is facing a range of severe problems which have prevented its full development. These problems principally result from scarcity and from the high prices of raw material. Any improvement in agro-food industrialization requires a steadier and cheaper supply of domestic fruits and vegetables.

* The reasoning in this situation can be identified mainly in the marketing of farm products. Most of the fruits and vegetables are marketed through a number of separate marketing relations, which are generally of a short-term type, between agents which are unequally informed of the final market situation. Farm products are rarely graded, which results in an uneven competition for the same fruits and vegetables, between the domestic fresh market and the processor's demand.

* Partly unpublished data on farmgate prices show an extreme variability of prices, not only between seasons, but also between geographical areas. Consequently, at both productive ends of the system, in farms and in processing plants, the rationality is partly a speculatively one, with few incentives for an expansion of production and productivity.

Subsequent recommendations include:

* An improvement of the information system, in order to smooth price differences between geographic areas.

* A planned, selective, conditional development programme at the farm level; this programme should include an obligation of contract supplying to the processing industry for a given part of the production increase.

* A generalization of Producers' Marketing Organizations, which should multiply the possible outlets of their members' production; these PMO's should enter the fresh domestic market, so that the domestic fresh price could decrease, and farmers could benefit from a part of intermediate margins.

* An extension of the system of contracts between farmers or PMO's and processors.

* The erection of a Council of Fruits and Vegetables Marketing, where representatives of the involved agents could co-manage the system, on a consensus or compromise basis.

* At the processing level, the priority should be to fully use existing capacity, and to fully supply use existing capacities, and to fully supply existing capacities, and to fully supply existing demands. A further step would require a full implementation of the "unique niche" strategy based on a coordinated and flexible industrial development.

I. INTRODUCTION

A. General framework of the mission

1.1 The agro-processing industry is the main manufacturing industry in Jamaica. It is based on the farm production of a wide range of tropical fruits and vegetables. Consequently, it should be a good basis as well for a full supply of the domestic market, as to export processed food. This opportunity is far from fully used.

1.2 An Agro-Food Processing Unit is being developed at JAMPRO (Jamaica Development Agency). Its purpose is to mobilize the sector, and to promote an articulation of raw material production and of industrial development. It is trying to implement a global approach of the problem and to define a realistic and efficient strategy.

1.3 The purpose of the mission was to carry out a general analysis of the situation, and to establish guide-lines relevant to this strategy (See Annex I, Terms of reference).

1.4 The analysis as well as the proposals had to take into account general macro-economic constraints, principally the ones coming from a structural adjustment situation : strong priority to hard currency exports, high levels of interest rates, "deregulation" processes.

B. Delineation of the study

1.5 Several detailed studies have already been realized on agri-food processing problems in Jamaica, namely the following items of the Bibliography: Planning Institute of Jamaica, Ventura, Wilson. In addition, during the first part of the mission, a feasibility study on a new puree plant was realized (Cronberg).

1.6 All these studies have pointed out several important limitations of the existing agri-food systems. As it will be further explained, two major interrelated factors of these limitations are the insufficient supply and the high price of raw material.

1.7 A few days were enough to confirm that the disarticulation of agri-food systems and a lack of linkages between sub-sectors and between subsystems indeed resulted in a basic and severe problem of raw material and of prices. From this time on, I decided to focus on a detailed analysis of the linkages and of the prices system, and on proposals to enhance the coherence and the compatibility between sub-sectors and subsystems. Consequently, the present report will principally deal with paragraphs 1, 3 and 4 of the terms of reference. Paragraph 2 will be approached only from a wide, strategic point of view.

1.8 The scope of the study has been restricted i) to these sub-sectors which suffer most of incoherence and disarticulation, ii) to commodities which can both be processed or consumed as fresh products. In addition, some agri-food sectors are already managed under specific organizations : citrus, coffee, cocoa, banana and pimento. These organizations can have their problems, but they form separate, autonomous subsystems.

1.9 Consequently, an emphasis has been put on a range of fruits and vegetables (non traditional export crops) which do not have any specific form of regulation, except through free markets, namely: carrots, tomatoes, cucumbers, mangoes, papayas, pineapples, ginger, pepper, and several fruits whose farm growing has only recently begun: ackee, soursop, tamarind are still generally picked up from wild trees, even though plantations have started developing. (Annex III gives a short presentation of these commodities). Nevertheless, some of the conclusions of the following analysis are also partly relevant to the situation of organized commodities subsystems: a similar lack of raw material is observed, for instance, in the citrus and bananas sub-sectors.

C. Background information

1.10 The existing studies quoted above (See 1.5 and 1.6) have

already described a number of shortcomings of agro-food processing industries:

- small industrial size;
- outdated equipment;
- poor adjustment to domestic needs and demand (range of products, packaging);
- poor adjustment to export requirements;
- low quality and insufficient controls of quality;
- lack of backward linkages.

1.11 The observations of this mission confirm these shortcomings and the loss of industrial development and exports opportunities which result from this situation. Briefly summarized: even outdated, the industry equipments are still under-used; even for a too limited range of produced outputs, the demand is not fully supplied.

1.12 A part of the problem, and indeed a major one, is an insufficient, irregular, partly inadequate, and costly supply of raw material.

1.13 Explanations generally given for the low, and hardly improving, levels of production are:

- the dominating small scale farming

results in low yield and highly seasonal production;

- too much land is kept idle, either by private owners or by the government;
- subsistence crops on family farms, and sugar cane on large estates, tend to prevail, thus preventing a massive re-orientating of production towards new crops, better adjusted to expanding demands;
- the isolation of production areas and the bad condition of roads prevent a smooth marketing and transportation of fruits and vegetables.

1.15 Explanations given for the generally high prices of raw material are:

- the small scale of farming induces high costs of production;
- the "higglers" (See Annex IV), who market most of the fruits and vegetables, hold a bargaining power which results in undue prices enhancements on the market place.

1.16 Even though the limitations of the processing industry can only partly be related to the raw material problem,

the latter has become the main focus point in the management of agri-food sub-sectors. This economic stalemate, which results in a lack of development at both ends of the system, has eventually been turned into a classical ideological stalemate, confronting an industry point of view on the agrarian question (the economic inefficiency of outdated farm systems), and the farmers' reluctance when faced to uncertain and unorganized markets. A crystallization of these opposed behavior seems to have frozen the development of the sectors.

1.17 A closer view to the systems, and to the ways they work, can help to point out the roots of the problems.

II. A REGULATION BY SHORT-TERM, ATOMIZED MARKETS

A. A scheme of the relations in agri-food systems

2.1 The scheme of the relations shows a number of different, separate relations (See Annex IV). Few of them go directly from the farmer up to the end-user. Only large farms have direct links, either with foreign markets, or with large domestic users of fresh products (super-markets, hotels), or with processors. The bulk of family farms are linked to end-users through middlemen: agents of exporters or of processors, higglers who supply the domestic fresh market. Only those few family farms who belong to a Producers' Marketing Organization (PMO), or who have contracted with processors, have more direct links with the final user.

2.2 The links between the parts of the system can be i) either short-term, week to week, and sometimes day to day, market, ii) or mid- or long-term relations, based on formal or verbal agreements; iii) based, or not, on reciprocal information on the conditions of the final market. Most of the fruits and vegetables markets are of a short-term, not fully informed type. This is the case for most of the markets which involve family farms.

2.3 In addition, there is a lack of lateral information: even if the exporters of fresh products and the processors are informed of the conditions of the final market they supply (prices of fresh tropical fruits in a given foreign country, prices of processed food), they are not completely aware of the volume of supply and of the range of prices in areas other than the ones where they have agents.

2.4 Most of these separate markets relate to specific qualities and varieties of products. But this differentiation of products is rarely effective. This happens only in few situations: the large farms who have a direct access to export markets can split their output into different qualities and market accordingly; the exporters select the required fruits and vegetables in the farms their agents have indicated; the farmers who have contracted with processors can supply them with qualities required for processing, and sell the rest of their production to higglers; in PMOs, only specific qualities will be market, through the PMO, to exporters or supermarkets. In other, much more frequent, situations, different markets will be supplied with the same bulk products: domestic fresh markets receive products which could have been suitable for exports or which should be processed; processors receive also fruits

and vegetables which could be sold on fresh markets, as well as rejects hardly suitable for processing.

2.5 The reason is that there is generally not choice of outlets for a given product, in a given community, at a given moment. Most of the products are perishable. Consequently, sales in bulk are the rule, and sales according to a kind of use are exception.

2.6 A consequence is that, even if they require a lower quality, processors often have to compete with the demand, and the prices, of the domestic fresh market.

2.7 There is no reason for most of the sub-sectors to be influenced, let alone to be regulated, by world prices. Only these large-scale farms, who grow and directly export, have to adjust their production and their costs to the world prices. Since higglers are present everywhere, other markets are dominated by the domestic price of fresh products, as transmitted by the higglers. Exporters who work with agents will tend to pay a little more than the local higglers' price, since they take only top quality products; processors will try to benefit of locally and temporarily low higglers' prices in order to obtain cheap supply. The "suggested" farmgate prices, published in newspapers by the RADA Marketing Division

(See Annex VIII), are related to export prices of fresh products, but they seem to have little or no effect on the marketing, since hardly anybody knows what they represent.

B. An extremely volatile price system

2.8 The system shows an extreme variability of price levels, according to the regions and to the periods of the year (See Annex V). Minimum and maximum values observed by the Ministry of Agriculture, Data Bank, range from 1 to 33 for tomatoes, from 1 to 12 for cabbage...

2.9 It partly comes from seasonal differences. Indeed they are important, as expected for most of these commodities, even though some of the seasonal prices variations cannot be explained by changes in volumes of production (See quarterly figures of productions and prices, in Annex V). For most of these products, no steady supply and no price safety can be reached if these heavy seasonal variations are not softened.

2.10 More surprisingly, regional price differences, observed during a given month, are often as large, and sometimes larger, than the seasonal ones. They generally range from 1 to 2 or 3, and reach 1 to 10 and 1 to 13 for tomatoes.

2.11 Many times, low prices are observed in regions where the acreage of a given product is large, and often in regions where the yield per acre is higher than the average. It happens in St Elizabeth for tomatoes, in Manchester for tomatoes, carrots and cabbage, in St Thomas for carrots, etc. On the other hand, St Andrew (with the largest market place: Kingston) shows generally high prices with relatively low yield.

2.12 The reasons of these important phenomena are:

- geographic isolation, difficulties and cost of transportation;
- a lack of links between the family farms supply and different possible outlets;
- a lack of information on markets conditions in different parts of the system.

2.13 The results are:

- AN EXTREMELY FRAGMENTED MARKET, WITH JUXTAPOSED SURPLUSES AND SHORTAGES SITUATIONS;

- POSSIBLE LOSSES OF PROFITABLE OUTLETS FOR THE FARMERS, AND OF PROFITABLE SUPPLIES FOR THE PROCESSORS.

C. the higglers' system

2.14 The name of "higglers" is used to define a number of situations, which all cover a part of the wholesale function (See Annex IV). Higglers are numerous, different, and play different roles at different stages of the market. Consequently, a strict cartellization is unlikely.

2.15 Since the domestic fresh market plays a determining part in the general pricing of the system, the higglers are a dominating group: they are informed both of the situation on the fresh market and of the condition of supply, at least locally. Since markets are fragmented, there is probably very little competition between higglers who buy in a given area: the local volume of supply, the more or less urgent need for local farmers to get rid of their output, are sufficient to give the higglers a temporarily strong bargaining power. Even though, as any wholesale sector, they probably play the role of a buffer between the moves of local supplies and of final demand, local gluts give them good opportunities of profit.

2.16 Data on the differences between farmgate and market prices (See Annex V) show that the total margin is generally roughly 50 % of the retail price, which covers higglers' margins, transportation costs and retailers' margins. Even if, locally and temporarily, actual margins far exceed this amount, the average value is not excessive.

2.17 Even though practices of higglers can be seen as parasitic and harmful (for instance, it is probably true that they foster praedial larceny), they must also be seen from an economic point of view:

- they fulfil the wholesale function, and there is apparently no efficient way to replace them;
- on the average, they take reasonable margins;
- any other kind of wholesale sector would probably have the same bargaining power, due to the conditions of production and to isolated supplies;
- their ability to play on margins and their omnipresence would probably make them able to efficiently resist any attempt of price control.

D. Organized marketing

2.18 The biggest food processing company, Grace Kennedy, is trying to develop a system of contracts (See Annex IV). Except for carrots, these contracts are still rare, often verbal, and sometimes (papaya) limited to very few large growers. Some Producers Marketing Organizations (PMO) or large farms steadily supply specific demands (exporters, hotels, supermarkets), generally under verbal agreements.

2.19 Some of the features of the Grace Kennedy contracts seem to be able to help establishing long term relationship, and guaranteeing a more secure marketing for farm products, and a better supply for

processing plants: e.g., an involvement of the processor in supplying farm inputs, fixed figures for the volume of deliveries and for the prices. But this special kind of contract is still rare, even among Grace Kennedy contracts.

2.20 There have been frequent failures in such attempts of contractualisation, both from the farmers' and from the processors' sides. These failures have become one of the most often expressed reasons of mistrust between farmers and processors.

2.21 There are at least two reasons for these failures:

- even when they take a written form, bilateral commitments between a processor and a farmer are difficult to enforce;
- the special situation of markets does not encourage long term, priced in advance, marketing; any temporarily lucky market condition (a high price for farmers, a large surplus of products using the same equipment at the processor's plant) often results in a breaking down of the contract.

2.22 For historical reasons, cooperatives are often seen, in Jamaica, from a controversial, political point of view, rather than from an economic one. That is maybe one reason for the surprising scarcity of marketing organizations of farmers, even when the shortcomings of individual marketing seem to be obvious. Among the products

which are emphasized in this study, only a few marketing groups have been signaled in the carrot production. Some PMOs are developing, mainly on export vegetables markets (See Annex IX). On the other hand, highly organized commodity systems exist (coffee, citrus, bananas,...), partly based on active cooperatives or farmers' associations. This shows than, in a fully organized sub-sector, collective forms of marketing can be implemented and work.

III. CONSEQUENCES OF THIS MARKETING SYSTEM

A. Consequences at the farm level

3.1 Data coming from the Ministry of Agriculture show a large positive difference between farmgate prices and costs of production, for every commodity (See Annex VI). A closer look at the methodology would be required in order to see whether it comes from a statistical discrepancy.

3.2 If these figures are an expression of the reality, it means that the above-mentioned markets system (See chapter 2) results in prices and margins profitable for both the higglers and the farmers, and unfavourable for buyers: processors and consumers. The isolation of farmgate sales from retail sales can make it possible.

3.3 Why these apparently high margins, even for farmers, do not induce a rapid expansion of production and productivity at the farm level ? The reasons which can be given illustrate a classical point of agricultural economics: wild, unorganized markets are often an inadequate mean of efficiently regulating farm sectors:

- several of the concerned commodities are permanent crops; they require a risky, long term investment;
- they are perishable products, with a highly seasonal production, whose peaks are not fully predictable, since they are dependant from climatic conditions;

- for socio-political reasons, there is very rare collective grouping, bargaining and marketing of the products;
- farmgate markets are fragmented, with a very limited range of outlets available at a given moment.

For these reasons, an individual family farmer has almost no means to have an effect upon either of two determining factors: the level of its output at a given moment, the prevailing local farmgate price at the same moment. Most of the profit, or losses, come from the chronological convergence, or divergence, of a peak of production and of a fair level of price.

3.4 Consequently, the process of valorization tends to take the form of a speculation, thus being separated from the process of production: the profit which can be drawn from a favourable market situation, when output is available, is much higher than the returns which can be expected from an increase in productivity.

3.5 The cautious, almost Malthusian, behavior of farmers may have anti-economic consequences, but it is not irrational. Expanding production, increasing yield per acre, is costly, difficult, with little gain expectation. It would require the availability of, and an easy access to, such means of growth as: additional land, irrigation, reasonably rated credit, inputs, extension. All these factors are rare. In addition, as was mentioned above (See 2.8),

low prices are frequent in areas with large acreages and high yield of a given product. Too much output in an isolated area can result in a decrease in price. This does not encourage an expansion of production and of productivity. In this case, **betting on a market situation is easier, safer and cheaper than betting on a long-term investment.**

3.6 Consequently, the lack of additional land is only part of the problem. Of course, there is a land problem in Jamaica. More good land would help. But, if there were incentives to expand production, and credit to invest, land would probably not be an insuperable bottle-neck.

3.7 On the other hand, the lack of irrigation is general for family farms. It is specially harmful in intensive farming areas (fruits and vegetables) of central and southern Jamaica. It has two negative effects: i) on the level of productivity, ii) on the seasonality of production, thus on the conditions of marketing and on the variability of prices.

3.8 All these factors are probably determining in explaining the very slow pace of production increases for most of the products (See Figure 3 and Table 1). Generally, at the best, recent production levels only catch up with levels which had been already reached years ago.

B. Consequences at the processing level

3.9 Under these market conditions, the processors cannot have a steady, or even a predictable, access to supply. The reason is that they can generally not compete with the dominating fresh market prices.

3.10 On the other hand, they can take advantage of periods of local surpluses to obtain massive and cheap raw material. It is possible that processors do not benefit from every local and temporary glut, because of a lack of physical (distance) and commercial (no agent in the area) linkages. Consequently, this chaotic supply results in i) an under-usage of equipment, ii) breaking-downs of long-term agreements, when several available cheap supplies compete for the same equipment (e.g. papaya and tomato to be processed into puree).

3.11 These markets conditions can induce an economic behavior which is not fully industrial, and which looks a bit like the farmers' behavior. With that kind of markets, processing fruits and vegetables involves speculative practices: betting on gluts and prices collapsing at the raw material level can prove more profitable than developing new products and new technologies which could not be regularly supplied.

3.12 In addition, bulk supplies, and the necessity to limit the periods when equipments stay idle, result in inadequate supplies which do not help enhancing the quality of processed products.

3.13 Insufficient quality and uneven supply result in a limitation of the industrial development of some strategic products, specifically:

- processed mass products, such as juices in individual or family packing;
- high quality, processed exports, such as tropical blends.

Both these markets ask for a regular supply, which is difficult to ensure with an uneven and unpredictable access to raw material.

3.14 Processors tend to offset that limitation in the following ways:

- either by focusing on long conservation, low quality packing (cans);
- or by using other raw material sources (artificially flavoured juices, imports).

Consequently, there is a lost opportunity of fully using the ability of Jamaica to produce a wide range of high quality fruits and vegetables (See in Annex 3, imports of pineapples and tomatoes).

IV. A GLOBAL STRATEGY OF AGRO-INDUSTRY DEVELOPMENT

4.1 If the above analysis is correct, there is a lack of incentives to development, at both productive ends of the system (farmers and processors). This situation results from:

- the markets structure;
- a lack of linkages between these productive sectors;
- a correlative lack of information.

4.2 The main objectives of a development program should be:

- increasing the involvement of both farmers and processors, so as to pass from a partly speculative, to a true agro-industrial relationship;
- on the processors' side: increasing and partly sharing the final surplus;
- on the farmers' side: increasing the volume, and decreasingthe seasonality, of outputs;

A. The prices system

4.3 At the final level, it is necessary to aim at high value, high prices, products, so that prices requirements of processors can become more compatible with farmgate prices levels. This requires a full application of the "unique niche" strategy (See Chapter 8).

4.4 **Grading fruits and vegetables should be expanded. It would result in:**

- **a progressive splitting up of fresh and processing markets, thus reducing the generally uneven competition between these two demands;**
- **deliveries of supplies specifically adjusted to processors' requirements;**
- **maybe, when possible, a development of specific production systems specialized in the less costly production of raw material; this would require an additional study, but first indications show that it is disputable for papaya, but that it could be possible for carrots.**

4.5. **Grading products can permit to progressively introduce "blend pricing" (See Annex VII) of collective supplies (See Chapter 7: PMO.). Blend pricing results in a compensation between first grade (high quality, high price) products and lower grades, so that the average pricing of a given farmer's output never reflects only the lowest price (processing price).**

B. Increasing the production

4.6. **An important increase in the fruits and vegetables production is the essential way of:**

- **lowering the general level of prices, both on fresh and processing markets;**
- **saturating the domestic market so as to increase this**

part of the production which can be available for processing.

4.7 This major objective can be reached by creating incentives. First of all, guarantees should be given to farmers of a safer, less hazardous, marketing (See, in the same Chapter, Section B).

4.8 Other incentives could be merged in a conditional, selective, development programme, which would (See Chapter 6) supply eligible farmers with the required means of production and support services.

4.9 This effort would aim at:

- increasing the productivity;
- and/or increasing planted acreages;
- and increasing the period of reaping.

4.10 Aiming at lower prices can be positive for processors and consumers, but it seems to be harmful for farmers. Actually, if it results from higher yield and from a better use of land, the lower price per unit will be offset by the volume of production, at least for those farmers who increase their productivity. But it could result in a lower income for farmers who do not expand. This social problem should be specifically addressed.

4.11 This process can work only if areas where farmers increase their production are not isolated. If they are, it will result in local

gluts and prices collapses. In order to prevent such an outcome, changes have to be introduced in:

- the information system;
- the marketing system.

C The information system

4.12 It is essential to make the system much more transparent. This would result in:

- a decrease in the isolation of markets: a more unified market could increase opportunities on both sides, and smooth the prices;
- preventing monopolistic effects or exaggerated bargaining powers related to unequal information,
- a decrease of unfounded mistrusts between agents, when these mistrusts are principally based on an insufficient knowledge.

4.13 This will require an important effort in:

- rapidly gathering markets and prices information;
- issuing it as a continuous flow;
- providing reliable basic data on conditions of production, both at the farms and processing levels.

D. An improvement of marketing through more direct linkages

4.14 A development of contracts between the production and the processing levels would permit to reduce speculative behaviors, and

would result in safer marketing and prices.

4.15 These contracts should include a guarantied minimum price provision, as well as guarantied minimum volumes of supplies to processors. This minimum price, even though it is mandatory only for contracts, could become a general reference in the pricing system.

4.16 The already mentioned wider diffusion of information should be part of an effort to multiply the number of possible outlets for a given commodity, in a given area, at a given moment.

4.17 A possible direct marketing from the farm to the fresh market level should be encouraged as much as possible. For most farmers, that would be possible only by grouping individual productions. The result of direct farmers' sales on market places should be:

- an increase of the competition on the fresh market, and possibly a further decrease in prices at this level;
- for the farmers, an access to a part of the middlemen margins.

4.18 For a major part, this strategy of marketing improvement should rely on some kind of cooperative action at the farm level.

E. Important remarks

4.19 For several reasons, any kind of general and direct involvement of the government in the management of these systems would be

extremely harmful. These reasons are:

- specific historical reasons;
- a general "deregulation mood", in a structural adjustment context;
- actually, in other countries, it is very difficult to find even a single example of a strong and efficient public control on fruits and vegetables sub-sectors.

4.20 Consequently, the principle should be to juxtapose, rather to superimpose, new linkages and marketing practices, without preventing, let alone forbidding, former market forms to survive. The first results, as well as the availability of government or international support, would set the pace for an extension of programmes.

4.21 An important task to be performed at an early stage of the programme should be to carefully select limited areas of production, processing companies and priority commodities in order to first implement, test, and further adjust the proposed strategy.

4.22 Drawing fully detailed and adequate programmes requires a thorough knowledge of the Jamaica context. Consequently, among the following proposals, attention should be paid to general lines, rather than to details which could prove inadequate or unrealistic in the specific context of Jamaica.

V. PROPOSAL OF AN IMPROVED INFORMATION SYSTEM (See annex VIII)

A. Improving the collection and distribution of information on the domestic market situation

5.1 There is a project of a study of a marketing intelligence network, carried out by the Ministry of Agriculture (Mrs Marcia Marville). Therefore, subsequent proposals could be revised according to the results of that study.

5.2 The existing information collected on a weekly basis by the RADA Marketing Division should be expanded so as:

- to cover all fruits and vegetables;
- to multiply the production and market areas where price information is collected;
- to collect information on the supply situation in several areas;
- to collect information on the whole range of farmgate prices, as well for domestic as for export use;
- to collect information on several retail prices, observed in numerous market places;
- to centralize specific demands (super-markets, exporters, processors) which are not covered by, or which exceed, contracted supplies.

5.3 Centralized, this information should be WEEKLY distributed to essential agents: PMOs, large farms, exporters, super-markets, processors. Taking into account possible delays in mail distribution, an extensive use of newspapers and radio channels should be considered. In addition, that information should be available, by telephone or by two-ways radio, as it is already the case. A small levy on the users of the system could help to offset additional costs.

5.4 Since it is essential to increase the number of areas and the number of observations, a larger number of local officers of government agencies should collect part of these observations during their usual visits to farmers. This could include, for example, RADA-Extension officers and the Data Bank network.

B. Monthly and quarterly information

5.5 Monthly data should be published on:

- the situation of main export markets, including prices data;
- a summary of weekly information on domestic supply and prices.

5.6 Once every quarter, the same bulletin should include additional information on:

- weighted prices indexes (using the Data Bank methodology);

- a short analysis of the evolution of supplies and demands of principal commodities;
- a forecast of crops of the next quarter.

C. Yearly reliable data on the costs of production

5.7 For all these commodities which proceed into a further economic circuit, either as fresh exports, or as raw material for processing, it is essential to know whether, or not:

- costs of production at the farm level are compatible with final (export or processed food) prices;
- there is a normal profitability for every agent involved in the system.

5.8 These data would be a basis as well for determining government policies, as for setting terms of contracts and agreements between economic agents.

5.9 At the farm level, the present cost of production calculation should be updated, considering several production systems, for instance: large-scale production; family farm with top conditions of production; family farm in marginal areas.

5.10 This updating should begin with an extensive study of the diversity of existing conditions of production, and of the range of productivity gains available in several hypothesis (gains from advanced technics, from irrigation, from a change in

varieties,...). This study would help to select government priorities among:

- those fruits or vegetables which can be used as elements of a realistic agri-food strategy,
- those which require a special effort,
- and those for which there is definitely no competitive advantage.

5.11 Further yearly updating of farms costs of production could be based on a limited sample of farms which, in exchange of credit or of special support service, would have to hold a farm diary, such as the one Ivan Brodber has realized for the credit system.

5.12 For the above-mentioned reasons (See 5.7), a cost of processing should be yearly calculated for every kind of processing. An additional advantage would be to compare the efficiency of several equipments, already working in Jamaica, or available elsewhere.

5.13 These costs of processing would be observed in the accounting systems of processing companies.

5.14 These data would be yearly compared to the prevailing domestic and export prices, in order to adjust long-term policies and contracted prices

VI. PROPOSALS AT THE FARM LEVEL

6.1 At this level, most of the possible proposals involve either macro-policies (land, irrigation, credit), or specific programmes led by different government agencies. Consequently, the present proposals principally aim at defining general guide-lines, rather than at drawing new, precise programmes.

A. Is a selective strategy necessary with regards to the conditions of production of raw material

6.2 In the industry and in government agencies, people in charge seem to be hesitating between possible priorities which could be given either to large-scale production (independent or integrated to processing companies), or to family farms.

6.3 The advantages of large-scale farming are:

- mass production, with scale economies;
- a better and more consistent quality of the products;
- a better information on markets situation and on new technologies;
- correlatively, a better adjustment to changes in the economic context.

6.4 The specific advantages of large-scale farming integrated by processing companies are supposed to be a better adjustment to processing requirements.

6.5 Nevertheless, a full integration of fruits and vegetables production by processors can be related to two different behaviors: i) a desperate move to guarantee a safe supply of raw material, with little chances of economic success, ii) or a profitable operation. In the latter case, rational will lead to first supply the more advantageous demands, principally a fresh market. In the latter case, the management of production will not be basically different from that of any large-scale farm.

6.6 The advantages of family farms production are:

- there already is a very large number of experienced family farmers;
- from current to possible levels of productivity, there is an important gap;
- consequently, an increase in incentives could induce an important increase in production in family farms.

6.7 Numerous agricultural economics theoricians (Cochrane, in the US, Tepicht, in Poland, Servolin, in France, among many others) have pointed out that the advantage of corporate on family farming is partly a technical delusion: corporate farming works according a full cost + fair rate of profit rational, when family farms work according to a labour income rational. That means that, if prices are declining, a family farmer will go on producing as long as the family labour force is reproduced through a minimum income. At this

point, corporate farming would have got rid of an unprofitable operation long time ago.

6.8 This argument is specially strong when:

- there is much uncertainty in the production and marketing conditions;
- the production is labour-intensive: wages for the family labour are included in, thus not adding to, the income requirements of family farmers;
- family farms produce several commodities whose returns can add to, or offset, each other.

In Jamaica, the fruits and vegetables sector matches everyone of these conditions.

6.9 Social conditions in Jamaica should be taken into consideration. Briefly resumed, it is probably better to have too many small farmers than more unemployed, therefore more larcenists, plus security guards in large estates.

6.10 The advantage of large-scale production is decisive only for these commodities which combine:

- a possible use of advanced technologies;
- requirements of steady and consistent supplies;
- safe outlets with fair returns.

This is the case principally for some fresh exports markets of fruits. This could perhaps be the case for some fruits and vegetables specially produced, at low cost, for processing. But, as was previously signaled (See 4.4), such opportunities would require further specific studies.

6.11 The handicap of family farms can become economically unbearable for the society as a whole, when they are too much behind optimum conditions of productivity. Only through specific studies on costs of production (See Chapter 5, C) would it be possible to say whether, or not, it is the case in the fruits and vegetables sector.

6.12 My conclusion is that no exclusive priority should be given to any of the possible systems of production. If large-scale farming is, or become, profitable, rational and profitability will be the best incentives. If it is not profitable, temporary incentives will probably not prevent further divestment or reorganization. On the other hand, a growth in the production of family farming requires specific interventions, in order to:

- offset an excessive backwardness in productivity: modernization of family farms is a basic feature of about every farm policy;
- offset some of the basic shortcomings of individual family farms, in technics, information, marketing, etc. That is why the following proposals will principally aim

at enhancing the conditions of production and of marketing in family farms.

B. A conditional, selective development programme in fruits and vegetables

6.13 This proposal should include existing programmes, such as the one on papaya, and be administratively and economically coordinated with other ones, very similar, such as the Hillside Agricultural Project, or other development programmes on citrus, bananas,...

6.14 It should firstly focus on limited areas, which would permit to concentrate efforts of different government agencies, and to test and adjust the programme.

6.15 The basic feature of the programme would be a **planned increase** of the farmer's production of selected crops, all of them being able fruits and vegetables which can be processed. The plan of increase should be establish for several years, after discussion with extension officers.

6.16 This increase would be made possible by supplying eligible farmers with one or several of the following means of production:

- inputs (seeds, seedlings, chemicals,...);
- credit;
- irrigation programmes;
- land divesting;
- training and extension.

6.17 Eligible farmers would have to fulfil conditions about their experience in farming. In addition, in an area where a PMO exists, or is created, farmers who apply for the programme would have to join the PMO. If there is no PMO, an additional requirement should be imposed for eligibility, namely a minimum acreage in selected crops.

6.18 A minimum part of the planned production increase would have to be marketed through mandatory channels:

- in a PMO, this part (in the range of 50-80 % ?) of the production would be marketed by the PMO;
- for isolated farmers, a smaller part (20-30 % ?) would have to be sold to a processing company, under a contract warranting a minimum price.

These specifically marketed supplies should match requirements in quality (being able to be processed, at least) and in seasonality.

6.19 Eligible farmers would have to hold a farm diary which would permit to know, and to adjust, the technical and economic situation of the farm.

C. Multiplying and improving producers marketing organizations

6.20 Existing PMOs (See Annex IX) are still rare. They seem to have problems in growing and in insuring their self-development. So far, three reasons of these problems have been identified:

- their management is unequally efficient;
- the volume they market is to small and mainly limited to some specific outlets: principally exports and supermarkets;
- the largest share of their members' production is still directly marketed to higglers, whose prices are more attractive;

6.21 That is why a further development of these PMOs would require a specific study of the situation and of the means to foster a creation and extension of such institutions. That study should point out:

- the exact reasons of current shortcomings;
- improvements to be carried out in the status, the organization, the management, of PMOs;
- specific programmes of training, support services and extension relevant with identified problems.

6.22 These improvements are as so much necessary, as PMOs of any size and status (cooperative or not, community-based or larger) could be a corner-stone in a development of production and marketing in the fruits and vegetables sector.

6.23 Their main purpose would be to offset some of the limitations of family farms as far as marketing and information are concerned. Basically, the PMOs would group, grade, and accordingly market, a part of their members' production.

6.24 This part would include the planned volume of deliveries, corresponding to a fixed share of production increase by those members of the PMO who benefit of a development programme (See 6.17).

6.25 The PMOs would be supplied with some basic means of development, such as: trucks, cooling room, an easy access to an upgraded information system (See above, Chapter 5); possibly additional equipment, such as a solar drier, an access to storage rooms and packaging lines in AMC buildings.

6.26 The PMOs would have to contract with one or more processors the delivery of a fixed volume of products at a guarantied minimum factory-gate price. This volume would be determined as a percentage of the mandatory deliveries from members benefiting of development programmes.

6.27 The main role of PMOs would be to find as many different profitable outlets as possible. In addition to the access to large buyers (exporters, supermarkets) they sometimes have already, the PMOs should enter the domestic fresh market, thus directly competing with the higglers. They would sell, either on a local market-place, or on Kingston markets, or on a special farmers' market, whatever the most profitable. Consequences would be:

- a decrease in market prices;
- a better valorization of farms products, since a part of the higglers' and retailers' margins would be returned at the farm level.

Competing with higglers on the retail market would put the PMOs in a better situation when competing with them for the marketing of the production of PMOs members.

6.28 The PMOs would help to manage development programmes at the farm level, by supplying farm inputs, and organizing training and extension.

VII. SUPPLIES CONTRACTS, AND THE GENERAL MANAGEMENT OF THE AGRO-INDUSTRIES SECTOR

A. Contractual supply

7.1 Both the Development Programme and the PMOs Programme should include provisions of minimum volumes and prices delivered to processing industries (See 6.17 and 6.25) by participants of these programmes.

7.2 These volumes and prices should be negotiated before the beginning of every crops year, taking into account a minimum level of prices (See below, Section B). Periods of delivery, as well as premiums for out-of-seasonal-peak deliveries, should be fixed in advance. Additional premiums for over-contract deliveries should be considered.

7.3 Processing companies should establish or strengthen links with their contracted suppliers. This could be done by:

- participating in Development Programmes through supplying them with farm inputs (seeds and seedlings, chemicals); participating in information and training sessions on the requirements of processing plants, on grading of fruits and vegetables, etc.

7.4 Similar contracts could be developed with other large buyers, such as exporters, supermarkets, hotels.

7.5 The contracts should be enforced. In the case of a breaking of the contract by one of the parties, possible deals and compensations should be found before going up to penalties. This enforcement should be under the responsibility of a government agency, possibly JAMPRO (See below, Section B).

B. Proposal of a summit co-management institution

7.6 A summit, "inter-industries", Council of fruits and vegetables marketing, should be created.

7.7 Members of this Council would be equal numbers of representatives of every industry involved in the system, with a balance between farm and processing levels. For instance, it could be composed of one or two representatives of everyone of the following industries: farmers, PMOs, processors, exporters. In addition, the government would be represented through one of its agencies, namely JAMPRO.

7.8 Meetings of this Council would be called at least twice a year, preferably more often at the beginning. Proceedings would include voting.

7.9 The main purposes of this Council would be:

- inducing economic agents of the same production-marketing system to assess their specific interests, to discover possible convergence and common interests, to delineate their opposition, and to find temporary or long-term compromises;
- inducing them to take a common responsibility on basic matters such as: technical aspects of the agro-food system, common data to analyze the productions and markets situation, general economic decisions.

7.10 In addition to the possibility of including in the agenda any urgent and relevant question, members of the Council would have to make decisions on:

- defining grades and quality requirements for every commodity;
- defining the ways and technical means to improve the labels and quality controls;
- defining terms of standard contracts between farmers/PMOs and processors, exporters, supermarkets, etc.
- assessing provisions of production, of domestic and foreign demand, of prices;
- defining an annual minimum guarantied price for contracts;

- generally impulsing, controlling and adjusting Programmes which are carried out in the sector;
- giving priorities to research projects on production, processing and marketing of fruits and vegetables;
- orientating the information system;
- etc.

7.11 The minimum guarantied price should include important technical provisions, such as: the place of delivery (farmgate or factory-gate price), premiums for out-of-seasonal-peak deliveries, etc. Its level should be negotiated after having taken into account:

- data on cost of production, cost of transportation, cost of processing;
- the production and market prospects;

This level would be only a floor reference. Specific contracts can include higher prices.

7.12 The Council should be provided with all relevant data issued by the information system. It would have a responsibility on this information system, with the power to ask for adjustments and for additional data.

7.13 The role of the government representative would be:

- to assess the general economic background, government policies, priorities and constraints;
- to help breaking stalemates and finding compromises;
- to endorse majority decisions of the Council and to enforce them, possibly by arbitrating disputes on contracts implementation;
- to provide the Council with required technical means: information, research.

7.14 The existing Agro-Food Committee could be the executive arm of the Council, by coordinating several government agencies in order to comply with decisions or recommendations of the Council.

VIII. IMPLICATIONS OF AN UNIQUE NICHE STRATEGY

A. The logic of this strategy

8.1 The domestic production of a wide range of tropical fruits and vegetables should open to Jamaica a number of possible outlets:

- supplying the domestic demand with quality processed food, adjusted to local requirements;
- supplying a progressively integrated demand of CARICOM countries;
- supplying the specific demand of ethnic markets overseas;
- supplying a growing demand of hard currency markets in exotic, high flavour, foods.

8.2 The latter raises specific difficulties, principally because of a difficult competition on the world market, for raw and half-processed products. The example of papaya puree (See Annex VI) shows that even technically up-to-date exports, on growing markets, hardly match domestic conditions of production in Jamaica. Situation can be improved through a development of production, marketing and processing, but it will not be radically reversed.

8.3 Consequently, the "unique niche" strategy does not consist in exporting a wider range of half-processed products. It consists in taking advantage of i) the wide range of raw material, ii) the specific, high flavour, quality of some Jamaica products, iii) the generally positive image of Jamaica overseas, in order to escape from bulk markets rules and competition. Any time a Jamaican product, on an import market, is blended with other products of different origins, in order to improve their flavour (as it seems to happen, for instance, with pimento, cocoa,...), this does not match the "unique niche" strategy.

8.4 This could be done by generating a line of products:

- fully processed, using the most efficient and reliable technologies;
- based on very specific qualities and flavours;

- using an attractive generic label, referring to Jamaica;
- targeted at specialty shops, and exotic food departments of supermarkets.

These products could be blends of juices and purees, tropical jams and jellies, sauces and spices, possibly high quality dried fruits.

8.5 Passing from the current situation, with isolated high quality products, to an industrial, strictly developed and controlled, line of products, would be a difficult task. It cannot be based on individual strategies of medium or small-size companies. It requires a coordinating of technological development, implementation, and promotion.

B. Possible steps towards an industrial development

8.6 The current situation is one of over-equipment. The most urgent priority is to improve the utilization of existing facilities. This can be done by:

- improving the raw material supply (See Chapters 5, 6, 7);
- strengthening quality controls on processing;
- developing the production of existing products for existing, far from saturated, outlets, such as the domestic demand for good quality juices and blends, CARICOM and ethnic demand for processed food (canned fruits, sauces and spices,...).

8.7 If possible, new equipments should be coordinated, so as i) there is no useless competition, ii) some large-scale equipments can be used in common by several processors, iii) a flexibility principle is respected, so as equipments can be used for processing different raw material, and for supplying several demands, domestic as well as export.

8.8 The feasibility of a new plant processing fruits into purees in aseptic bags has been assessed, for a limited range of products,

and of outlets. This provides safety and flexibility to expand the role of that plant, so that it can be used for wider purposes than just adding another bulk export. For instance:

- the new plant (feasible without using its maximum capacity) could be used as a buffer between glut and shortage seasons, thus providing other processors with preserved purees when raw material is no longer available;
- it should be used for industrially testing new lines of products and new technologies, which would be made available to the Jamaica processing sector as a whole.

C. Some remarks on a further development of the industrial export strategy

8.9 A study should be rapidly carried out at the processing level, including:

- a survey of existing processing facilities, using already available data, ccmpleted with economic figures on the costs and profitability of outputs;
- an estimate of current and forecast volumes of farms outputs available for processing, taking into account a development of production and an evolution of the farmgate prices levels.

8.10 A parallel, professional, marketing study of the US and Europe demand of exotic, highly differentiated and priced, quality food should be carried out. Such a marketing study should be of the type a company would carry out in order to start a new line of products. What target should be aimed at ? What type of product should be developed ? What promotion is required ? What is the size of the possible markets ? What trade channels should be used ?

8.11 Based on these studies, a process of development could be implemented, with the following principles:

- developing new products, designing and promoting a new generic label, strictly controlling the quality of

products, all these functions should be centralized (JAMPRO, FTI);

- technology, label, and generic promotion could be made available for processing companies, under some kind of franchising contract;
- new equipments and facilities should be considered in the light of the general strategy, therefore, taking into account also domestic and CARICOM demands.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

August 1990

Request from the Government of Jamaica

JOB DESCRIPTION

DP/JAM/88/009/11-54/J 13103

Post title	Agro-Economist
Duration	6 weeks
Date required	As soon as possible
Duty station	Kingston, Jamaica (with possibility of travel within the country)
Purpose of project	To establish an Agri-Food Processing Unit at JAMPRO capable of having a relevant role in the development of the agro-industry of Jamaica through advisory services information, etc.
Duties	The Agro-Economist will, in collaboration with the International Project Co-ordinator and the Agro-Food Processing Unit at JAMPRO, be expected to carry out the following duties:

1. Make an analysis of the agro-industry in Jamaica, based on existing reports as well as through direct visits to enterprises and institutions dealing with this subsector. This analysis should focus on:
   (a) Identification of main subsystems of agro-industrial products that could promote the articulation of the agricultural industry, increase national value added and contribute to foreign income earnings;
   (b) Prices, incentives, prevailing policies, etc. in the Jamaican national scene for agricultural products which are the raw materials for the processed agricultural products destined for export. Also analyse the incentives and policies prevailing in the agro industry subsector;
   (c) Institutional framework prevailing within Jamaica and the Caribbean as it relates to the growing, processing and exporting of agricultural processed food products.

2. On the basis of the main commercial trends worldwide as well as on concrete export possibilities for Jamaica; identify specific

..../..

processed agro food products which may be classified as concrete export possibilities and also "uniquely Jamaican niche" products for export to the Caribbean and international markets, in the context of the subsystems identified.

Particular emphasis must be given to the new market conditions which will prevail for export to Europe after 1992.

To identify specific processed food products which could be classified as "unique Jamaican niche market products" for export to Europe, North America and may be the Far East.

3. Prepare a proposal of policies within the institutional framework and programmes of rationalization as well as investment projects to promote the agro-industry.

4. The expert will also be expected to report to the International Coordinator the findings of the agro economic mission in such a way as the report may be used to guide the industries' direction and investment and to prepare a final technical report and a programme of action for the development of the agro industry subsystems identified.

ANNEX II

PERSONS INTERVIEWED

GOVERNMENT AGENCIES

1) JAMPRO
- G.E. TATHAM, President;
- NORMAN PRENDERGAST, Group Director. Agriculture and Agro Industries Office:
- Miss KATHLEEN GOLDSON, Processed Food Specialist, Counterpart of this mission:
- JOHN C. WILSON, International Project Coordinator;
- LENNOX A. PICART, Director. Agro-Industries Division;
- ERROL CAMERON, Consultant, General Agriculture Division. Papaya Programme:
- LEARIE DINHAM, Agricultural Specialist, General Agriculture Division;
- AARON PARKE, Senior Director, General Agriculture Division;
- MICHAEL SEALY, Manager, JAMPRO Bureau in Montego Bay;
- Mrs VALERIE VEIRA, Senior Director.

2) Ministry of Agriculture:
- Mrs GOMES, costs of production;
- LENNY MORGAN, RADA/Marketing Division;
- Mr RAMDON, Data Bank and Evaluation Division;
- MrsMARIE STRACHAN, Dir. Econf.;
- JOSEPH R.R. SUAH, Project Manager of the Hillside Agricultural Project;
- Mr CHAMBERS, Extension Officer, Santa-Cruz (St Elizabeth);
- ROBERT SAUNDERS, Soil Conservation Officer, Santa-Cruz.

3) Ministry of Development, Planning and Production
- Dr VENTURA, Director of Science and Technology.

4) Planning Institute Of Jamaica
- ERROL GRAHAM:
- Mrs BEVERLEY LAWRENCE:

5) Food Technology Institute
- Mr LYNCH.

PRODUCERS OF FRUITS AND VEGETABLES

- Mrs CLAUDETTE BARRACKS and a group of small-scale pineapple producers, in Ginger Hill (St Elizabeth);
- LYNN EWALD, large-scale yellow squash farm;
- ROBERT CRUM EWING, large-scale papaya farm;
- FRANCIS RAMSEY, large-scale mango farm.

EXPORTERS

- CLEMENT GOLDSON;
- R. KARL JAMES, President of the Jamaica Exporter's Association;
- GARFIELD B. THOMAS, Manchester Packers, Mandeville.

FOOD PROCESSORS

- PHILIP ALEXANDER, Mr DAVIDSON, PATRICK DUNCAN, Grace Kennedy & Co, Ltd.;
- DONALD DUNCANSON, BRICO Ltd. (Fruits of Jamaica Cy);
- PATRICK A. SIBBLIES, Coffee Industries Ltd.;
- STEVEN A. WATSON, SCOTTS of Jamaica;
- DERRICK ROCHESTER, Southern Fruits and Food Processors.

SPECIFIC BRANCH ORGANISATIONS

- BARRINGTON CAMERON, Coffee Industry Development Co. Ltd;
- Dr JEAN A. DIXON, Banana Board;
- IVAN TOMLINSON, C.V. BEND, C.L. VAN WHERVIN, Citrus Growers Association.

OTHER PERSONS

- IVON BRODBER, Marketing Consultant;
- Dr CARRUTHERS, Agricultural Credit Bank;
- CARL J. DUIVENVOORDEN, Potatoes Canada, and T.H. HALIBURTON, Nova Scotia Agricultural College;
- PETER ESPEUT, Institute of Social and Economic Research, University of the West Indies;
- Mr RUEL-COOK, Consultant;
- Mr LLOYD WRIGHT, Projects for the People;
- Mrs MAC INTYRE, higgler.

ANNEX III

A SCHEME OF THE FRUITS AND VEGETABLES SYSTEM

A. THE FRESH EXPORT MARKET

1) Large-scale fruit and vegetable farms are generally involved in direct exports. They sort out and package their output, generally on the field, and ship it to a given fresh market (Miami, London, etc.), either by air (papayas, yellow squashs ...), or by ship (bananas, mangoes,...). They are generally closely related to one, or few, importers.

The products not suitable for fresh export are partly sold on the domestic fresh market through several channels: large buyers (hotels, supermarkets), local middlemen, and even retail shops owned by the farm. Another part is either sold to processors, generally under an informal agreement, or sometimes dumped to local farmers, as cattle feed.

2) Exporters of fresh fruits and vegetables generally are specialised in a specific area, in a given range of products and in a given export place (exemple: yellow yam to New York). When a demand has been expressed, they place order, by telephone, to agents they have in some production areas. These agents find available produces in nearby farms. Then, the exporter comes with a truck, sorts out, and pick up farms products, and gives the agent a fixed sum per pound of sales (in the order of 0.10 Js).

Some of these agents can also be supplied by PMOs. In this case, they place their order to the PMO, which informs its members of the needed volume.

In both cases, exporters realise the final operations: packaging (often in AMC buildings) and shipping.

B. THE FRESH DOMESTIC MARKET

1) Most of the domestic demand of fresh fruits and vegetables is supplied by higglers. Higglers are generally inhabitants of a farmers community (typically farmers wifes) who make a living by marketing of local crops. A common system is that a higgler buys products, packages them (generally in fertilisers bags), and pays a truck-owner for the transportation of him/her and his/her bags to a market place (transportation cost observed, from St Mary to Kingston: 0.10 Js per bag). Typically, the higgler arrives on the market place on thursday night, and stays there until saturday night, selling fruits and vegetables to consumers and/or to street-retailers. Other cases are: the higgler owns a truck; the higgler has no retail

activity, and only sells to retailers, etc.. Large-scale higglers exist; for instance, those who market the non exported part of large farms outputs.

Table III.1, and Graphs III.1, 2, 3, and 4 show that higglers' margins are, on the average, reasonable ones, and that their relative values have not considerably changed over the years. Therefore, if the fresh domestic price can be estimated too high, it does not principally come from exorbitant gains ate the higglers' level. Nevertheles, there seems to be very little apparent competition through retail prices on a given market place. The same probably happens at the farm gate.

2) Other supplies of the fresh market are secondary. The supermarkets can have steady suppliers, such as large-scale farms and PMOs. This does not seem to have an impact on the prices.

C. THE MARKET OF RAW MATERIAL FOR PROCESSING PLANTS

1) Usually, this market is supplied through local agents of the processing companies who source available farm products.

2) The largest food processing company, Grace Kennedy, is developing a contract system for most of its raw material. This contract system begun with supply of porks for processing. For the fruits and vegetables sectors, the situation is:

- papayas: unformal contracts with 2 large-scale farms;
- pineapples: about 10 unformal contracts;
- carrots: about 300 formal contracts;
- tomatoes: the system is just starting, with about 10 projects;
- mangoes: no contract.

Some contracts include a provision for a guarantied price, calculated on a cost of production + 25 % basis. This price is a factory gate price. Sometimes, agreements include supplies of farm inputs.

Other processors complain about contract failures. Both parties, farmers and processors, seem to have had desillusions, mainly because the general rule of the game is to rush on any good price opportunity, even if it means breaking a long-term agreement. In addition, private contracters have few or no means to enforce a contract.

TABLE III.1

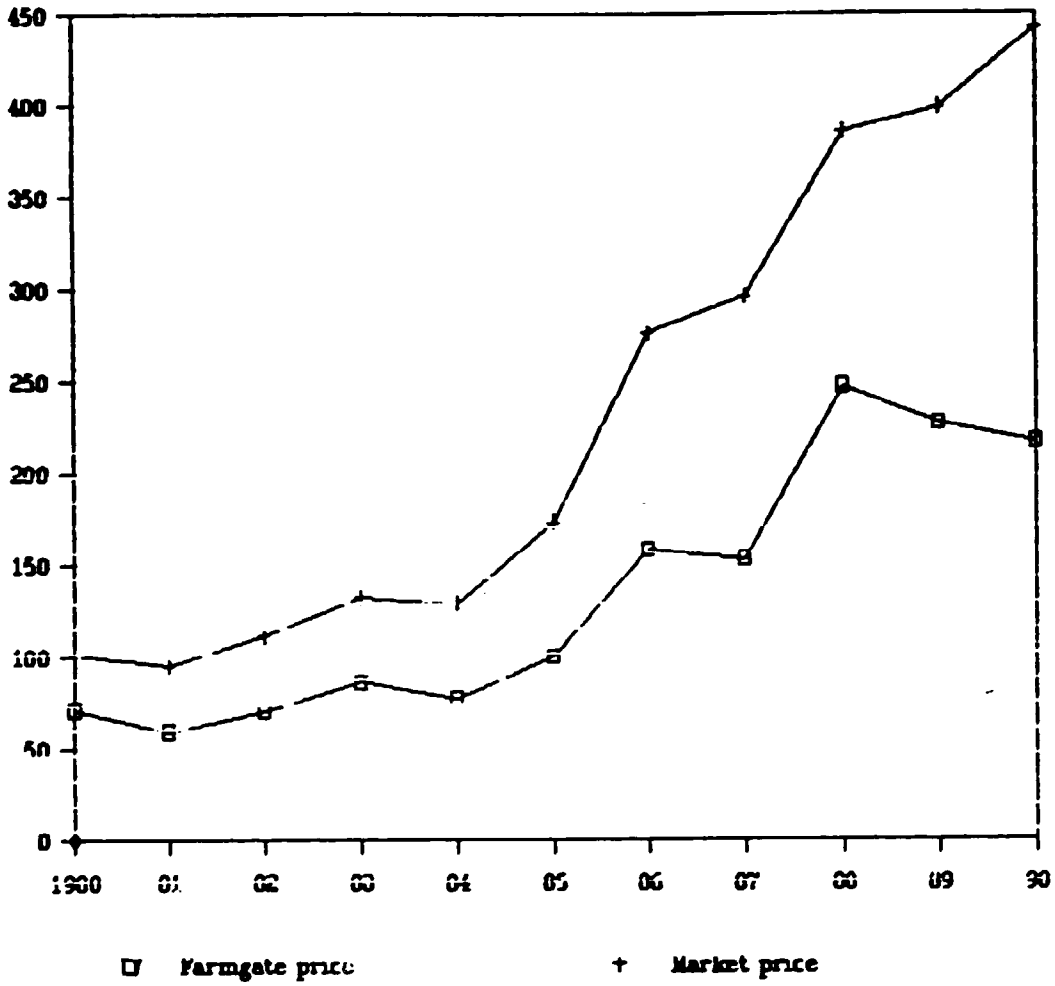
FARMGATE AND MARKET PRICES (Source : MIN. AG. DATA BANK)

	1980	81	82	83	84	85	86	87	88	89	90	1989 1	2	3	4	1990 1	2	3
Kandui																		
Production	11641	16043	16318	11267	19439	16084	16115	16657	12184	15636	11119							
Index	100	135	138	146	164	138	137	142	108	132	145							
Farmgate price	71	55	70	60	77	100	138	153	247	221	217	187	152	239	396	290	195	223
Market price	101	73	151	132	129	[illegible]	219	234	366	355	442	341	264	316	616	432	326	303
Market/Farmgate (%)	142	[illegible]	139	153	166	143	[illegible]	155	130	170	204	182	174	157	156	145	167	166
TOMATO	1980	81	82	83	84	85	86	87	88	89	90	1	2	3	4	1	2	3
Production	25338	24641	18774	21122	32561	21455	18141	17595	14283	16832	15720							
Index	100	97	74	83	128	84	71	69	56	66	62							
Farmgate price	75	51	63	81	64	105	165	165	189	154	234	90	167	258	235	273	131	226
Market price	115	105	125	144	146	219	312	314	371	317	471	255	201	405	406	437	264	416
Market/Farmgate	153	206	198	178	228	209	189	190	196	266	201	283	188	162	173	160	202	182
PINEAPPLE	1980	81	82	83	84	85	86	87	88	89	90	81	82	83	84	85	86	87
Production	4296	5168	9031	6973	8825	8110	7789	8150	10345	10704	10237							
Index	100	125	210	162	205	190	181	190	241	249	239							
Farmgate price	45	41	45	53	60	73	88	108	96	135	154	165	118	159	181	156	134	172
Market price	58	66	92	95	166	144	161	204	247	308	323	354	288	268	320	333	298	288
Market/Farmgate	129	161	204	173	177	197	206	189	257	228	210	215	244	169	177	213	222	167
Pawpaw	1980	81	82	83	84	85	86	87	88	89	90	1	2	3	4	1	2	3
Production	3376	2126	1832	1821	2343	2293	2427	3160	3193	3508	4256							
Index	100	155	133	132	170	157	176	231	232	254	365							
Farmgate price	23	27	27	29	36	39	50	51	103	135	155	135	113	141	149	140	136	163
Market price	56	43	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	169	250	265	255	253	295	256	265	246	[illegible]
Market/Farmgate	232	[illegible]	[illegible]	211	211	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	183	224	180	173	179	181	[illegible]

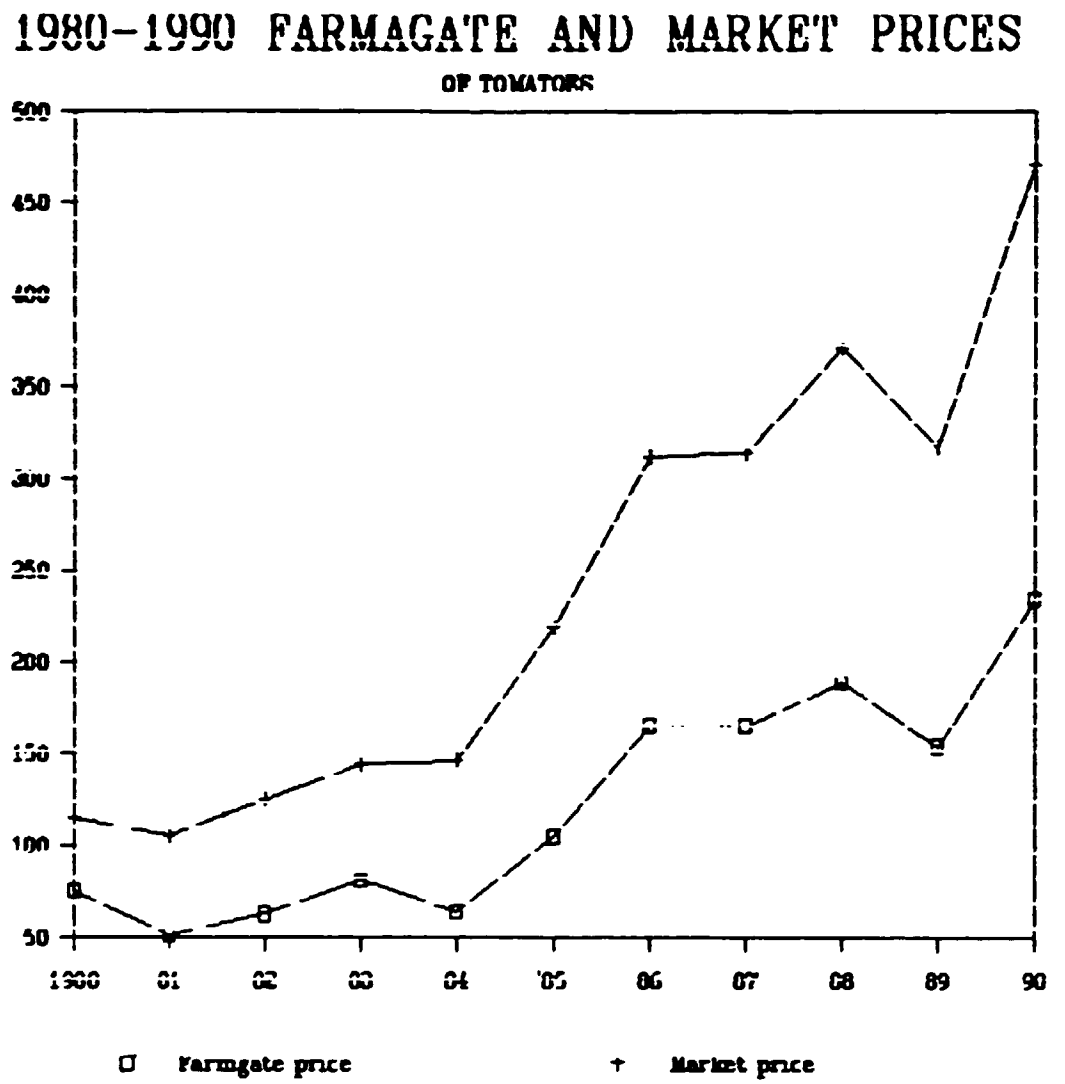
GRAPH III.1

1980-90 FARMGATE AND MARKET PRICES

OF CARROTS



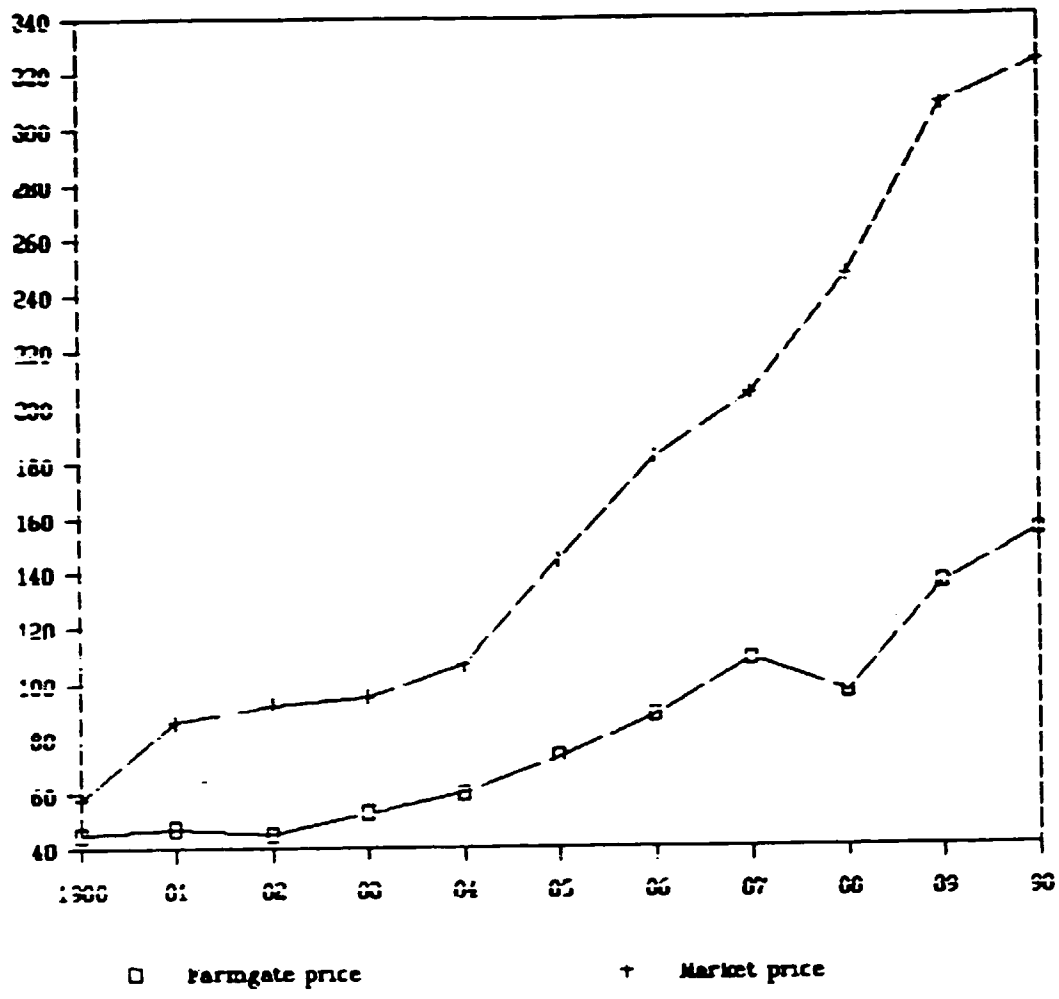
GRAPH III.2


1980-1990 FARMAGATE AND MARKET PRICES
OF TOMATOES
500
450
400
350
300
250
200
150
100
50
1980
81
82
83
84
85
86
87
88
89
90
Farmgate price
Market price

GRAPH III.3

1980-90 FARMGATE AND MARKET PRICES

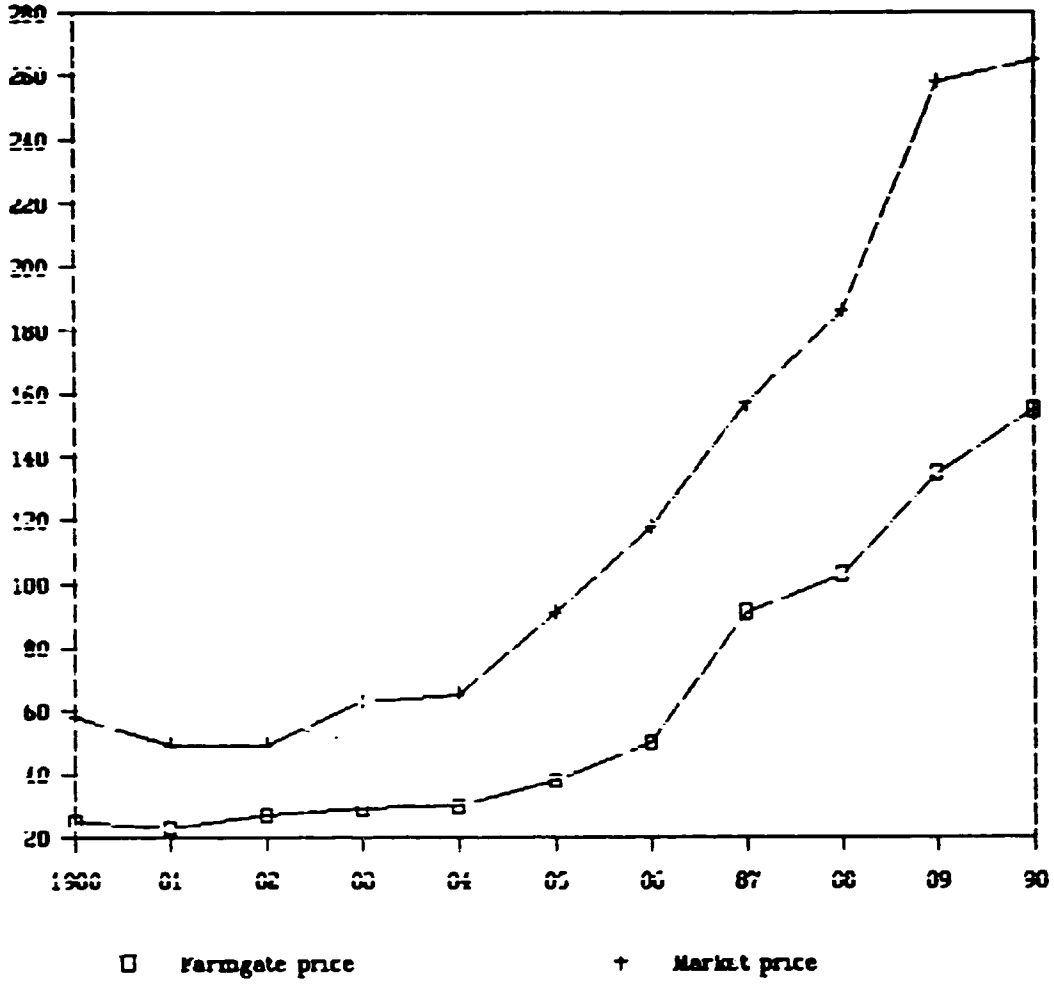
OF PINEAPPLES



GRAPH III.4

1980-90 FARMGATE AND MARKET PRICES

OF PAW-PAW



ANNEX IV

THE PRICES SYSTEM

Tables IV.1 to 5 have been realised by computing unpublished monthly average farmgate prices observed in every parish (See Annex VII). For every commodity, these prices range from 1 to 6 (pineapple, paw-paw) to 1 to 33 (tomatoes). Graphs IV.1 to 5 show these monthly variations in selected parishes.

For every column (month) and for every row (parish), not weighted average prices have been computed. The range between minimum and maximum monthly averages reflects the range of seasonal variations; the range between minimum and maximum parish averages reflects the geographic variation of prices. Seasonal variations are larger than geographic ones for cabbage, carrots and tomatoes. When geographic variations dominate for paw-paws (not a seasonal crop) and, more surprisingly, for pineapples. Monthly geographic variations are typically 1 to 2 or 3, for cabbage; 1 to 2 (with peaks of 1 to 5 in winter) for carrots; between 1 to 2 and 1 to 13 for tomatoes; 1 to 3 for pineapples and paw-paws. A dramatic collapsing of the tomatoes price in Manchester, between April and August 1990, can be explained by the fact that the processing plant of Southern Fruits and Food Processors had not started operating again.

Graphs IV.7 to 14 show quarterly variations of volumes and of farmgate prices. Relations between volume variations and prices variations are not always very clear, principally for carrots and paw-paws.

Differences in methods and in prices between Data Bank and RADA/Marketing Division (See Annex VII) have been observed on Tables IV.6 to 8. As expected , RADA prices, which focus on exports, are most often higher for cabbage and for pineapple. But this is not confirmed with carrots. In addition, the gap between these series is sometimes very high, which probably raises problems of too big differences in methods.

TABLE IV.1

DATA BANK FARMGATE PRICES 1990

CABBAGE

	J	F	M	A	M	J	J	A	S	O	N	D	ACR	YIELD	PROD	AVG	STD	MIN	MAX
ST THOMAS	2.50	1.80	2.00	2.80	1.50		2.00	2.50	3.00	1.50		6.00	50	4.50	225	2.56	1.25	1.50	6.00
PORTLAND	1.50	1.50	1.50	2.00	1.00		1.00				5.00		80	5.30	424	1.93	1.29	1.00	5.00
ST ANDREW	2.50	2.80	3.00			1.60	2.50	2.50		2.50	2.50	3.25	139	4.20	584	2.57	0.43	1.60	3.25
ST MARY	2.00	1.50	2.00	2.00	1.20		2.50	2.00	3.00	3.50	5.00	3.00	79	5.40	427	2.52	1.02	1.20	5.00
ST ANN	0.85	1.20	0.80	1.00		0.50	0.90	1.30	2.25	2.00	3.00	1.80	1184	7.20	8525	1.42	0.72	0.50	3.00
ST CATHERINE	1.30	1.50	1.30	1.00	1.10	0.70	1.70	1.50	1.50	2.50	3.00	4.00	209	3.40	711	1.76	0.91	0.70	4.00
CLARENDON	1.50	1.50	1.00	1.00			1.60	1.30	1.20			2.50	337	5.30	1786	1.45	0.45	1.00	2.50
MANCHESTER	1.50	1.50	1.50	0.80	0.80	0.80	1.00	1.00	1.50	2.50	3.50	4.00	554	6.10	3379	1.70	1.03	0.80	4.00
ST ELIZABETH	2.00	1.50	2.00	1.50	1.50	1.00	2.00	2.00	2.00	2.00	3.00	3.00	210	5.50	1155	1.96	0.56	1.00	3.00
TRELAWNY	2.50	2.50	2.50	2.50	1.80	1.50	1.00	2.50	3.00	3.00	4.50	5.00	136	4.70	639	2.69	1.08	1.00	5.00
ST JAMES	1.80	1.50	1.20		1.00	1.50	1.50	2.00					46	6.00	276	1.50	0.31	1.00	2.00
HANOVER		2.00	2.00	2.00	1.50	1.50	2.00	2.50		2.00	4.00	4.00	22	5.00	110	2.35	0.87	1.50	4.00
WESTMORELAND	1.50	1.50	2.00	1.00	0.80	0.70	1.50	1.50	1.80	2.00	4.00	3.50	161	5.90	950	1.82	0.96	0.70	4.00
ALL ISLAND													3207	6.00	19242				
AVG	1.79	1.72	1.75	1.60	1.22	1.09	1.63	1.88	2.14	2.35	3.75	3.64	246.69	5.27	1476.18	2.02	0.84	1.04	3.90
STD	0.51	0.44	0.59	0.66	0.32	0.41	0.53	0.53	0.67	0.55	0.84	1.11	303.88	0.92	2200.45	0.45	0.31	0.32	1.10
MIN	0.85	1.20	0.80	0.80	0.80	0.50	0.90	1.00	1.20	1.50	2.50	1.80	22.00	3.40	110.00	1.42	0.31	0.50	2.00
MAX	2.50	2.80	3.00	2.80	1.80	1.60	2.50	2.50	3.00	3.50	5.00	6.00	1184.00	7.20	8524.80	2.69	1.29	1.60	6.00

TABLE IV.2

'1990 FARMGATE PRICES OF CARROTS

	J	F	M	A	M	J	J	A	S	O	N	D	ACR.	YIELD	PROD	AVG	STD	MIN	MAX
ST THOMAS	0.95	2.50	3.50	3.00	2.00	1.50			2.00		2.00	6.00	711	5.00	3555	2.61	1.40	0.95	6.00
PORTLAND	3.00	2.50	1.50	1.50	1.80		1.80		2.50				290	5.70	1653	2.09	0.54	1.50	3.00
ST ANDREW	4.00	3.50	4.00			3.00			3.00				299	4.30	1286	3.50	0.45	3.00	4.00
ST MARY	3.50	4.00		1.80	1.50	2.00		3.00	2.50	5.00	4.00	5.00	98	5.30	519	3.23	1.21	1.50	5.00
ST ANN	3.50	3.25	2.25	1.50	1.50	1.50	2.50	2.20	2.60	2.60	7.00	8.00	343	4.40	1509	3.20	2.03	1.50	8.00
ST CATHERINE		2.50	2.40	1.10	2.00		2.50		3.00		2.50	6.00	220	4.10	902	2.75	1.33	1.10	6.00
CLARENDON	5.00	3.50	3.50	2.50								6.00	80	4.10	328	4.10	1.24	2.50	6.00
MANCHESTER	3.50	3.00	3.00	1.50	1.50	2.50	3.00	2.00	2.50	2.50	3.00	1.50	675	4.30	2903	2.46	0.66	1.50	3.50
ST ELIZABETH	4.00	3.00	2.50	2.50	2.00	2.00	3.00		3.00		6.00	7.00	589	5.30	3122	3.50	1.61	2.00	7.00
TRELAWNY	3.00	5.00	4.50	2.75	3.00	3.00	2.50	3.50	3.50	3.50	6.00	7.00	135	4.00	540	3.94	1.35	2.50	7.00
ST JAMES		3.00	3.00		2.00	2.50		3.00					41	4.20	172	2.70	0.40	2.00	3.00
HANOVER													17	4.00	68				
WESTMORELAND	2.50	2.00	2.00	1.00		2.00	1.50	1.50	2.00	2.00	2.50	4.50	117	4.90	573	2.14	0.86	1.00	4.50
ALL ISLAND													3615	4.70	16991				
AVG	3.30	3.15	2.92	1.92	1.92	2.22	2.40	2.53	2.66	3.12	4.13	5.67	278.08	4.58	1317.69	3.02	1.09	1.62	5.25
STD	1.02	0.77	0.86	0.68	0.44	0.53	0.52	0.69	0.45	1.06	1.82	1.78	230.76	0.56	1134.90	0.64	0.49	0.76	1.60
MIN	0.95	2.00	1.50	1.00	1.50	1.50	1.50	1.50	2.00	2.00	2.00	1.50	17.00	4.00	68.00	2.09	0.40	0.00	3.00
MAX	5.00	5.00	4.50	3.00	3.00	3.00	3.00	3.50	3.50	5.00	7.00	8.00	711.00	5.70	3555.00	4.10	2.03	3.00	8.00

TABLE IV.3

'1990 FARMGATE PRICES OF TOMATOES

	J	F	M	A	M	J	J	A	S	O	N	D	ACR.	YIELD	PROD	AVG	STD	MIN	MAX
ST THOMAS	3.50	4.00	3.00	3.00	1.50	2.00	3.00	5.00		5.00	8.00	8.00	163	4.80	782	4.18	2.07	1.50	8.00
PORTLAND	1.50	2.00	3.00	2.00	2.50		2.50		1.50	6.00	6.00		129	4.80	619	3.00	1.67	1.50	6.00
ST ANDREW	3.00	4.00	5.00			4.00	5.00	4.50	2.00		4.00	7.00	163	5.30	864	4.28	1.31	2.00	7.00
ST MARY	3.00	3.00	3.50	2.50	3.00			2.50	3.00	4.00	7.00	8.00	196	5.80	1137	3.95	1.84	2.50	8.00
ST ANN		4.50	3.00			1.20	2.00	3.00	5.00	5.50	6.00	3.00	127	5.25	667	3.69	1.54	1.20	6.00
ST CATHERINE	1.00	3.00	1.50	1.50	0.70	0.60	1.20	0.70	2.50	1.50	3.50	4.00	278	4.50	1251	1.81	1.11	0.60	4.00
CLARENDON	2.00	3.00		1.80			3.00		2.50			8.00	256	4.60	1178	3.38	2.11	1.80	8.00
MANCHESTER	1.50	3.00	3.50	0.80	0.50	0.30		0.50	1.20	1.50	0.80	0.80	384	4.70	1805	1.31	0.99	0.30	3.50
ST ELIZABETH	2.00	4.00	3.50	1.00	0.50	0.50	4.00	1.00	1.50	4.00	6.00	7.00	900	5.70	5130	2.92	2.08	0.50	7.00
TRELAWNY	3.00	4.00	4.00	3.40	3.50	2.50		5.00	3.50	3.50	6.00	6.00	94	4.60	432	4.04	1.10	2.50	6.00
ST JAMES	2.00	4.00	4.00		0.80	1.00	4.00	3.00	3.50	3.50	5.00		107	5.30	567	3.08	1.31	0.80	5.00
HANOVER	4.00	4.00	4.00	3.00	1.50	1.50	3.00	2.00	4.00	3.00	3.50	7.00	94	4.60	432	3.38	1.42	1.50	7.00
WESTMORELAND	1.00	3.00	3.00	2.00	1.00	1.00	2.00	3.00	1.50	3.50	5.00	10.00	243	5.80	1409	3.00	2.41	1.00	10.00
ALL ISLAND													3077	5.10	15693				
AVG	2.29	3.50	3.42	2.10	1.55	1.46	2.97	2.75	2.64	3.73	5.07	6.25	241.08	5.06	1251.83	3.23	1.61	1.36	6.58
STD	0.95	0.68	0.81	0.83	1.03	1.06	1.07	1.55	1.13	1.37	1.83	2.53	207.04	0.47	1186.94	0.85	0.44	0.69	1.71
MIN	1.00	2.00	1.50	0.80	0.50	0.30	1.20	0.50	1.20	1.50	0.80	0.80	94.00	4.50	432.40	1.31	0.99	0.30	3.50
MAX	4.00	4.50	5.00	3.40	3.50	4.00	5.00	5.00	5.00	6.00	8.00	10.00	900.00	5.80	5130.00	4.28	2.41	2.50	10.00

TABLE IV.4

'1990 FARMGATE PRICES OF PINEAPPLES

	J	F	M	A	M	J	J	A	S	O	N	D	ACR.	YIELD	PROD	AVG	STD	MIN	MAX
ST THOMAS					2.00	2.00	1.50	3.00	2.50				33	5.20	172	2.20	0.51	1.50	3.00
PORTLAND					2.00		2.00	1.50	3.00				94	7.00	658	2.13	0.54	1.50	3.00
ST ANDREW						2.75	3.20	2.80	3.00			4.00	62	4.10	254	3.15	0.45	2.75	4.00
ST MARY				3.00	2.50	0.85	1.80						75	7.00	525	2.04	0.81	0.85	3.00
ST ANN		5.00				2.00							23	6.50	150	3.50	1.50	2.00	5.00
ST CATHERINE	2.50			1.50	1.50	1.50	1.40	2.00	2.00	1.50	2.00		51	5.90	301	1.77	0.35	1.40	2.50
CLARENDON															0				
MANCHESTER							0.80		1.00				31	6.30	195	0.90	0.10	0.80	1.00
ST ELIZABETH	1.50	1.50	1.30	1.50	1.00	1.00	1.00		1.50	2.00	2.00	2.00	757	8.00	6056	1.48	0.37	1.00	2.00
TRELAWNY		3.00	3.00	3.00	3.00	2.80	1.80		2.50				7	6.80	48	2.73	0.42	1.80	3.00
ST JAMES	2.00	2.50	2.50		1.50	1.00	1.40	1.50	2.00	2.50	2.00		115	9.90	1139	1.89	0.50	1.00	2.50
HANOVER			2.00	1.50	2.00	1.50	1.75	2.00	2.00	1.70	2.50	2.50	14	7.40	104	1.95	0.34	1.50	2.50
WESTMORELAND	1.80	1.50	1.80	1.50	1.20	1.50	2.00	1.80	1.50	1.50	2.50		77	6.90	531	1.69	0.33	1.20	2.50
ALL ISLAND													1361	7.60	10344				
AVG	1.95	2.70	2.12	2.00	1.86	1.69	1.70	2.09	2.10	1.84	2.20	2.83	111.58	6.75	779.35	2.12	0.52	1.44	2.83
STD	0.36	1.29	0.58	0.71	0.60	0.66	0.60	0.55	0.62	0.38	0.24	0.85	197.17	1.37	1552.28	0.69	0.34	0.53	0.94
MIN	1.50	1.50	1.30	1.50	1.00	0.85	0.80	1.50	1.00	1.50	2.00	2.00	7.00	4.10	0.00	0.90	0.10	0.80	1.00
MAX	2.50	5.00	3.00	3.00	3.00	2.80	3.20	3.00	3.00	2.50	2.50	4.00	757.00	9.90	6056.00	3.50	1.50	2.75	5.00

TABLE IV.5

'1990 FARMGATE PRICES OF PAW-PAWS

	J	F	M	A	M	J	J	A	S	O	N	D	ACR.	YIELD	PROD	AVG	STD	MIN	MAX
ST THOMAS	1.50	1.30	1.00	1.05	1.50	1.00	0.60		1.00	0.80		1.00	87	5.10	444	1.08	0.27	0.60	1.50
PORTLAND		1.00	0.80		1.00		1.40						63	5.80	365	1.05	0.22	0.80	1.40
ST ANDREW	2.80						1.50						4	5.25	21	2.15	0.65	1.50	2.80
ST MARY		1.70	1.70	1.50	1.80								183	8.10	1482	1.68	0.11	1.50	1.80
ST ANN															0				
ST CATHERINE	1.20	1.20	1.20	1.10	0.80	1.50	1.50	1.30	2.00	1.50	1.50	2.00	87	5.50	479	1.40	0.33	0.80	2.00
CLARENDON		1.50		1.00			1.50	1.00	1.50			2.00	46	5.80	267	1.42	0.34	1.00	2.00
MANCHESTER															0				
ST ELIZABETH	1.50	1.50	1.50	1.00	0.90	0.90	1.00	1.00	1.00	1.60	1.00	1.20	71	6.60	469	1.18	0.26	0.90	1.60
TRELAWNY	1.30	0.95	1.30	1.30	2.00	2.00	2.00			3.00	2.00	3.00	21	6.00	126	1.89	0.67	0.95	3.00
ST JAMES	2.80	2.50	2.50						2.80	2.50	2.70	2.50	31	3.00	93	2.61	0.14	2.50	2.80
HANOVER		4.00	3.00	3.00	2.00		3.00					2.00	9	6.00	54	2.83	0.69	2.00	4.00
WESTMORELAND	1.00	1.00	1.00			1.00	1.50						23	6.30	145	1.10	0.20	1.00	1.50
ALL ISLAND													662	6.40	4237				
AVG	1.73	1.67	1.56	1.42	1.43	1.28	1.56	1.10	1.66	1.88	1.80	1.96	56.82	5.77	303.40	1.67	0.35	1.23	2.22
STD	0.70	0.89	0.70	0.67	0.79	0.42	0.63	0.14	0.68	0.78	0.63	0.64	48.87	1.17	382.25	0.60	0.21	0.56	0.79
MIN	1.00	0.95	0.80	1.00	0.80	0.90	0.60	1.00	1.00	0.80	1.00	1.00	4.00	3.00	0.00	1.05	0.11	0.60	1.40
MAX	2.80	4.00	3.00	3.00	2.00	2.00	3.00	1.30	2.80	3.00	2.70	3.00	183.00	8.10	1482.30	2.83	0.69	2.50	4.00

TABLE IV. 6

MARKETING DIVISION FARMGATE PRICES OF CABBAGE

	J	F	M	A	M	J	J	A	S	O	N	D
ST THOMAS												
PORTLAND												
ST ANDREW												
ST MARY			1.10		0.90							
ST ANN	1.40	1.10	1.10		0.90	0.90	2.00	1.90	3.00	3.50	3.50	
ST CATHERINE	1.40										3.50	
CLARENDON					0.90							
MANCHESTER												
ST ELIZABETH												
TRELAWNY	1.40	1.10										
ST JAMES												
HANOVER												
WESTMORELAND												
ALL ISLAND												

MARKETING DIVISION - DATA BANK FARMGATE PRICES

	J	F	M	A	M	J	J	A	S	O	N	D
ST ANN	0.55	-0.10	0.20	-1.00	0.90	0.40	1.10	0.60	0.75	1.50	0.50	-1.80

TABLE IV.7

'MARKETING DIVISION FARMGATE PRICES OF CARROTS

	J	F	M	A	M	J	J	A	S	O	N	D
ST THOMAS	2.50	1.75	1.90		1.60	2.50	2.75	2.75		4.00	5.50	
PORTLAND			1.90		1.60							
ST ANDREW												
ST MARY												
ST ANN												
ST CATHERINE												
CLARENDON												
MANCHESTER	2.50	1.75	1.90		1.60	2.50	2.75	2.75		4.00		
ST ELIZABETH	2.50	1.75	1.90		1.60	2.50	2.75	2.75		4.00	5.50	
TRELAWNY												
ST JAMES												
HANOVER												
WESTMORELAND												

MARKETING DIVISION - DATA BANK FARMGATE PRICES

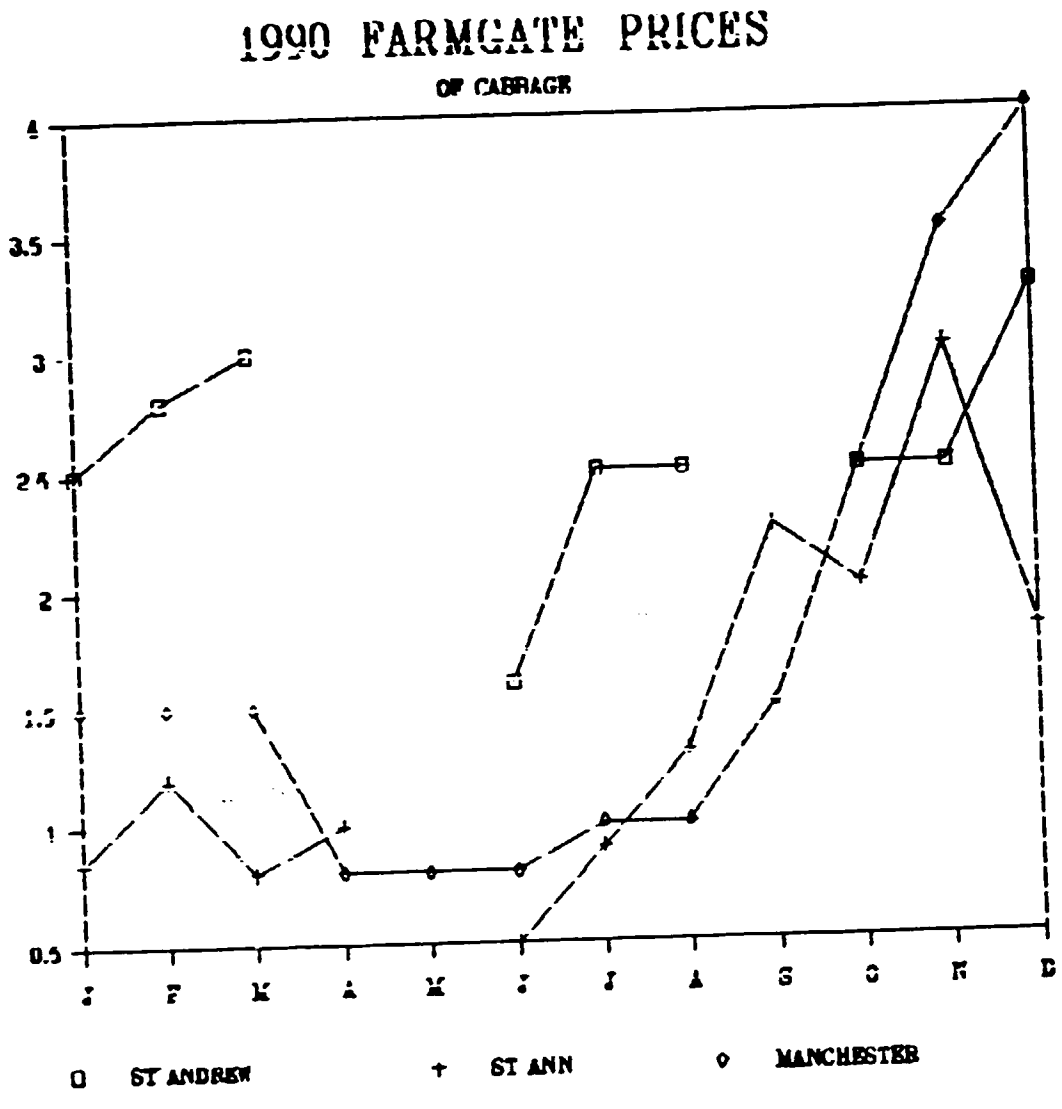
	J	F	M	A	M	J	J	A	S	O	N	D
ST THOMAS	1.55	-0.75	-1.60		-0.40	1.00	2.75	2.75		4.00	3.50	
MANCHESTER	-1.00	-1.25	-1.10		0.10	0.00	-0.25	0.75		1.50	-3.00	
ST ELIZABETH	-1.50	-1.25	-0.60		-0.40	0.50	-0.25	2.75		4.00	-0.50	

TABLE IV.8

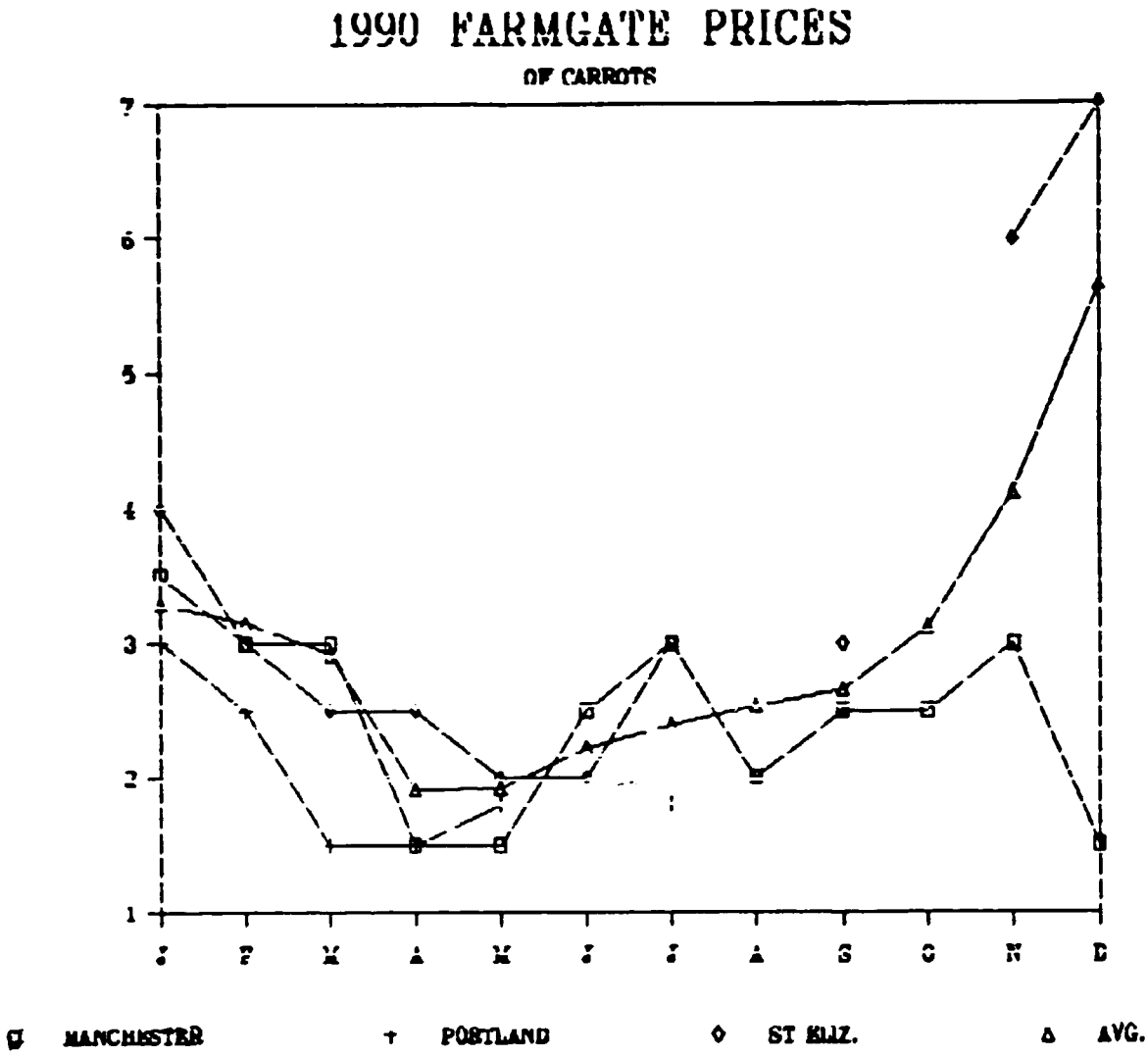
ST ELIZABETH DATA BANK AND MARKETING DIVISION FARMGATE PRICES OF PINEAPPLES

	J	F	M	A	M	J	J	A	S	O	N	D
DATA BANK	1.50	1.50	1.30	1.50	1.00	1.00	1.00		1.50	2.00	2.00	2.00
MKTG DIV.		1.60	1.35		1.35	0.90	1.20	1.70	1.70	1.75		
MD-DB		0.10	0.05		0.35	-0.10	0.20		0.20	-0.25		

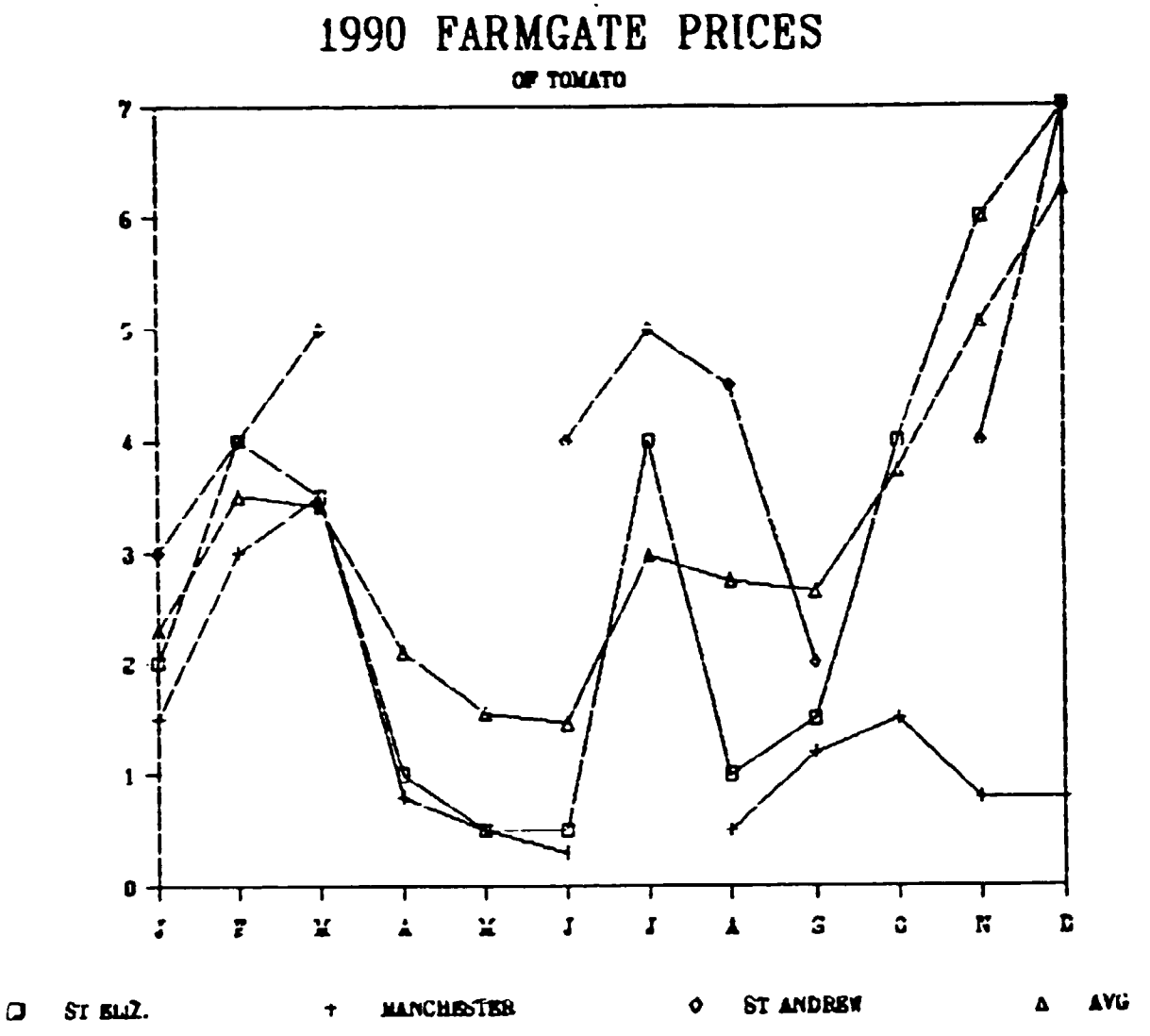
GRAPH IV. 1


1990 FARMGATE PRICES
OF CABBAGE
4
3.5
3
2.5
2
1.5
1
0.5
J F M A M J J A S O N D
ST ANDREW
ST ANN
MANCHESTER

GRAPH IV.2


1990 FARMGATE PRICES
OF CARROTS
7
6
5
4
3
2
1
J F M A M J J A S O N D
MANCHESTER
PORTLAND
ST ELIZ.
AVG.

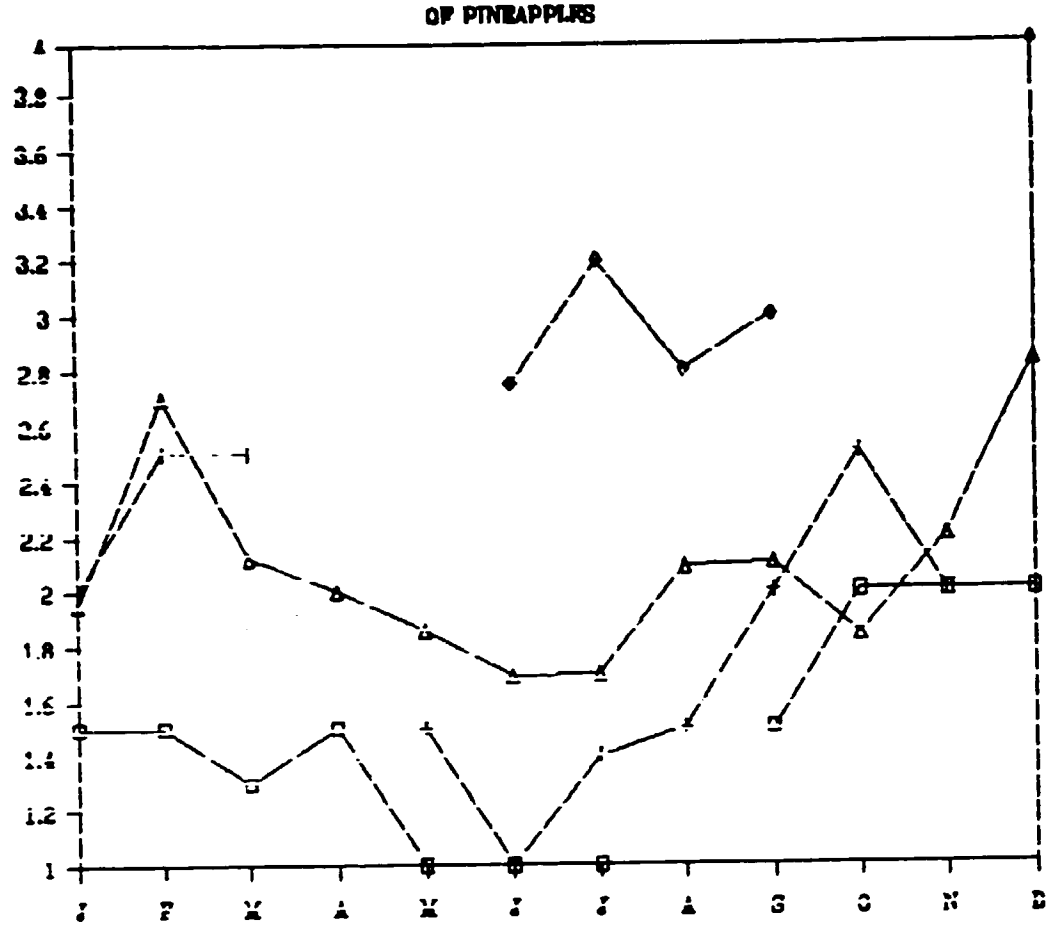
GRAPH IV.3


1990 FARMGATE PRICES
OF TOMATO
7
6
5
4
3
2
1
0
J
F
M
A
M
J
J
A
S
O
N
D
ST ELIZ.
MANCHESTER
ST ANDREW
AVG

GRAPH IV.4

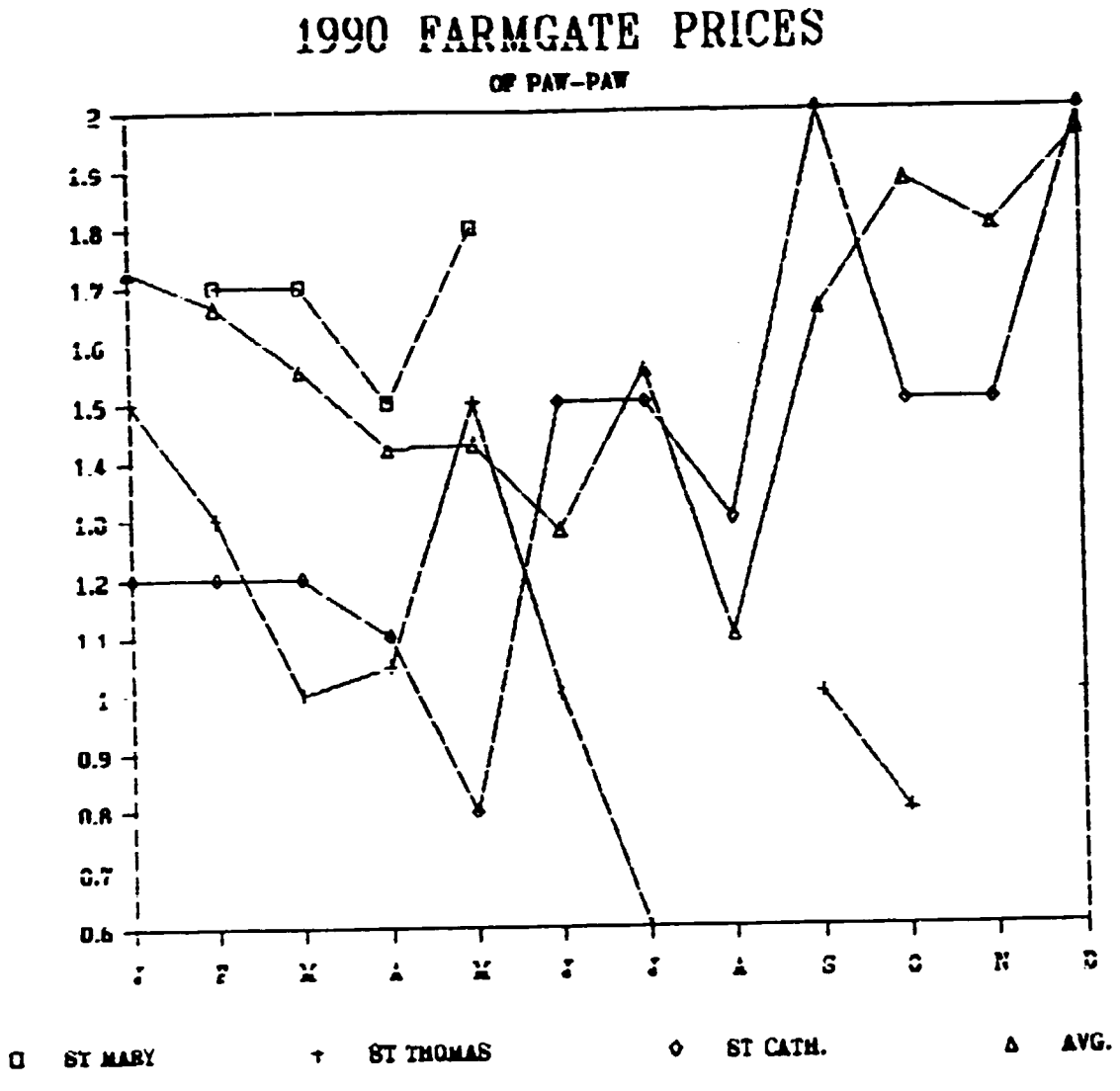
1990 FARMGATE PRICES

OF PINEAPPLES



□ ST ELIZ. + ST JAMES ◇ ST ANDREW △ AVG.

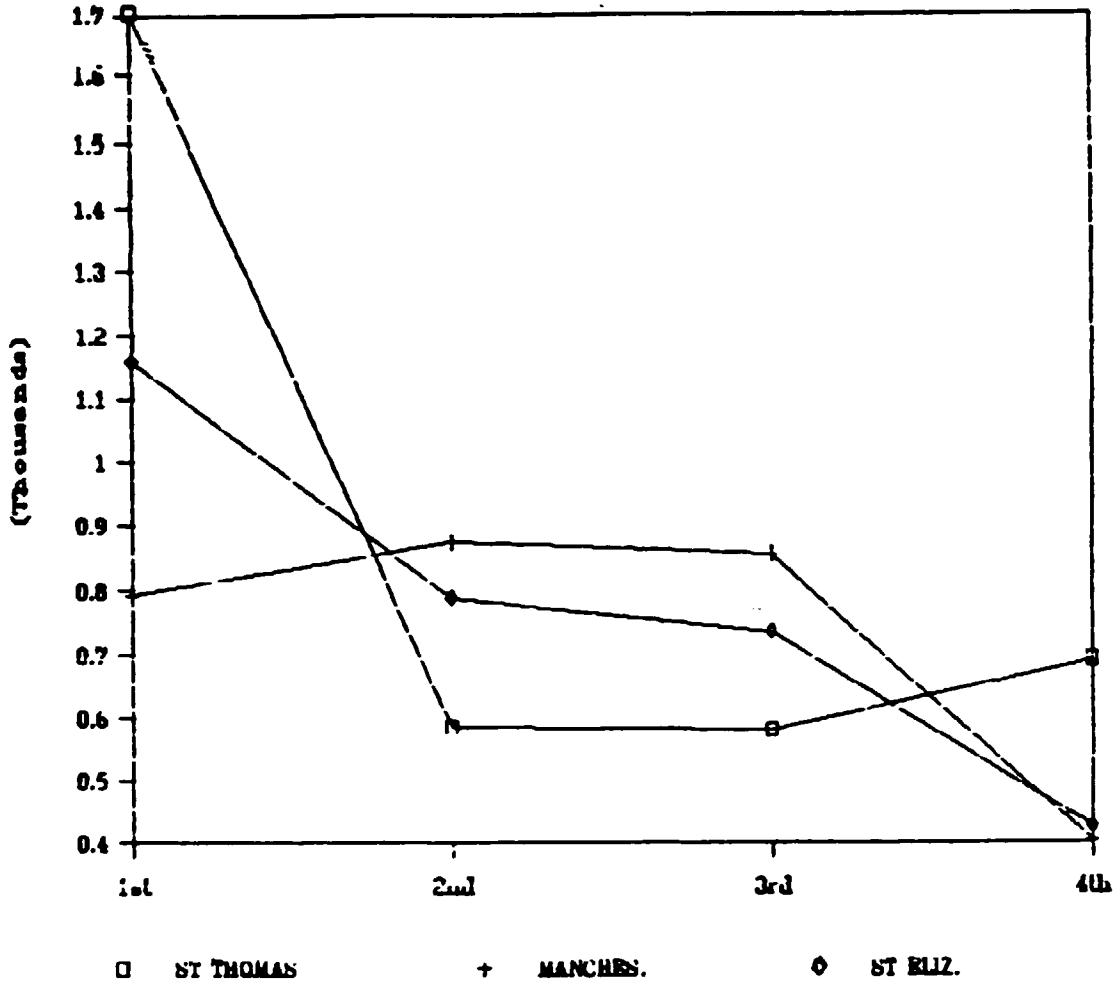
GRAPH IV.5


1990 FARMGATE PRICES
OF PAW-PAW
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
J F M A M J J A S O N D
ST MARY
ST THOMAS
ST CATH.
AVG.

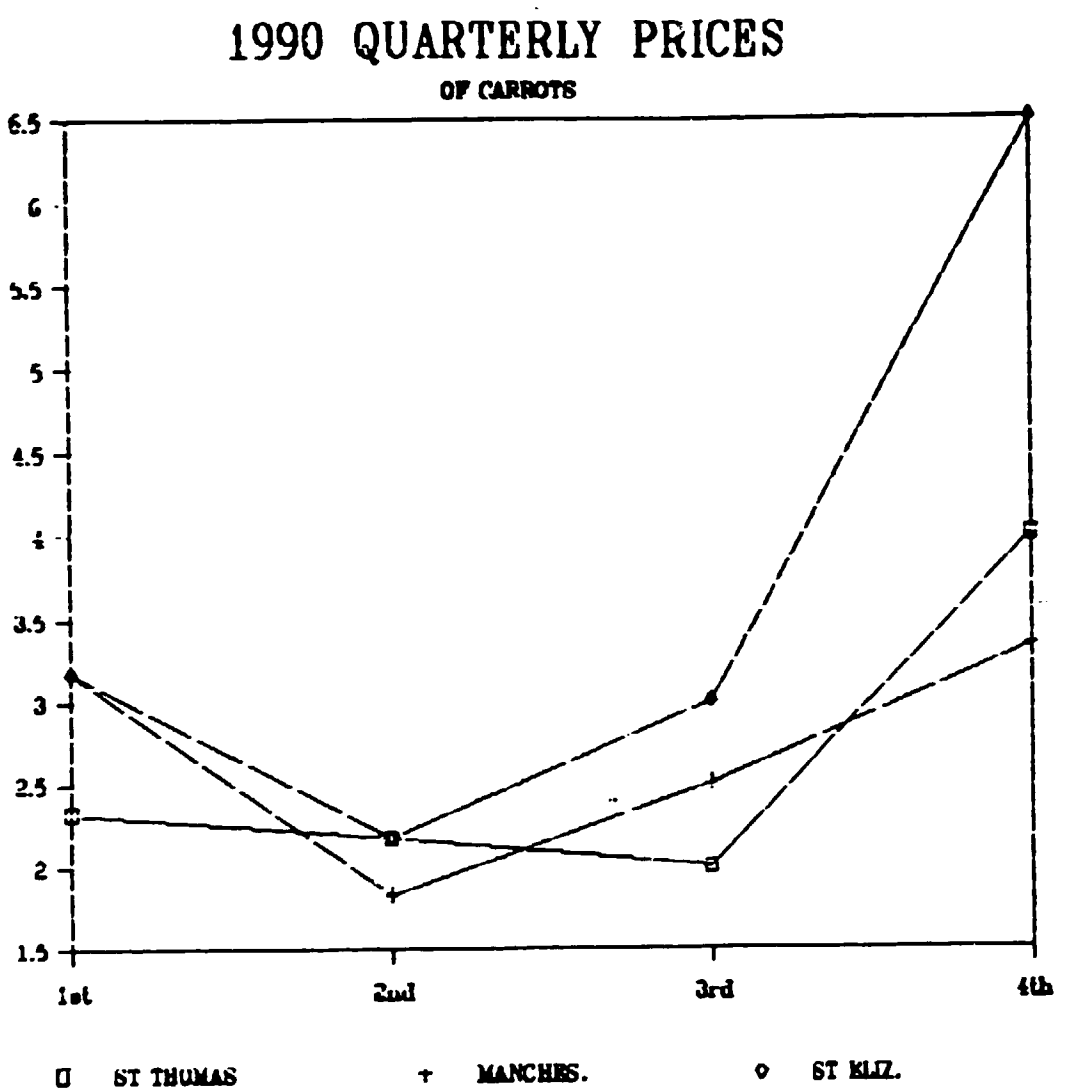
GRAPH IV.7

1990 QUARTERLY VOLUMES

OF CARROTS



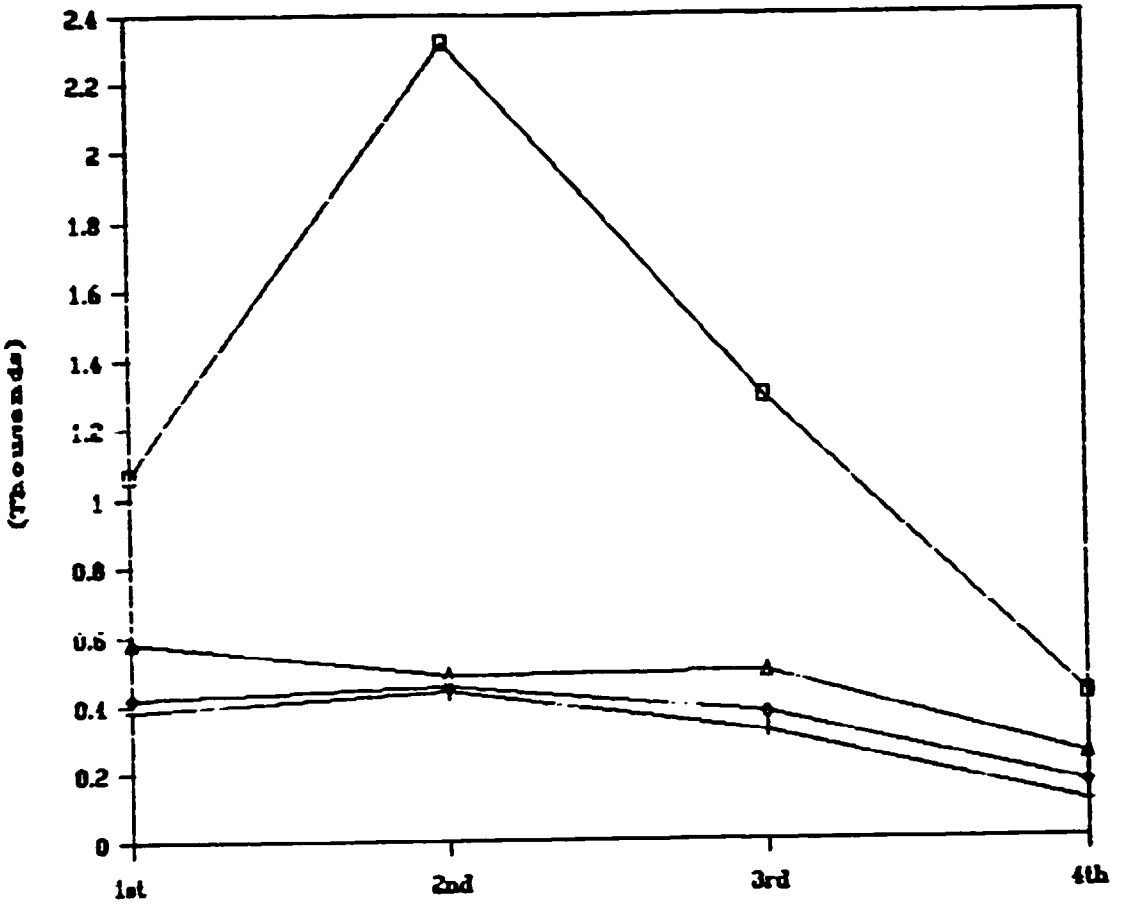
GRAPH IV. 8


1990 QUARTERLY PRICES
OF CARROTS
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1st
2nd
3rd
4th
ST THOMAS
MANCHES.
ST KLIZ.

GRAPH IV.9

1990 QUARTERLY VOLUMES

OF TOMATOES

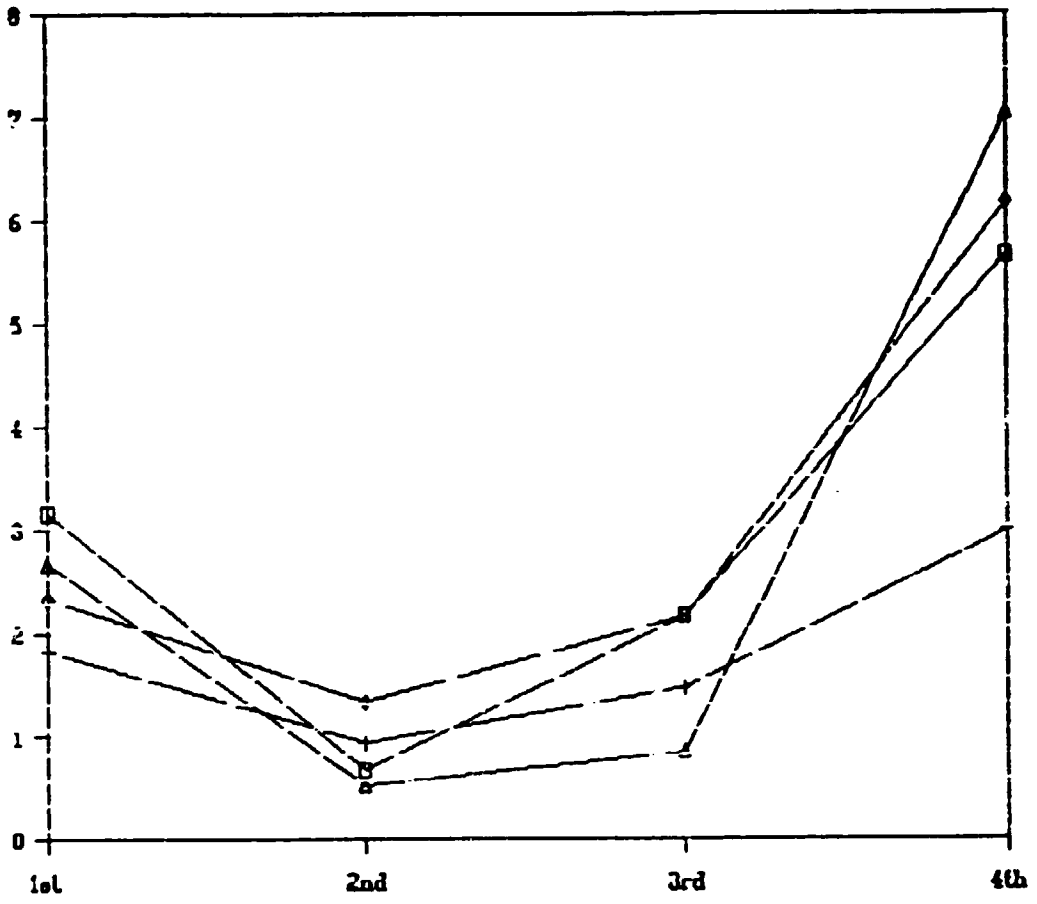


□ ST ELIZ. + ST CATH. ◊ WESTMOR. Δ MANCHES.

GRAPH IV.10

1990 QUARTERLY PRICES

OF TOMATOES

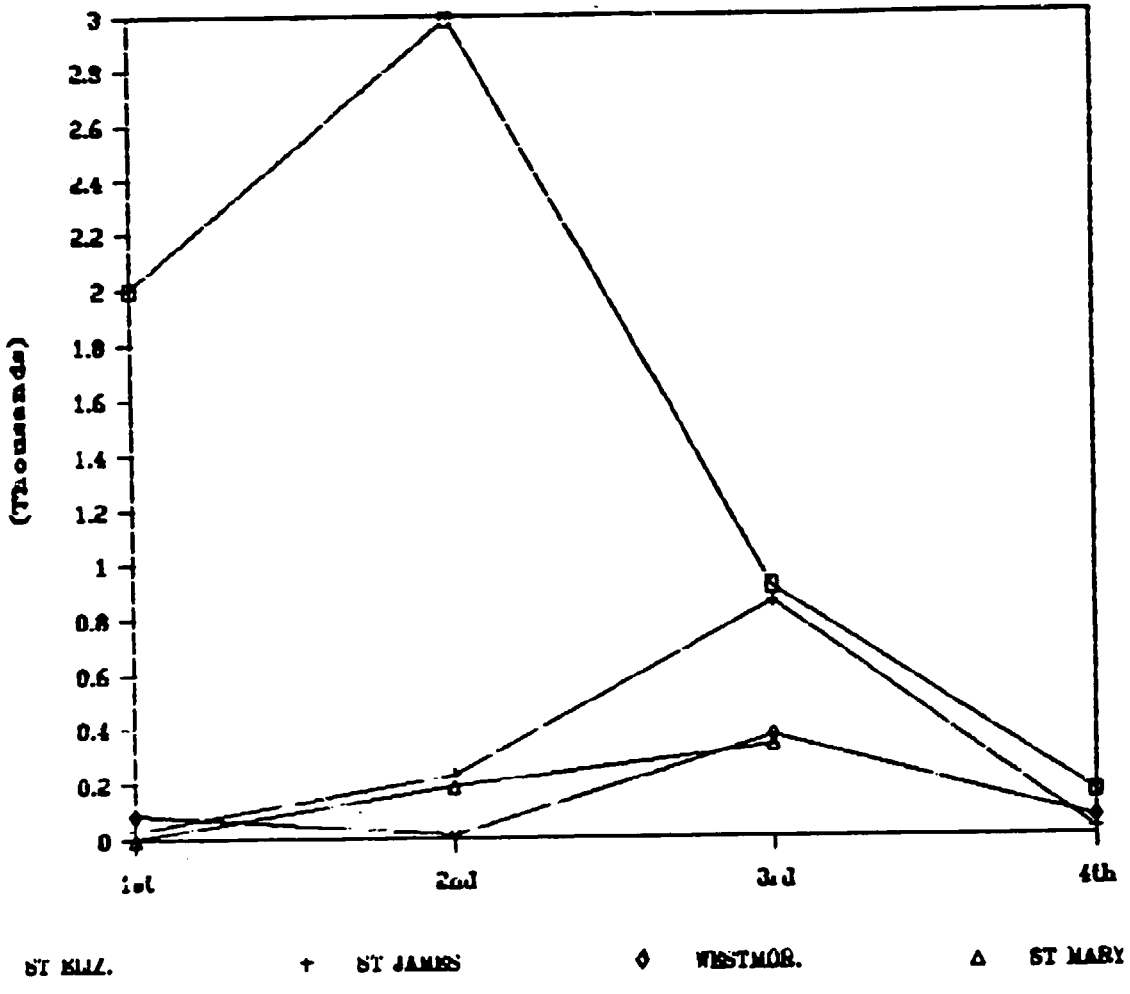


□ ST ELIZ. + ST CATH. ◇ WESTMOR. △ MANCHES.

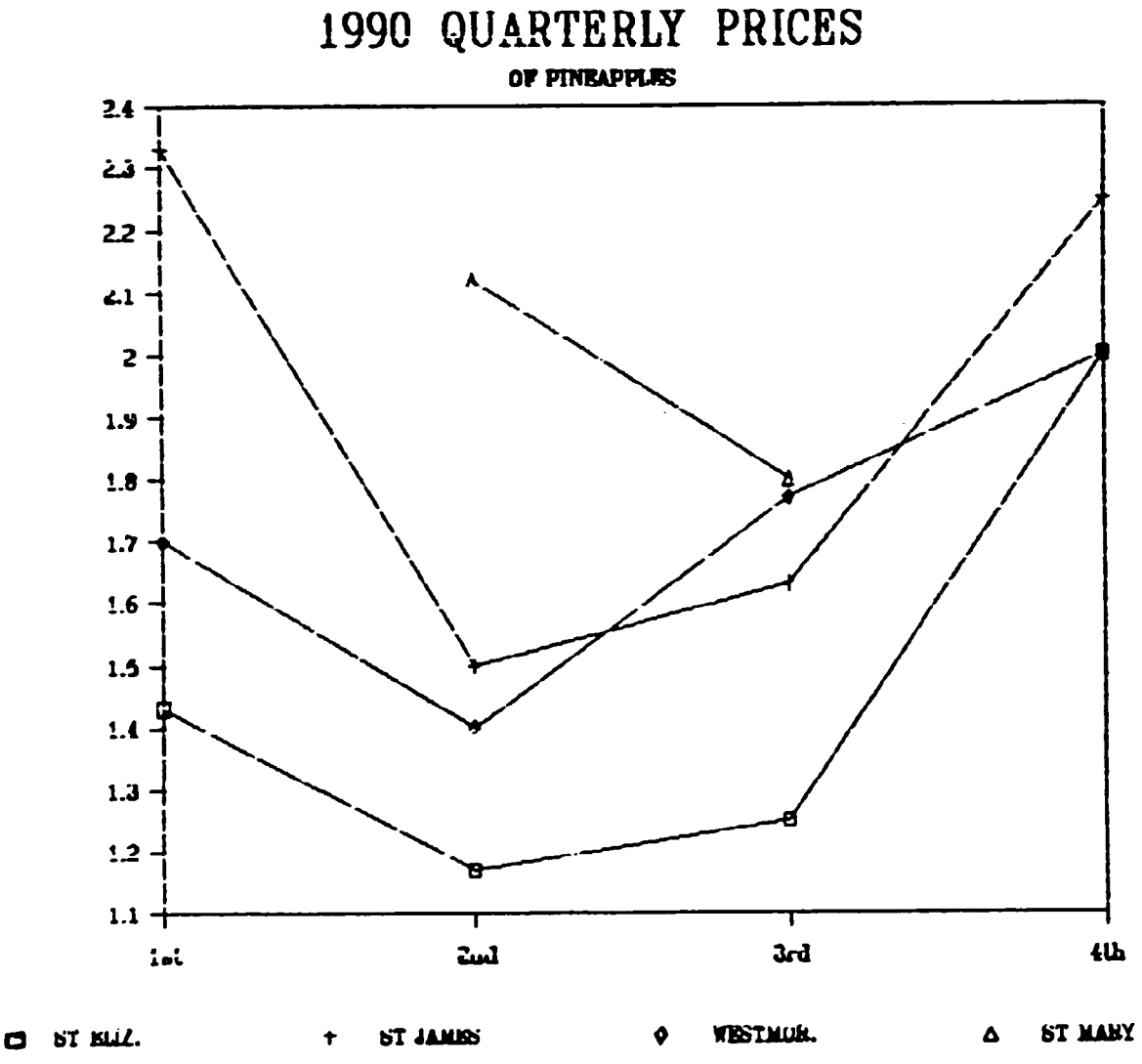
GRAPH IV.11

1990 QUARTERLY VOLUMES

OF PINEAPPLES



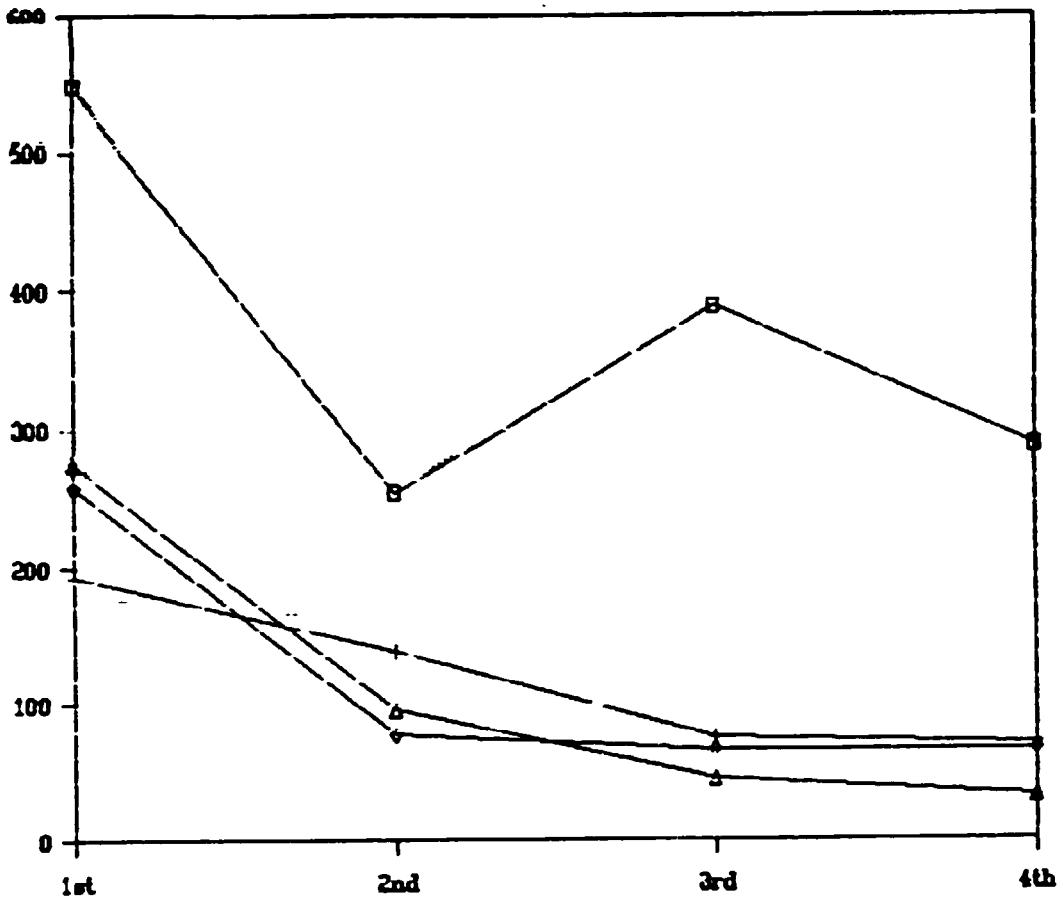
GRAPH IV.12


1990 QUARTERLY PRICES
OF PINEAPPLES
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1st
2nd
3rd
4th
ST KITT.
ST JAMES
WESTMOR.
ST MARY

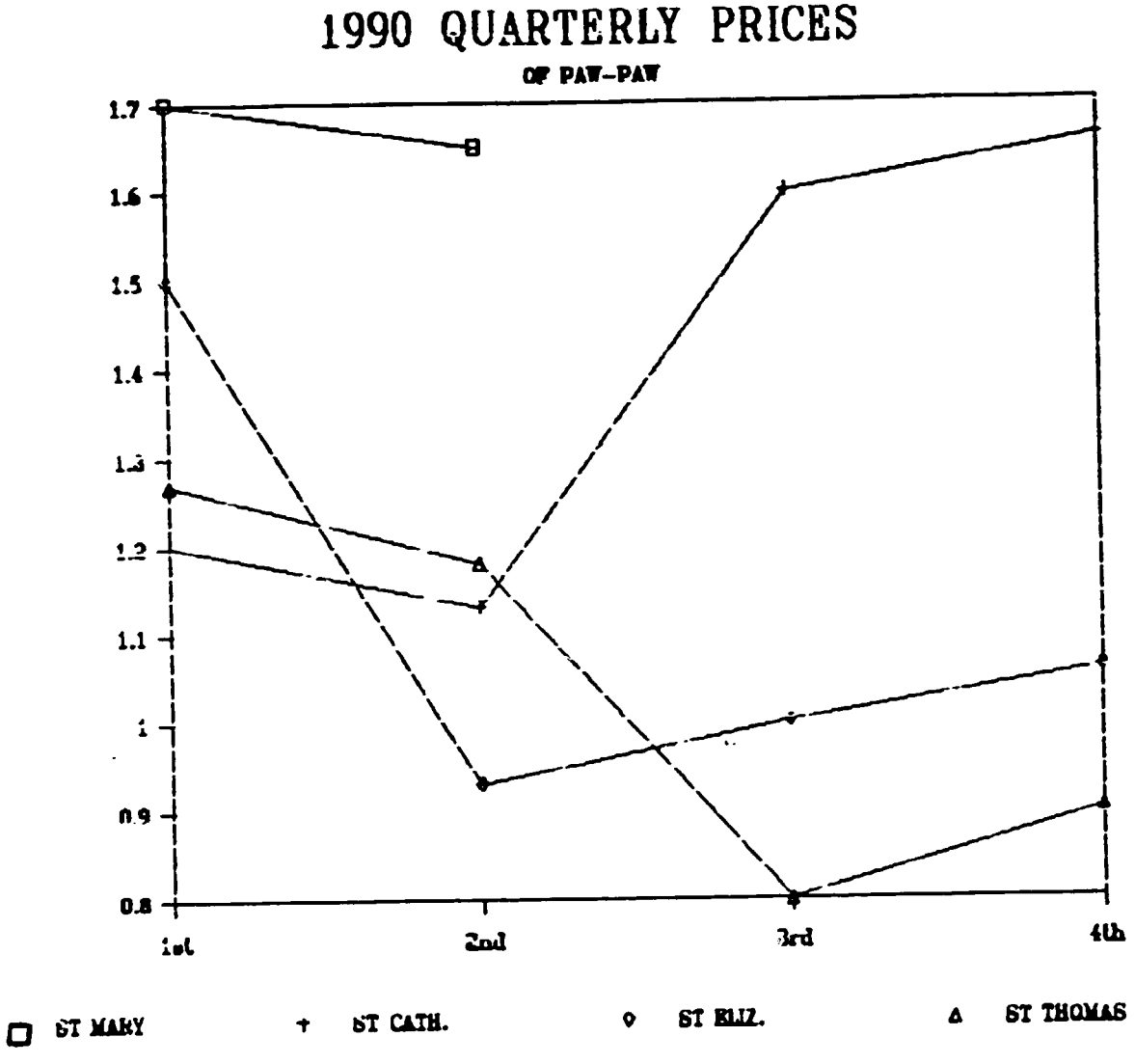
GRAPH IV.13

1990 QUARTERLY VOLUME

OF PAW-PAW



GRAPH IV.14


1990 QUARTERLY PRICES
OF PAW-PAW
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
1st
2nd
3rd
4th
ST MARY
ST CATH.
ST ELIZ.
ST THOMAS

ANNEX V

COSTS OF PRODUCTION

A bureau of the Ministry of Agriculture calculates quarterly costs of production for several commodities. Apparently, there is only one cost per commodity, which does not permit comparisons of productivity. The current methodology seems to be based on:

- using ratios of input/acre and of yield issued by inputs producing companies;
- updating prices affected to these ratios.

Yield assumptions are lower than average yield estimated by the Data Bank. Yet, calculated costs are very low, compared to farmgate prices (See Table V.1).

Table V.1

1991 COSTS OF PRODUCTION COMPARED TO 1990 FARMGATE PRICES

J$/lb	CARROTS	TOMATOES	PAW-PAWS
COST OF PRODUCTION	0.92	1.18	0.87
FARMGATE PRICE	2.17	2.34	1.55
PRICE/COST x 100	236	198	178
YIELD (ST/ACRE)			
COST OF PROD. ASSUMPTION	4	5	4
AVER. YIELD ESTIM. OF DATA BANK	4.7	5.1	6.4

ANNEX VI

BLEND PRICING

That form of pricing can be used under the following conditions:

- collective marketing, as through a coop;
- several grades of products, with different specific outlets;
- specific outlets for higher grades are saturated; consequently, higher grades are partly "under-used".

Example: lets assume that there are two suppliers, I and II, and three grades, A, B, and C. This could be respectively papayas for fresh export, for domestic market, and for processing.

Farmer I produces 50 of Grade A, 30 of Grade B, and 20 of Grade C.
Farmer II produces 40 of Grade A, 40 of Grade B, and 20 of Grade C.
Demand for Grade A is only 50, at a price of 10 ¤.
Demand for Grade B is 70, at a price of 5 ¤.
Demand of Grade C is unlimited, and it can take the remaining volume of 80, but at a low price of 1 ¤.
For practical reasons, lets assume that the whole Grade A outlet is supplied by farmer I. His B and C Grades production will go to their normal outlets.
Since there is no more available demand for the Grade A output of farmer II, the 40 units of this Grade he has produced will supply Grade B outlet.
Consequently, the Grade B outlet will be saturated by 30 Grade B from farmer I + 40 Grade A from farmer II = 70, which is the Grade B outlet we are assuming.
Consequently, the whole Grade B production of farmer II, plus his Grade C production will go to the cheap Grade C outlet.

It is easier for a coop to transport the whole production of a given farmer to a given outlet, rather than physically splitting deliveries so that every farmers meets an equal share of profitable outlets. Blend pricing consists in offsetting this unequality: for marketing and pricing purposes, the Grade A and B volumes will be priced and grouped according to the collective outlet they fulfiled, whatever the actual deliveries were for each farmer. In this example, the price of any Grade A supply will be:

(volume used as Grade A x 10 ¤) + (volume used as Grade B x 5 ¤) / total volume of Grade A supply
(50 x 10) + (40 x 5) / 90 = 7.78 ¤/unit.

The same calculation applies for the calculation of the blend price of Grade B supplies.

In addition to a fair sharing of different outlets, this method results in offsetting the low price requirement of the processing industry. This could become important, in the future, if collective bargaining can reach a dominating oposition on the fresh market. In this case, a general pricing policy could play with the prices levels of fresh and processed products, so that, for instance, a low processing price can be somehow subsidised by fresh consumption.

For instance, this is how the dairy processing industry in the US (and in the UK, before a full inforcement of EEC regulations !) can keep some competitiveness, in spite of a high farmgate price of milk: consumers of fresh milk are paying a kind of an "industrialisation tax".

ANNEX VII. THE CURRENT INFORMATION SYSTEM

A. AVAILABILITY OF RAPID INFORMATION

1) RADA/marketing Division of the Ministry of Agriculture has as a purpose to improve the marketing of products, mainly for fresh exports. It works with a small staff of 6 persons, 5 of them being regional officers.

These field officers observe farmgate prices and supplies situations for fresh exports in some parishes. This information is summarise into a monthly bulletin, which indicates prospects of supplies and ranges of farmgate prices, for non traditional export crops, in some parishes. These bulletins are sent principally to PMOs, exporters, and processors.

2) Market news reporters observe retail prices on market places. This information is sent to main buyers and sellers.

3) A Communication Center of RADA/Marketing Division works in the AMC complex, in Spanish Town. It receives prices information and transmits it to the principal agents. In addition, it is fed in from information on precise supply availabilities, mainly from PMOs, and can fed out the same information to buyers.

4) Every other week, newspapers publish a list of "suggested farmgate prices". These prices are calculated, taking into account export prices and the cost of production.

B. LONG-TERM STATISTICAL OPERATIONS ON PRICES AND SUPPLY

1) The Data Bank of the Ministry of Agriculture publishes quarterly series of prices and estimated acreage and yield, for 52 agricultural commodities which can have a domestic use. Pineapples and paw-paws are the only fruits present in these series. The methodology is:

- a network of field officers observes prices and production in every parish;
- these data are monthly transmitted to the Data Bank; in every parish, the range of observed prices is reduced to a single representative datum;
- using estimated acreage and yield per acre, a quarterly weighted average of farmgate prices in Jamaica is calculated and published;
- monthly data and data by parish are not published (as far as I know).

2) Situation and Outlook reports are realised every quarter and/or every year, for selected commodities. They summarise information on supply situations and prices.

ANNEX VIII

THE PRODUCERS' MARKETING ORGANISATIONS (PMO)

They were created during the 1980s, by a concerted effort of the Ministry of Agriculture, the Jamaica Agricultural Society, and the National Union of Cooperatives Society.

5 of them are currently working

- Rio Grande Valley (Portland): cocoa, dasheen, plantains, pumpkins, and other vegetables;
- Mason River (Clarendon): same range of crops;
- Wait-A-Bit (Trelawny): yams, cocoa, Irish potatoes,...
- Bushy Park (St Catherine): vegetables, mangoes.
- Guy's Hill (St Catherine): Irish potatoes, pumpkins, dasheen,...

The size and the range of activities of these PMOs are very similar. By example, the Guy's Hill PMO, which is the most active,

- has about 240 members, on an area of 10 miles radius;
- markets some 300 000 tons of vegetables a year;
- supplies 4 exporters and 2 supermarkets;
- uses the Communication Center of the Marketing Division in order to find outlets (See Annex VIII);
- levies 0.30 J$ for the general functioning of the PMO.

This PMO is currently trying to develop Irish potatoes varieties adequate for the supply of fast-food chains. As a matter of fact, it markets a very small share of the total output of the members, who generally keep on relying on higglers. This problem is a general one.

Every PMO manages a farm supplies store. Bushy Park had a green grocery, which does not work anymore because of housing problems. Guy's Hill and Bushy Park have a cold storage facility.

A Coordinating Committee of PMOs exists, but it is not operational.

Because of a to low volume of business, the PMOs seem to have problems to repay the initial lease of equipement.

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