

PD-ABL-197

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UNCLASSIFIED

**UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523**

JAMAICA

PROJECT PAPER

AGRICULTURAL MARKETING DEVELOPMENT

AID/LAC/P-065

**Project Number: 532-T-013
Loan Number: 532-0060**

UNCLASSIFIED

PID-ABL-197

| | | | | |
|---|-------------------------------------|---|---|-----------------------------------|
| AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET | | 1. TRANSACTION CODE <div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> A ADD C CHANGE D DELETE | | PP <hr/> 2. DOCUMENT CODE 3 |
| 3. COUNTRY ENTITY JAMAICA | | 4. DOCUMENT REVISION NUMBER <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div> | | |
| 5. PROJECT NUMBER (7 digits) <div style="border: 1px solid black; padding: 2px; display: inline-block;">532-0060</div> | 6. BUREAU OFFICE A SYMBDL LAC | B. CODE <div style="border: 1px solid black; padding: 2px; display: inline-block;">05</div> | 7. PROJECT TITLE (Maximum 40 characters) <div style="border: 1px solid black; padding: 2px; display: inline-block;">AGRICULTURAL MARKETING DEVELOPMENT</div> | |
| B. ESTIMATED FY OF PROJECT COMPLETION FY <div style="border: 1px solid black; padding: 2px; display: inline-block;">84</div> | | 9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <div style="border: 1px solid black; padding: 2px; display: inline-block;">810</div> B. QUARTER <div style="border: 1px solid black; padding: 2px; display: inline-block;">2</div> C. FINAL FY <div style="border: 1px solid black; padding: 2px; display: inline-block;">811</div> (Enter 1, 2, 3, or 4) | | |

| 10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -) | | | | | | |
|--|-----------|----------|-----------|-----------------|-----------|------------|
| A. FUNDING SOURCE | FIRST FY | | | LIFE OF PROJECT | | |
| | B. FX | C. L. C. | D. TOTAL | E. FX | F. L. C. | G. TOTAL |
| AID APPROPRIATED TOTAL | 4,700 | - | 4,700 | 10,856 | 1,113 | 11,969 |
| GRANT: | (-) | (-) | () | () | () | () |
| LOAN: | (4,700) | () | (4,700) | (10,856) | (1,113) | (11,969) |
| OTHER U.S. 1. | | | | | | |
| OTHER U.S. 2. | | | | | | |
| HOST COUNTRY | | 3,426 | 3,426 | | 11,713 | 11,713 |
| OTHER DONOR(S) | | | | | | |
| TOTALS | 4,700 | 3,426 | 8,126 | 10,856 | 12,826 | 23,682 |

| 11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000) | | | | | | | | | |
|--|-------------------------|--------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|
| A. APPROPRIATION | B. PRIMARY PURPOSE CODE | PRIMARY TECH. CODE | | E. 1ST FY <u>80</u> | | H. 2ND FY <u>81</u> | | K. 3RD FY <u>82</u> | |
| | | C. GRANT | D. LOAN | F. GRANT | G. LOAN | I. GRANT | J. LOAN | L. GRANT | M. LOAN |
| (1) FN | 130 | | 140 | | 4,700 | | 7,269 | | |
| (2) | | | | | | | | | |
| (3) | | | | | | | | | |
| (4) | | | | | | | | | |
| TOTALS | | | | | | | | | |

| A. APPROPRIATION | N. 4TH FY <u>83</u> | | O. 5TH FY <u>84</u> | | LIFE OF PROJECT | | 12. IN-DEPTH EVALUATION SCHEDULED |
|------------------|---------------------|---------|---------------------|---------|-----------------|---------|---|
| | Q. GRANT | P. LOAN | R. GRANT | S. LOAN | T. GRANT | U. LOAN | |
| (1) FN | - | - | - | - | | 11,969 | <div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM YY 03 82 </div> |
| (2) | | | | | | | |
| (3) | | | | | | | |
| (4) TOTALS | - | - | - | - | | 11,969 | |

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

2

 1 NO
 2 YES

| | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|
| 14. ORIGINATING OFFICE CLEARANCE | | | | 15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION | | | |
| SIGNATURE | | | | <div style="border: 1px solid black; display: inline-block; padding: 5px;"> MM DD YY </div> | | | |
| TITLE | | DATE SIGNED | | | | | |
| Director | | <div style="border: 1px solid black; display: inline-block; padding: 2px;"> MM DD YY </div> | | <div style="border: 1px solid black; display: inline-block; padding: 2px;"> MM DD YY </div> | | | |

PROJECT AUTHORIZATION

Name of Country: Jamaica AID/LAC/ P-065
Name of Project: Agricultural Marketing Development
Number of Project: 532-0060
Number of Loan: 532-T-013

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agricultural Marketing Development project for Jamaica, involving planned obligations of not to exceed Four Million Seven Hundred Thousand United States Dollars (\$4,700,000) in loan funds over a one-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project consists of the establishment of a Marketing Division within the Ministry of Agriculture (the "MOA") to increase the efficiency of Jamaica's agricultural marketing system (the "Project").

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment

The Government of Jamaica (the "Borrower") shall repay the Loan to A.I.D. in U.S. Dollars within twenty (20) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Borrower shall pay to A.I.D. in U.S. Dollars interest from the date of first disbursement of the Loan at the rate of (i) two percent (2%) per annum during the first ten (10) years, and (ii) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

Goods and Services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in Jamaica or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States and Jamaica.

c. Conditions Precedent to Initial Disbursement

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Borrower shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- (1) Evidence that sufficient space to house the new Marketing Division has been allocated within existing facilities or that new facilities have been acquired;
- (2) Evidence that a Marketing Division Director/Project Manager has been appointed; and
- (3) Evidence that the existing personnel currently involved in marketing activities within the MOA have been seconded to the Project.

d. Condition Precedent to Disbursement for Training Outside of Jamaica

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for training outside of Jamaica, the Borrower shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., evidence that a system of bonding or some other method has been implemented to ensure that participant trainees will return to their post for a period of time not less than twice the length of time spent in training.

e. Covenants

The Borrower shall covenant that, unless A.I.D. otherwise agrees in writing, it will:

- (1) Within six months of the signing of the Project Agreement, cause the Ministry of the Public Service to create the new positions needed for the Project to meet its implementation goals and cause the Ministry of Finance to provide the funding needed to cover the recurrent costs of such positions;
- (2) Provide adequate budget allocations for Project implementation in a timely manner consistent with implementation schedules developed by the Agricultural Marketing Division;
- (3) Within three months of the signing of the Project Agreement, provide a time-phased implementation schedule for the remainder of the first Project year, such schedule to be in form and substance satisfactory to A.I.D.;
- (4) For each twelve-month period commencing three months after the signing of the Project Agreement, furnish time-phased implementation schedules for each twelve-month period of the Project, each based on the results of the annual evaluation and the annual audit of the Project during the previous twelve-month period, such schedules to be in form and substance satisfactory to A.I.D.;

- (5) Pay the salaries and international travel of overseas participant trainees;
- (6) Implement procedures to ensure cooperation of the Ministry of Local Government, Ministry of Works, Ministry of Industry and Commerce, and the Town Planning Unit to enable the Project to meet its implementation goals; and
- (7) Within three years of the signing of the Project Agreement, cause the Ministry of the Public Service to approve a staffing plan which makes the Marketing Division a permanent part of the MOA.

Edward W. Cony

Acting Assistant Administrator
Bureau for Latin America
and the Caribbean

12-3-80

Date

Clearances:

GC/LAC:BVeret: BV/SM date 12-3-80
LAC/CAR:RDelaney: RD date 12-2-80
LAC/DR:LArmstrong: LAL date 12/2/80

LAC/DR:MBrown: MB date 12-2-80

GC/LAC:GMWinter: GM 11/25/80:x29183

TO BE COMPLETED BY OPERATING OFFICE

A. COUNTRY
B. DATE

2. DOCUMENT
TYPE

JAMAICA

3. PROJECT NUMBER (7 DIGITS)

[532-0060]

4. OPERATING OFFICE

LA [5]

7. PROJECT TITLE (MAXIMUM 50 CHARACTERS)

AGRICULTURAL SECTOR

8. PROPOSED TEXT DISCIPLINE

A. [3] 2 = PRP
3 = PP

B. DATE 01 7 9

9. INITIATED BY OF AUTHORIZATION/OBLIGATION

A. INITIAL FY [7 9]

B. FINAL FY [8 3]

10. ESTIMATED COSTS

(\$1000 OR EQUIVALENT, \$1 = .100%)

| FUNDING SOURCE | | AMOUNT |
|---------------------|---------|--------|
| A. AID APPROPRIATED | | 16,000 |
| B. OTHER | 1. | |
| | 2. U.S. | |
| C. HOST COUNTRY | | 4,000 |
| D. OTHER DONOR(S) | | |
| TOTAL | | 30,000 |

11. PROPOSED COUNTRY AID APPROPRIATED FUNDS (\$1000)

| A. APPROPRIATION | B. PRIMARY PURPOSE CODE | PRIMARY TECH. CODE | | E. FIRST FY 70 | | LIFE OF PROJECT | |
|------------------|-------------------------|--------------------|---------|----------------|---------|-----------------|---------|
| | | C. GRANT | D. LOAN | F. GRANT | G. LOAN | H. GRANT | I. LOAN |
| (1) F&N | 250 | | 200 | | 16,000 | | 16,000 |
| (2) | | | | | | | |
| (3) | | | | | | | |
| (4) | | | | | | | |
| | | TOTAL | | | | | |

12. SECONDARY TECHNICAL CODES (maximum six codes of four positions each)

220 | 252 | 010 | 031 | 040 | 061

13. SPECIAL CONDITIONS CODES (maximum six codes of four positions each)

BS | COOP | EQTY | PART

14. SECONDARY PROJECT CODE

210

15. PROJECT GOAL (maximum 200 characters)

To increase Jamaica's agricultural production, economic well-being, and social equity through a program of assistance to small farmers.

16. PROJECT DESCRIPTION (maximum 400 characters)

To improve agricultural productivity, income, and equality of distribution through an integrated development program utilizing community-based organizations as the vehicle for channeling applied research, extension services, credit, inputs, and marketing infrastructure and assistance to small farmers.

17. PLANNING TO SECURE TO OBTAIN STAFF/STUDY

Approximately 6 person-months of TDY assistance to aid in specialized aspects of project.

18. OPERATING OFFICE CLEARANCE

John A. ...
Mission Director

035 SEC-13 77
01 13 77

19. THIS FORM IS REQUIRED BY AIC/A, on Form AF 20 (10-66) DATE OF DISTRIBUTION

FORM 1335-2 (1-70)

BEST AVAILABLE COPY

Agricultural Marketing

T A B L E O F C O N T E N T S

| | page |
|---|------|
| I. SUMMARY AND RECOMMENDATIONS | i |
| A. Recommendations | i |
| B. Borrower/Grantee | i |
| C. Project Description | i |
| D. Financial Summary | ii |
| E. Summary Findings | iii |
| F. Issues | iv |
| G. Project Development Committee | v |
| II. PROJECT DESCRIPTION | 1 |
| A. Background | 1 |
| 1. Overview | 1 |
| 2. Agricultural and Food Marketing System in Jamaica | 2 |
| 3. Problems and Constraints | 10 |
| 4. Project Rationale and Strategy | 13 |
| 5. Other Donor Assistance and Related Agricultural Sector Programs | 14 |
| B. Project Components | 19 |
| 1. Goal and Purpose | 19 |
| 2. Marketing Division | 19 |
| 3. Subterminal Wholesale Distribution Markets | 33 |
| 4. Assembly and Grading Stations | 40 |
| C. Beneficiaries of the Project | 47 |
| 1. Small Farmers | 47 |
| 2. Market Intermediaries | 47 |
| 3. Consumers | 47 |

| | page |
|---|------|
| III. PROJECT ANALYSES | 48 |
| A. Technical and Administrative Analysis | 48 |
| 1. Introduction | 48 |
| 2. Policy Framework | 48 |
| 3. Staffing | 49 |
| 4. Training | 50 |
| 5. Subterminal Wholesale Distribution Markets | 50 |
| 6. Assembly and Grading Stations | 51 |
| 7. MOA Capacity | 51 |
| 8. USAID Capacity | 52 |
| 9. Conclusion | 52 |
| B. Engineering Analysis | 53 |
| 1. Project Construction Costs | 53 |
| 2. Design and Supervision of Construction | 53 |
| 3. Engineering Criteria and Specifications | 54 |
| 4. A & E Elements of Project Implementation | 54 |
| 5. Construction Contractors | 55 |
| C. Economic Analysis | 56 |
| 1. Introduction | 56 |
| 2. Projection of Benefits | 56 |
| 3. The Costs | 62 |
| 4. Benefit-Cost Calculation | 62 |
| 5. Impact on Foreign Exchange Budget | 65 |
| 6. Distribution of Benefits | 68 |
| 7. Interpretation of Results | 71 |
| 8. Conclusion | 72 |
| D. Financial Analysis and Plan | 73 |
| 1. Ability of GOJ to Meet Operating Costs of the Project | 73 |
| 2. Profitability of Subterminal Wholesale Distribution Markets | 77 |
| 3. Profitability of Assembly and Grading Stations | 79 |
| 4. Financial Plan | 81 |
| E. Social Soundness Analysis | 83 |
| 1. Overview | 83 |
| 2. Description of Target Groups | 83 |
| 3. Role of Women | 85 |
| 4. Impact on Higglers | 85 |
| 5. Extension Strategy | 86 |
| 6. Socio-Cultural Feasibility | 87 |

| | page |
|--|------|
| IV. IMPLEMENTATION PLAN | 88 |
| A. Implementation Arrangements and Schedule | 88 |
| B. Evaluation Plan | 88 |
| C. Conditions Precedent and Covenants | 89 |
| 1. Conditions Precedent to Loan Disbursements | 89 |
| 2. Special Covenants for Project Loan Agreement | 90 |
| 3. Special Covenants for Project Grant Agreement | 91 |
| 4. Conditions Precedent to Grant Disbursement | 91 |

ANNEXES

- A. Logical Framework
- B. Statutory Checklist
- C. Mission Director's 611(e) Certification
- D. PID Approval Message
- E. Request for Assistance
- F. GOJ National Agricultural and Food Marketing Policy and Strategy
- G. Technical Assistance Job Descriptions
- H. GOJ Conditions of Contract, Bills of Quantities and Specifications
- I. Initial Environmental Examination

4

Agricultural Marketing

L I S T O F T A B L E S

| Table No. | Title | page |
|-----------|--|------|
| 1. | Budget Summary | ii |
| 2. | Training Programs by Type of Training, Subject Matter and Number of Participants | 24 |
| 3. | Marketing Division Staffing Requirements and Costs | 30 |
| 4. | Marketing Division Costs: New Funding | 32 |
| 5. | Wholesale Market Construction Costs | 36 |
| 6. | Subterminal Wholesale Distribution Markets Staffing Require- ments and Costs | 38 |
| 7. | Subterminal Wholesale Distribution Markets (4) Costs | 39 |
| 8. | Assembly and Grading Station Construction Costs by Model of Facility | 42 |
| 9. | Assembly and Grading Stations | 43 |
| 10. | Assembly and Grading Station Staffing Costs | 46 |
| 11. | Assumptions and Projections of Project Benefits | 57 |
| 12. | Projection of Production of Major Products and Product Cate- gories Affected by Project | 59 |
| 13. | Estimate of Gross Benefits | 60 |
| 14. | Estimate of Gross Benefits | 61 |
| 15. | Consolidated Start-Up Costs | 63 |
| 16. | Recurrent Costs | 64 |
| 17. | Benefit-Cost Analysis | 66 |
| 18. | Food Imports, 1971-78 and Projected to 1994 | 67 |
| 19. | Estimated Foreign Exchange Savings Through Import Substitu- tion | 69 |
| 20. | Central Government Budget | 74 |
| 21. | Project Recurrent Costs in 1985 | 74 |
| 22. | Distribution of Capital Costs by Market and Storage Area Standard Warehouse Design | 75 |
| 23. | Subterminal Wholesale Distribution Markets Annual Operating Expenses | 76 |
| 24. | Annual Operating Costs and Sales at Break-even | 78 |
| 25. | Assembly and Grading Stations Annual Operating Expenses | 79 |
| 26. | Total Project Cost by Project Component | 81 |
| 27. | Disbursement Schedule | 82 |

Agricultural Marketing

L I S T O F F I G U R E S

| Figure No. | Title | page |
|------------|---|------|
| 1. | Marketing System Illustrating Role of Producers, Assembly and Grading Stations, Wholesalers, Subterminal Wholesale Distribution Markets and Retailers in Enhancing Assembly, Concentration and Dispersion Roles | 4 |
| 2. | Illustration of Proposed Marketing Distribution System . . . | 17 |
| 3. | Present Parish Retail Markets and Potential Areas for Subterminal Wholesale Distribution Markets | 18 |
| 4. | Technical Assistance Scheduling | 22 |
| 5. | Marketing Project Training Scheduling | 25 |
| 6. | Commodity Scheduling | 27 |
| 7. | Organization Chart of Proposed Marketing Division | 29 |
| 8. | Scheduling of Construction and Procurement | 36 |
| 9. | Schedule of Construction for Assembly and Grading Stations . | 44 |
| 10. | Agricultural Marketing Project Schedule of Key Events . . . | 92 |

I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

To increase the efficiency of Jamaica's agricultural marketing system, USAID/Jamaica recommends a two phase project. Phase I will be initiated by a loan of \$4,700,000. Phase II will be initiated by a loan of approximately \$7,269,000 after completing plans and costing. The loan for Phase I will be funded in FY 81,

The loan will be for twenty (20) years with ten (10) years' grace, with interest of 2 percent during the grace period and 3 percent thereafter.

B. Borrower

The borrower will be the Ministry of Finance on behalf of the Government of Jamaica. The primary executing agency will be the Ministry of Agriculture. The Ministry of Agriculture is responsible, inter alia, for the development and implementation of the GOJ's marketing policy, strategy and programs.

C. Project Description

The goal of the Project is to improve the living standards of farmers, consumers and market intermediaries. The purpose of the Project is to improve the efficiency of the marketing system.

The Project will be implemented in two phases.

Phase I - The establishment of a Marketing Division in the Ministry of Agriculture and the provisions of a large technical assistance component and a large training component.

Phase II - The construction of four sub-Terminal Wholesale Distribution Markets.

The construction and equipping of 25 Assembly and Grading Stations in producing areas.

These basic interventions will make it possible for the marketing system to perform necessary functions now not carried out, as well as improve the performance of functions now undertaken poorly and at high cost.

An expanded and strengthened Marketing Division will assist in improving post harvest technology, producer support and product distribution. It will also assist in: market development; the provision of market information; market research; marketing training and extension; and, quality assurance.

Subterminal Wholesale Distribution Markets will make possible the: reduction of post harvest losses; expansion of markets for locally produced crops; and, increased availability of graded agricultural products.

Assembly and Grading Stations will: permit collection and assembly of commodities into volumes large enough to sort into identifiable grades and facilitate shipment of other markets; reduce the cost and widen the choices of commodities to other intermediaries; promote economies of scale to producers and intermediaries; and, provide a more effective means of distributing factor inputs to small farmers.

Technical assistance and training will focus primarily on the Marketing Division and will impact on the establishment and operations of the Subterminal Wholesale Distribution Markets and Assembly and Grading Stations via the work of the Marketing Division as well as directly on personnel involved in these market system components, e.g., training of management staff. Commodity assistance, as appropriate, will facilitate the successful completion of the three basic interventions.

D. Financial Summary

The total cost of Phase I of the Project is \$8,154,000. AID will provide \$4,700,000 in loan fund; the GOJ \$3,426,000.

Table 1a

Budget Summary - Phase I

(US\$000)

| | <u>AID</u> | <u>GOJ</u> | <u>TOTAL</u> |
|------------------------------|------------|------------|--------------|
| Technical Assistance | 3,166 | --- | 3,166 |
| Participant Training | 492 | 100 | 592 |
| Commodities | 126 | --- | 126 |
| Net Operating Expenses | ---- | 2537 | 2,537 |
| Contingency and Inflation | 944 | 789 | 1,733 |
| TOTAL | 4,700 | 3426 | 8,126 |

The estimated cost of Phase II of the Project is \$15,528,000. AID will provide \$7,241,000 in loan funds; GOJ, \$8,287,000.

Table 1bBudget Summary Estimate - Phase II

(US\$000)

| | <u>AID</u> | <u>GOJ</u> | <u>TOTAL</u> |
|----------------------------------|--------------|--------------|---------------|
| Commodities | 900 | --- | 900 |
| Buildings, Equipment and Land | 5,000 | 4,300 | 9,300 |
| Net Operating Expenses | --- | 2,292 | 2,292 |
| Contingency & Inflation | <u>1,369</u> | <u>1,695</u> | <u>3,064</u> |
| TOTAL | <u>7,269</u> | <u>8,287</u> | <u>15,556</u> |

The operating costs of the Marketing Division, a negligible portion of the Ministry of Agriculture's budget, would be less than 10 percent of the increased tax collections (conservatively estimated) attributable to the Project. Revenues from the Subterminal Wholesale Distribution Markets and Assembly and Grading Stations are likely, at the least, to cover operating costs, including depreciation.

E. Summary Findings

Marketing problems create substantial post harvest losses and impede agricultural production. As a result, incomes of small farmers and market intermediaries are depressed while consumers' purchasing power is reduced and the nutritional status of critical groups is adversely affected. Food imports are unnecessarily high and agricultural exports are constrained, making for a harmful impact upon an already grave foreign exchange situation.

The GOJ has established agriculture as a high priority development sector and has recognized the improvement of marketing as a prerequisite to production increases. It has adopted an explicit marketing policy and strategy and has launched a comprehensive, integrated set of marketing activities. Total investment in these and related programs over the next five years will be approximately \$50,000,000 financed by the GOJ and several donors, including the World Bank and the IDB.

This Project was designed jointly by the Ministry of Agriculture and USAID/Jamaica expressly to carry out the GOJ's marketing policy, strategy and proposed activities, and to complement and support the GOJ's other marketing interventions. This Project also represents a key component of USAID/Jamaica's development strategy in agriculture. It reinforces, and in turn is reinforced by, other existing and planned USAID/Jamaica projects.

This Project builds upon the existing marketing structure. It provides incentives for participants in the marketing system to improve their performance. The Project facilitates the role of the private sector in the marketing system. Even with highly conservative assumptions, major benefits to income, production and foreign exchange are expected. The Project is judged to be feasible, consistent with AID legislation, policy and Presidential and Congressional exhortations, as well as in accord with applicable statutory criteria.

F. Issues

1. One issue addressed in Project development was the question of the Project's impact on employment of market intermediaries, especially the higgler. Aside from the judgment that the overall benefits of the Project more than offset the possible unfavorable employment effects, other considerations indicated that the displacement issue was likely to be relatively minor. Any higgler displacement would be gradual, extended over several years. Moreover, the Project itself will provide employment opportunities and alternatives in the Subterminal Wholesale Distribution Markets and Assembly and Grading Stations. Finally, as the Jamaican economy recovers and resumes its growth, many of those who became market intermediaries because of the deteriorating economic situation during the last few years are likely to return to their previous activities.
2. The second major issue addressed was feasibility. This issue has many dimensions. Can the GOJ provide its required human and financial resources? Can the Ministry of Agriculture manage this Project along with other USAID, foreign and Ministry projects? Can the necessary institutional harmony and coordination be accomplished, given the number of different actors involved--e.g., Ministry of Local Government, Ministry of Works, Town Planning, Parish Councils, and Agricultural Marketing Corporation? Can USAID/Jamaica handle this Project?

As the paper shows, the human resource problem, although difficult, is manageable. The GOJ, namely the Ministry of Finance as well as the Ministry of Agriculture, has worked up an organization and manpower plan for the Ministry of Agriculture which accommodates the additional personnel and financial requirements. The priority assigned to this Project by the GOJ lends support to our conviction that these contributions will be made. In addition, counterpart generated by USAID PL-480 programs will facilitate the allocation of Jamaican funds, whose first, mutually agreed upon criterion for use is to support U.S. projects.

The Ministry of Agriculture will have a full plate with this and other projects. However, other on-going projects are designed to strengthen the Ministry and will directly help in carrying out the proposed Agricultural Marketing Project. Moreover, some of the required functions are already a part of the Ministry's responsibilities and will not represent new burdens.

During the Project development stage, a great deal of inter-agency coordination has already occurred. The Ministry of Agriculture has taken the coordination problem very seriously, and its progress and success in developing consensus, understanding and support have been impressive.

With this Project, there remains one more component of USAID's approach to the agriculture sector to be developed--research and extension. At that point, the Agriculture and Rural Development Office will devote all of its attention for some time to implementation. The Office is adequately staffed and with the support of other USAID personnel (Capital Resources, Controller, etc.) will be able to manage its challenging portfolio, including this Project. The continued presence of the USAID-financed Marketing Advisor to the Ministry of Agriculture, one of the people most involved in the development of the GOJ's marketing policy and strategy, and a major contributor to this Project Paper, adds to the Mission's confidence that this Project can be successfully carried out.

G. Project Development Committee

Agricultural/Rural Development Office

Patrick Peterson
Kenneth Ellis
Wilbert Wilson
Fitz Bartley

Capital Development Office

Paul Wenger

Economic Advisors Office

Clark Joel

Controllers Office

Michael Bradley

Technical Assistance

Thomas Bennett
USAID/GOJ Marketing Advisor
Thomas Fallon
USAID/Honduras/CONT
Brent Gatch
AID/W, LAC/DR
Carleen Gardner
Sociologist
Theodore Malyn
Marketing Specialist
Paul Morris
USDA/PASA
Tim O'Conner
U.S. Peace Corps

Ministry of Agriculture

Derrick Stone
Permanent Secretary
Fred Zenny - Director
Production Extension Department
Ruddi Wallace
Production Extension Department
Canute McLean
Production Extension Department
Conrad Smikle
Production Extension Department

Ministry of the Public Works

Errol Alberger
Engineer

Reviewed by:

Donor Lion
DIR/AID/Jamaica
Henry Johnson
ADIR/Acting/AID/Jamaica

II. PROJECT DESCRIPTION

A. Background

1. Overview

Jamaica is centrally located in the Caribbean Sea on direct trade routes between North and South America and between Europe and Panama. Because of its location, Jamaica has, historically, been an important trans-shipment point.

The island is divided into 14 Parishes, each with its own council. These councils are supported by the Ministry of Local Government. The Ministry of Agriculture services rural areas through four regional offices. Agricultural extension and other programs are administered by Regional Directors responsible to the Ministry headquartered in Kingston.

Traditional agricultural export crops include sugar, coconut, banana, coffee, citrus, tobacco, pimento, and cocoa, which are generally served by a marketing board. Domestic food crops include fruits, vegetables, root crops, and pulses. Food crops are generally produced by thousands of farmers cultivating hilly land of one to ten acres. Export crops are characterized by larger operations. The exceptions are cocoa, bananas, coffee, and pimento, where a large number of small farmers produce a significant percentage of total production.

The population of Jamaica is 2.1 million with about 45 percent dwelling in urban areas. Agriculture accounts for about 30 percent of the total labor force. In 1976, agricultural production per rural inhabitant was \$164 and in 1978, it was \$129.¹ Since 1971, food imports have risen from \$51 per capita to \$81.

While Jamaica has good potential to reduce reliance on imported foods, performance of the agricultural sector has been disappointing in recent years. Idle land has increased to the point that one-third of potentially productive agricultural land is not under cultivation. Rural to urban migration has been growing.

Small farmers have only limited exposure to and make little use of marketing information in deciding which crops to plant. Many small farmers cultivate several plots which are some distance apart, making it more difficult to sell and transport their produce. They have access to few factor inputs and are, in general, inflexible in their cropping patterns. They are not cognizant of market requirements, having as their major point of contact small merchants, locally referred to as "higglers."

¹Unless otherwise stated, all dollar amounts are in US\$. The 1979 exchange rate is US\$1 = J\$1.77875.

The farmer may sell to a higgler at his farmgate or take it himself to the Agricultural Marketing Corporation, a greengrocer, or a supermarket. However, in either case, the frequency of collection is inadequate and the volume that can be handled is minimal. In the case of the higgler on which the majority of the farmers depend, the volume that higgler can handle is generally inflexible, resulting often in a large part of the farmers' production spoiling in the field.

2. Agricultural and Food Marketing System in Jamaica

a. Definitions

Following are definitions of words and phrases used in this paper:

Marketing. All functions that are required to be performed in getting agricultural and food products from the farm to the consumer. The definition can also be applied to the functions required to get factor inputs from the supply origin to the farm.

Marketing Channel. The route a commodity or product takes from the farm through the various intermediaries to the consumer.

Agricultural and Food Marketing System. Collectively, all of the various marketing channels, the intermediaries performing the various functions, the functions or services performed, the suppliers of factor inputs and the various institutions and facilities providing regulation, information and credit that influence or affect the distribution of agricultural and food products.

A Market. A sphere within which a buyer and seller meet to mutually agree on a price for the transfer of title of goods or services.

Development of Markets. The acquisition of new markets and the expansion of existing markets for commodities or products and the development of new products or finding new uses for existing products.

Marketing Development. Upgrading the capability of farmers and intermediaries in the marketing system to perform their functions better.

Market Structure. The various intermediaries in the marketing system, including the number and types of intermediaries, the types and size of organizations.

Market Intermediaries. Those individuals or firms that perform functions of buying, selling, and moving agricultural commodities and products from the farm to the consumer. Included are wholesalers, retailers, truckers, AMC, and higgler.

Terminal Wholesale Distribution Market. The major focal point of a country to which commodities flow from a tributary supply area and from which assembled and concentrated supplies move out to distributors. In Jamaica, the Coronation Market is the Terminal Wholesale Distribution Market.

Subterminal Wholesale Distribution Market. The major focal point of a region to which commodities flow from a tributary supply area or other subterminal or terminal market, and from which assembled and concentrated supplies not needed for local use move out to a tributary area of distribution.

Assembly and Grading Station. A facility located within the area of production where agricultural commodities can be assembled from many small producers, and concentrated into a volume large enough to permit the grading and packing into several identifiable grades, the selling of the commodities in volume by grade and the shipment of commodities in volume and in a packed form which will reduce post harvest loss and enhance efficiencies of transport.

An effective marketing system is a two-way communications channel between consumer and producer via intermediaries. When properly functioning, with efficient intermediaries, the system assists in determining what to produce, at what quality, where and when needed, and at what price. Marketing is an assembly, concentration and dispersion process (See Figure 1).

b. Jamaica's Current Marketing System

Agricultural marketing in Jamaica is being affected by rural to urban migration. The urban population, now 45 percent of total population, will soon exceed 50 percent. As a result, agricultural production is becoming more commercially oriented with an increasing volume of food crops being grown to meet urban demands. However, temporary shortages of some commodities still occur in some areas of the island at the same time as production gluts of the same commodities occur in other areas.

As an example in 1978 the spread between the prices of onions at the farmgate and at retail was as follows:

| | <u>Farmgate Price</u> | <u>Consumer Price</u> | |
|----------------|-----------------------|-----------------------|-----------------|
| | | <u>Kingston</u> | <u>Linstead</u> |
| First Quarter | \$0.74/lb. | N.A. | \$1.53 |
| Second Quarter | 0.37/lb. | N.A. | 1.52 |
| Third Quarter | 1.17/lb. | \$2.19 | 2.36 |
| Fourth Quarter | 1.19/lb. | 2.85 | 3.80 |

Figure 1

Marketing System Illustrating Role of Producers, Assembly and Grading Stations, Wholesalers, Subterminal Wholesale Distribution Markets and Retailers in Enhancing Assembly, Concentration and Dispersion Roles

Producers
(Critical Functions)

Planting correct varieties
Producing High quality crops
Harvesting
Handling
Transportation

Marketing Groups
(Critical Functions)

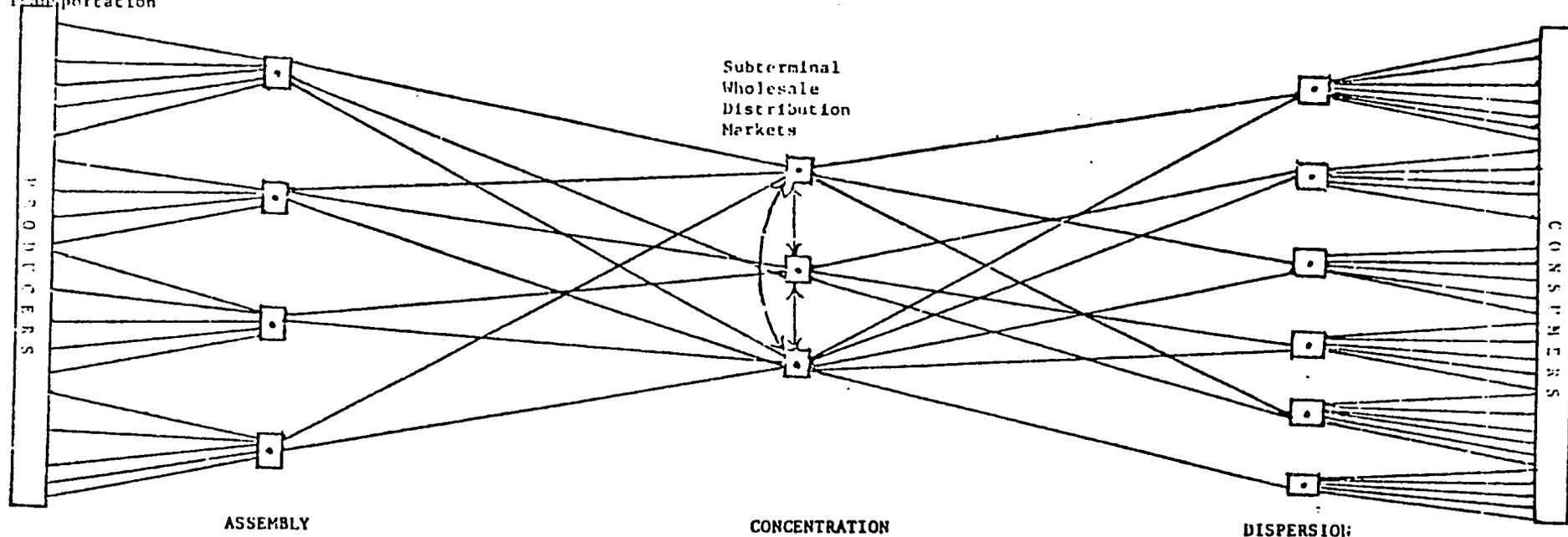
Grading
Packing
Handling
Storage
Transportation

Wholesalers
(Critical Functions)

Volume Buying
Concentration
Distribution
Handling
Transportation
Storing

Retailers
(Critical Functions)

Handling
Transportation
Packaging
Selling



Geographical differences in 1979 average first quarter prices for onions were as follows:

- J\$1.88/lb. - Black River Market
- J\$2.70/lb. - Coronation Market in Kingston
- J\$3.33/lb. - Spanish Town Market
- J\$3.82/lb. - Highgate Market

These price spreads between farmer and consumer and between one region and another were caused almost solely by distribution inadequacies and by lack of marketing information.

Internal distribution of an estimated 500,000 tons of domestic food products and a large volume of imported products is carried out annually by a large number of intermediaries who collectively make up the agricultural and food marketing system. These intermediaries include small wholesalers and retailers, large trucker/wholesalers, supermarkets, green-grocers, and the AMC.

Small retail and wholesale intermediaries numbered 14,000 in 1976 and perhaps number 20,000 today. They operate in 99 Parish markets and numerous curbside locations. As a group, they distribute over 80 percent of total food production. The other 20 percent is distributed by a small number of large trucker/wholesalers, supermarkets, greengrocers, and the AMC.

The Parish markets are located throughout the island and are generally out-dated, dilapidated and unsanitary. Many are retail outlets while many others serve as both retail and wholesale markets. The Coronation Market in Kingston can be termed the terminal or central distribution market for the entire country. In spite of its dilapidated and congested condition, about 50 percent of marketed agricultural and food products move through this market to other markets and consumers.

Due to the highly atomistic nature of the marketing system, insufficient facilities and low level of knowledge concerning post harvest handling and technology, post harvest loss is high. An estimate by FAO in 1976 placed post harvest loss at 25 percent for fruits, vegetables and other perishables. The FAO study, however, did not take into account other factors including the volume of product that is discarded or rots at the farm level because there is no buyer present on the day the crop must be harvested or because the buyer present can only handle a portion of the available crop. Including these factors, post harvest losses are estimated at 30 to 40 percent.

1) "Higglers"

The traditional marketing system in Jamaica is often referred to as "the higgler system." This system evolved during the 17th Century with the pre-emancipation Sunday markets, where slaves sold provisions from small plots allocated to them to encourage self-sufficiency in order to reduce the operating costs of the plantation. Regular markets were first established in 1670, and legal right to sell produce was granted to slaves in 1711. After 1838, when restriction of movement was lifted and free villages established, the number of markets increased and formed the catalyst for growth of interior market towns, characteristic of the traditional system.

The group referred to as higglers perform both retailing and wholesaling functions. The number of higglers fluctuates with the economic condition of the country. With increases in unemployment, the number of higglers rose. It is estimated that 22 percent of the higglers have started just within the last four years. Many higglers operate part time, depending upon the season of the year and the availability of commodities and products. The average net income of all higglers is J\$21 per week. Some of the larger wholesale truckers, however, reportedly earn over J\$30,000 per year.

Higglers fall into one or more of the following categories:

- Direct farm to consumer retailing - A farmer, farmer's wife, son or daughter may take their own produce or the produce of a neighbor, and sell it directly to consumers.
- Peddler - A man or woman not directly engaged in farming may buy produce from farmers and sell directly to consumers.
- Wholesalers - Individuals may buy from farmers and sell to others who in turn sell to consumers.
- Retailers - Individuals may buy from wholesalers and sell directly to consumers either in a Parish market, on the roadside, or in an elaborate shop (greengrocer, supermarket, etc.).
- Wholesale/retail - Individuals may buy from producers and sell to consumers directly and to other individuals who in turn sell to consumers.

2) Agricultural Marketing Corporation (AMC)

The AMC was established by the Government in 1963 to bring order and efficiency to the marketing system, to operate as a commercial venture and to provide a mechanism for price and market guarantees to producers. The Ministry of Industry and Commerce is responsible for AMC operations. AMC has eight regional depots or branches which serve as assembly points for a wide range of commodities. The Kingston depot is the headquarters and central distribution point. Until recently, AMC operated 207 buying stations throughout the country. As part of its price stabilization role, a list of

115 products with guaranteed prices was posted periodically and AMC would guarantee a market at the price posted. AMC operates 19 greengroceries, 43 basic shops, and 75 mobile routes. The basic shops and mobile routes are oriented toward providing low income families with low cost food.

The role of AMC is now under review, and its mode of operation is expected to change. A 1978 report for USAID/GOJ by Francis A. Kutish, "Assessment of Agricultural Marketing in Jamaica with Special Reference to Small Farmers in Portland Parish" described the weaknesses of AMC as follows:

"Its functions developed generally in three broad areas: purchasing of commodities, distribution of commodities, and providing ancillary market services. As a consequence, the AMC has found itself with duties relating to farm price support, holding down general consumer food costs, and welfare activities for low-income consumers. Often these functions conflict. In an effort to rationalize these conflicts, the blame has been put on the higgler system for taking too wide a margin.

"Through its retailing efforts, AMC hoped that sufficient competition would be injected to hold down consumer prices by cutting the higgler retailing margins. But the AMC has never controlled enough of the retail business to be an effective price setter. Although approximately 20 percent of the domestic food output has been handled by AMC, much of this is supplied to institutions or wholesaled to higglers, supermarkets, hotels, restaurants, wholesalers, or distributors.

"Although AMC has grade specifications for its purchases, they frequently are not closely adhered to. More training and closer supervision are needed for the buyers. Cooling and storage facilities at some of the branch stations are inadequate, and management of storage often falls short. Despite the weekly radio communication between all offices, the spatial distribution of products over the island frequently leaves much to be desired.

"All this, plus problems of excessive spoilage, waste, shrinkage, pilferage, and procurement of unsalable foodstuffs, result in the AMC operating in the red. The 1976 FAO/IDB study of agricultural marketing found AMC suffering from problems of shortage of management, poor sites, inadequate facilities and conflicting political objectives--and that in general AMC was overextended both in crop coverage and in management. The April 1978, IICA study, 'Brief Overall Diagnosis of Hillside Farming in Jamaica, concluded that one of the AMC mistakes is to compete and try to put the higglers out of business. It found AMC to be a very large organization, and because of its complexity, faces many problems such as bureaucratic inefficiency, labor unrest, heavy financial losses, poor distribution, high operating costs, and lack of proper research into market intelligence.

"The dual charge to AMC to serve as a direction setter and a price supporter on the production side and a means of holding down food costs on the consumer side results all too often in policy conflicts--with the result that the agency fails to accomplish either."

3) Supermarkets

There are a number of supermarkets of various sizes handling a varied product mix operating throughout Jamaica. Most are found in shopping centers or higher income areas of the larger urban centers. Fresh food crops sales are estimated in the Francis A. Kutish report at 5 to 10 percent of total weekly sales and meats at 28 to 30 percent. The major deterrent to an expansion in the volume of food crops sold through supermarkets is the lack of a continuing supply and volume of high quality graded products.

4) Hotel, Restaurant and Institutional Trade

The hotel, restaurant and institutional trade is a very significant portion of the total food market. The tourist trade is the second largest source of foreign exchange, and the demands of hotels and restaurants are very specific as to quality, volume, and continuity of supply. Currently, the trade obtains most of its requirements through imports although in many cases the same products that are imported are produced in Jamaica. The problem for the trade in purchasing local products is that there are no entities in Jamaica with the capacity to assemble the volume of the premium quality products required to maintain a continuous supply. The present marketing system does not provide for volume differentiation of products and monetary rewards for quality.

5) Transportation

Although the road system between major towns and cities is fairly good, roads in many producing areas are very poor or practically non-existent. Availability of trucks in major producing areas appears to be adequate although in less developed production areas there is a problem with the availability of any kind of vehicle. In these areas, produce is carried by donkey or on the backs of farmers or higglers from the farm to a road where a truck, bus, taxi or other vehicle can pick it up. The small volume of produce to be picked up under this system is highly inefficient and costly.

There are few refrigerated trucks hauling fresh produce. The bulk of the produce is hauled on open trucks of various sizes. Many higglers ride buses with their produce piled on a carrier rack on the roof of the bus. The manner of packing and handling of produce results in a high incidence of bruising. In general, little care is taken and little appreciation is given to the perishable nature of fresh produce in the transportation of food crops.

6) Cooperatives

Although production and marketing of the traditional crops (mostly for processing and/or export) is cooperatively organized, comparable organization in the domestic food crops is practically non-existent. Food crop producers in general do not perform the functions of grading and packing. The little grading that is done is undertaken at the roadside, where small traders pick up produce, or at the market. The use of grades and standards of quality is neither formalized nor standardized. A concept of "fair average quality" is the accepted norm, both for purchasing and as the basis of Government price collection and reporting.

7) Storage

Storage facilities are limited. Cold storage capacity is almost entirely within the AMC structure and totals between 250 and 300 tons. Cold storages are located at AMC's main depot in Kingston and in some of their other area depots. They are generally in poor condition and poorly operated with losses exceeding 30 percent. Cold storage capacity is insignificant, representing only 0.3 percent of marketed product. Dry storage operated by AMC totals 480,000 cubic feet and is utilized for short-term storage of peanuts, yams, beans, etc. If utilized properly, it would be significant, but the facilities are very poor and outdated. There is a need for both cold and common storage for limited periods for commodities such as potatoes, onions, citrus and similar crops. Storage is required mainly in the producing areas and in regional centers of distribution. Freezer storage on the island is estimated at 1.9 million cubic feet concentrated in Kingston and Montego Bay. This is mainly for frozen processed products.

8) Processing

There are about 125 agricultural processing plants in Jamaica, but they are not being utilized to capacity. Many were established by the Government to utilize "surplus" crops. Because of underutilization, the Government has now invoked a moratorium on construction of new processing facilities. Processing suffers, basically, from high priced inputs, unavailability of equipment and parts, a general lack of technical know-how and the lack of an agricultural base producing specifically for processing.

9) Jamaica Agricultural Society (JAS)

The JAS, largest and oldest farm organization in the country, is involved in several areas of marketing. The organization has branches in various localities of the country. Many of these branches have farm supply stores that, although inadequately financed and supplied, attempt to provide farmers with factor inputs. The JAS, in cooperation with AMC,

has been involved in a project to take over the former AMC buying stations and provide a collection function to AMC. Currently, the project is working only in one locality. The JAS is farmer-based and national in scope but lacks financing, personnel and expertise.

3. Problems and Constraints

The evolution of an atomistic market structure (many small intermediaries) servicing an atomistic production sector (many small producers) has resulted in an inefficient and inflexible marketing system. There are few market intermediaries capable of concentrating a large enough volume of a particular type, variety or quality of commodity to fulfill the demand that exists for "differentiated" products. There are no wholesale intermediaries (including AMC) or wholesale facilities capable of efficiently influencing the orderly movement of products from those areas where surpluses occur to deficit areas. At the production end, no one producing unit or entity is sufficiently large, or strategically located, to assemble a large enough volume of a particular commodity to permit proper sorting into various qualities (grading) and packing and shipping it to the areas where it is demanded.

Products frequently go from outlying parishes to Kingston and then back again. Marketing costs are conservatively estimated at 68 percent. This is extremely high considering the low quality of produce and the few services involved. Production has failed to expand as anticipated by the GOJ in spite of numerous programs and projects aimed at increasing production because the required market stimulus is not forthcoming. Specific problems have been identified as follows:

- (1) Small farmers have difficulties in finding buyers for their produce. A commonly heard complaint of small growers is that they cannot find anyone to buy their products. Or, if they can find a buyer, his price offer is so low that it isn't worthwhile to produce the product. Also, the volume that can be taken may only be a portion of the total volume produced.
- (2) Country higgler buyers pick up small quantities and mixed lots resulting in high assembly costs per unit. Higgler who go from gate to gate to buy produce from small growers must make several stops to get their purchases and travel a considerable distance to get any volume of produce. And, they wind up with a varied load of products.
- (3) Low volume handled by higgler requires high markups. The small quantities of food typically handled weekly by higgler require a larger markup in order for them to live.

- (4) Credit for retail higglers is lacking. The need to turn to non-institutional sources for credit and the large number of higglers seeking this credit makes it difficult for higglers to handle larger volumes.
- (5) Public markets are inadquate and inconvenient. Most of the public markets are old, lack adequate space and light, are unsanitary, and have inadequate storage facilities. There are not enough of them at conveniently located places in the urban areas to attract and serve the consumers.
- (6) Transportation is inadequate. Small growers or intermediaries living beyond the bounds of existing improved roads find travel to and from markets difficult. This increases costs, restricts access to market and increases damage to fragile products.
- (7) Retail prices fail to reflect consumer preferences. Farm production tends to follow a traditional planting pattern and does not respond quickly to changes in consumer demand.
- (8) Sharp differences in market prices exist among parish markets. Produce fails to move quickly between parishes in response to short supplies or gluts at these markets.
- (9) There are large amounts of physical wastage and spoilage. Losses of 30 to 40 percent of the value of the crop are estimated to result from spoilage and wastage.
- (10) Retail prices of fresh produce are "sticky." Higglers tend to maintain the retail prices of their deteriorating quality produce and then have to discard it as unfit, rather than reducing the price soon enough to sell it while the product is still salable.
- (11) Daily market intelligence is lacking. Neither buyers nor growers have adequate knowledge of current prices over the island. There are two newspapers which publish retail prices for a limited number of crops, but do not mention volume, quality of produce and demand. Monthly estimates of marketings are collected by the MOA, but are used internally only and neither published nor broadcast. The small grower has no knowledge on which to base his marketing decisions. The higglers are restricted in their market knowledge to what they can pick up by word-of-mouth.
- (12) Production planning information is lacking. The Government makes quarterly crop surveys, but no information is disseminated to growers. There is no projection of expected supplies, demand and income prospects for the different crops to provide the producer with economic intelligence to use in making his production decisions.

- (13) There is a failure to use readily acceptable grades and standards. Failure to develop and use grades and standards impedes trading of produce, for it means every lot must be inspected personally to establish grade and quality as a basis for price. This problem makes it very difficult to trade by telephone and increases the time needed to carry out the marketing process.
- (14) There are substantial seasonal gluts and shortages. Frequently it is a case of too much, followed by too little. Storage of seasonal surpluses for later use is inadequate, and there is lack of planned production to try to meet off-season demand. The result is inadequate producer outlets during seasonal gluts and dissatisfied consumers during shortages.
- (15) Nutritional needs and consumer demands are not sufficiently reflected in setting Government price supports. Too much emphasis is placed on cost of production as a basis for production policies. This is not necessarily a good indicator of production patterns which are in the best interests of the consumer.
- (16) Small growers employ excessively low levels of technology. This results in poor quality of products produced, and inadequate national volume of output of certain crops. It also contributes to low small farmer income.
- (17) Because of uncertainty, instability, or lack of confidence, growers large and small generate inadequate investment.
- (18) Supermarkets are unable to get a steady supply of acceptable quality of fresh produce. Customers cannot depend on them as a steady source of quality produce which in turn impedes the growth of supermarkets in selling fresh produce.
- (19) There is a lack of a well developed and structured wholesale distribution network. Jamaica is one of the few more highly developed Third World countries that does not have a prominent group of wholesale distributors. This can be attributed to a number of factors including a lack of wholesale facilities and a lack of adequate sources of credit.
- (20) Trained and experienced agricultural marketing personnel are lacking in the public and private sectors with the necessary grasp of post harvest technology and marketing techniques.
- (21) No institution exists specifically to assist those engaged in marketing agricultural and food products and to initiate required changes in the system.

Most of these problems can be synthesized into the following nine constraints and are addressed in this Project:

- (1) High Assembly Costs
- (2) High Wastage and Spoilage
- (3) Absence of Uniform Grades and Standards
- (4) High Marketing Margins (Retail and Wholesale)
- (5) Absence of Adequate Market Intelligence
- (6) Lack of Production Planning Based on Market Demand
- (7) Lack of Adequate Distribution
- (8) Lack of Wholesale Market Facilities
- (9) Lack of a Marketing Institution (Department or Division) within the Ministry of Agriculture

4. Project Rationale and Strategy

Marketing has been identified as one of the greatest stumbling blocks to increasing agricultural production in Jamaica. Under present conditions, the marketing system is unable to cope with larger volumes of product and does not relay the demands of consumers, reflected in price movements, back to producers. Moreover, post harvest losses in Jamaica are currently estimated at 30 to 40 percent. With a 40 percent loss, an increase in production of 66 percent would be required to offset the loss. This would be impossible within the life of the Project.

Greater benefit, therefore, can be achieved by investing in the marketing system and upgrading its efficiency rather than by concentrating solely on increasing production. Any increases achieved in production, without accompanying improvements in marketing, will only increase the rate of post harvest losses. With or without production expansion, marketing improvements can result in (a) a relatively large increase in the availability of agricultural and food products to the consumer, (b) increased income for the farmer and those engaged in the various functions of marketing, and (c) a range of benefits for consumers.

The GOJ has adopted a National Agricultural and Food Marketing Policy and Strategy (Annex F). The Policy and Strategy recognize that the present system, although inadequate, can be upgraded through the provision of assistance, extension, and training to intermediaries and producers to increase efficiency of operations and bring about more rapid technological change. MOA is given responsibility for marketing of agricultural and food products.

To effect changes and improvements in the marketing system requires an institution to undertake marketing development activities and marketing extension. The Marketing Division to be established in the MOA will fulfill that function.

To achieve efficient distribution of agricultural and food products, wholesale distribution facilities are required to permit assembly, concentration and distribution of quality products in volume. (See Figures 2 and 3.) The Subterminal Wholesale Distribution Markets to be constructed and established in four areas of the country will enhance orderly marketing and the efficient distribution of products. In addition, they will facilitate more adequate market regulation and monitoring, and the development, dissemination and utilization of market information.

The establishment of Assembly and Grading Stations will facilitate the assembly of commodities as near as possible to the farmgate into volumes large enough to sort into different grades and permit the volume shipment of these commodities by grade to the market or buyers where they are required. By distributing the various grades or qualities of commodities to those differentiated markets where a premium can be earned for the best quality (such as to the hotel and restaurant trade) and distributing the other grades at varying reduced prices in less discriminating markets, higher profits can accrue to the farmers.

5. Other Donor Assistance and Related Agricultural Sector Programs

The adoption by the GOJ of a National Agricultural and Food Marketing Policy and Strategy was a precondition established by both the Inter-American Development Bank (IDB) and USAID for funding of marketing projects. Over the past several months, discussions have been held with the GOJ and IDB to formulate measures to achieve the strategy objectives. The Agricultural Marketing Project is the second key element of an overall marketing development strategy. The first element, the reconstruction of Parish Retail Markets, is underway, funded by IBRD, and will be expanded under a project soon to be approved by IDB. The third element, the construction of a new Terminal Wholesale Distribution Market and the reconstruction of retail markets in the Kingston-St. Andrew area, is in the planning stage. Several donor agencies have expressed interest in funding this project which will likely be scheduled for 1982 or 1983.

The Project will be implemented in cooperation with other GOJ ministries and agencies. It will be complementary to, and in certain cases a prerequisite to, achieving goals and objectives for other GOJ and international donor agency-funded projects now in operation or soon to be implemented. These projects include the following:

(1) Inland Fisheries Project (USAID) (\$8.9 million)¹

The establishment of the Marketing Division, construction of subterminal markets and development of producer marketing organizations will enhance the benefits of this \$8.9 million project. Once the volume of freshwater fish reaches the level at which local markets near the producing area can no longer absorb the supply,

¹ Figures for this and all projects in this listing include GOJ contribution.

countrywide distribution will be a constraint requiring the concerted efforts of a Marketing Division and the facilities and intermediaries to assemble, concentrate and distribute.

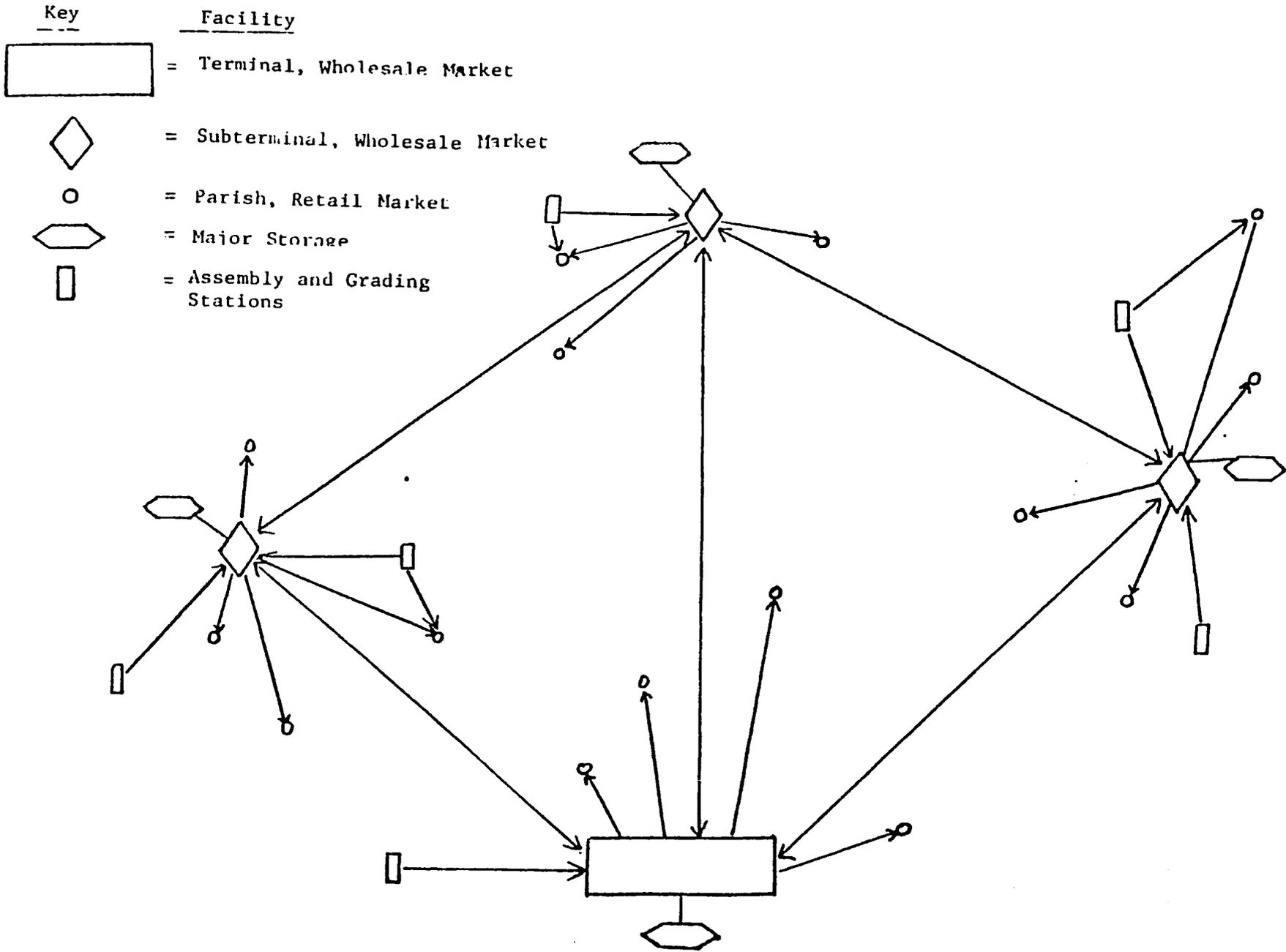
- (2) IBRD First Rural Development (\$15 million)
Nine parish markets in the Western Region of Jamaica are being reconstructed. These markets will benefit directly from implementation of this Agricultural Marketing Project and their long run prospects will be improved by an improved wholesale distribution network and by the marketing extension activities of the Marketing Division.
- (3) IDB Parish Market Reconstruction Project (\$10 million)
Under this project, 17 Parish retail markets (located throughout all regions except the western) will be reconstructed. Optimum use of these markets will depend upon this Agricultural Marketing Project.
- (4) Integrated Rural Development Project (USAID) (\$26 million)
The proposed Agricultural Marketing Project will be instrumental in initiating marketing programs for the 4,000 farmer families involved in this program.
- (5) Agricultural Planning Project (USAID) (\$6.6 million)
This project will upgrade the MOA's capability to collect and analyze data, manage the training of its personnel, and develop, interpret and analyze government policies as they affect agricultural and rural development. The Agricultural Marketing Project will utilize basic data developed by the Planning Project and in turn will provide it with an analysis of markets, situation and outlook analysis, and daily and periodic market news.
- (6) Self-Supporting Farmers Development Program (GOJ/IDB) (\$34 million)
This IDB-funded credit program is operated by the Jamaica Development Bank for farmers in the 5-25 acre category. Interest of 10 percent is charged with the repayment and moratorium depending upon the nature of the enterprise. Farmers must provide security for loans, preferably a registered title for the land on which the development is to be undertaken. There is no ceiling on the amount of a loan.
- (7) Agricultural Radio Project (USAID/GOJ/JBC) (\$0.5 million)
This project will build a radio transmitter in Mandeville and broadcast agricultural programs to the small farmers in the area. This will facilitate the dissemination of market reports and extension information developed by the Marketing Division.
- (8) National Planning Project (USAID/GOJ) (\$0.3 million)
The Agricultural Marketing Advisor funded under this project has assisted the MOA to develop a Marketing Strategy and Policy. The proposed Project is part of that strategy.

Two related (GOJ) agricultural sector programs that will benefit from the Project include Project Land Lease and Pioneer Farms. The Project will provide marketing expertise and assistance in developing marketing programs for farms established under these programs.

Other programs and activities that will be benefited by the Project as well as be beneficial to the Project include those encompassed by the Agricultural Credit Board, the Crop Lien Program, the Jamaica Industrial Development Corporation, and the Jamaica Export Trading Corporation.

Figure 2

Illustration of Proposed Marketing Distribution System



B. Project Components

1. Goal and Purpose

The goal of the Project is to improve the living standards of farmers, consumers and market intermediaries. This will be achieved by reducing post harvest losses, increasing producers' share of final price for the product, cutting intermediaries' costs, and providing larger quantities of better quality food to consumers.

The purpose of the Project is to improve the efficiency of the marketing system. This will be undertaken in two phases.

To accomplish the goal and purpose, the Project provides for:

- Phase I - the establishment of a Marketing Division in the Ministry of Agriculture;
- Phase II a - the construction of four Subterminal Wholesale Distribution Markets; and,
- b - the establishment and construction of 25 Assembly and Grading Stations in producing areas.

Phase I

2. Marketing Division

AID - Loan \$4,700,000

GOJ - \$3,426,000

A Marketing Division in the Ministry of Agriculture will be established and strengthened through technical assistance, training, commodity support, and additional personnel so that it will have the capability to undertake the following activities:

Marketing Development - Assist individuals, firms and government institutions involved in the agricultural marketing system to perform their marketing functions more efficiently. Marketing development includes:

- a) Post-Harvest Technology - assisting with commodity and food handling techniques, storage, processing, grading, packing, and transportation;
- b) Producer Support - helping producers in organizing to market their produce, to improve their harvesting, handling, grading, packing, and transportation methods, to improve the assembling of their products into larger volumes of identifiable grades, and to distribute factor inputs; and,

- c) Product Distribution - assisting wholesalers and retailers (including AMC) in the agricultural marketing system to perform their roles better: 1) to assist them in improving their organization; 2) to upgrade their marketing techniques; 3) to assist them in obtaining financing; 4) to assist them in setting up record keeping systems; 5) to assist them in expanding their operations to a more efficient level; and, 6) to plan and upgrade marketing facilities and market infrastructure.

Development of Markets - Assist in the acquisition of new markets and the expansion of existing markets, either domestic or export, and assist in developing new products and crops or finding new uses for existing ones.

Market Information - Provide market analysis, supply and demand analysis, crop forecasts, periodic situation and outlook reports, market monitoring of prices, volume and quality, storage and processor stocks, domestic market trends, international supply and demand, imports, exports, export trends and the dissemination of timely reports, publications and news releases.

Market Research - Perform research on commodity production costs, marketing costs and profit margins at each marketing stage.

Marketing Training and Extension - Upgrade the level of marketing awareness of producers, market intermediaries, government employees engaged in servicing agriculture, and individuals, firms or government institutions performing any of the functions of marketing.

Quality Assurance - Develop and enforce grades and quality standards for the domestic and export markets. The regulation of marketing practices and compliance with grades and standards will be enforced by trained inspectors.

a, Technical Assistance

The level, types and timing of technical assistance are based upon the need to fill the marketing expertise gap in the MOA in the short run while training the Marketing Division to be self-sustaining by the end of the Project. A total of 32.5 person-years of technical assistance will be required for these purposes at a cost of \$4 million.

The technical assistance to be provided includes the following (See Annex G for job descriptions and Figure 4 for the proposed technical assistance schedule):

a) Long-term technical advisors (29.5 person-years)

- Team Leader
- Horticultural Marketing Specialist
- Livestock and Animal Products Marketing Specialist
- Market Information Specialist
- Market Training Specialist
- Inspection/Quality Assurance Specialist
- Market Management Specialist

b) Short-term consultants as required (3 person-years)

- Storage Specialist
- Processing Specialist
- Grading and Packing Systems Specialist
- Architect/Engineer
- Wholesale Distribution Specialist
- Export Marketing Specialist
- Market Administration/Institutional Development Specialists

Commodity areas requiring technical assistance include fruit, vegetables, flowers and ornamentals, livestock, dairy and fish. In addition, technical assistance is required in areas of processing and in producer organization. Recognizing the limitation in the number of advisors that could be provided, it was deemed advisable to provide a Livestock and Animal Products Marketing Specialist with some knowledge of the principles of fish marketing and experience in producer organization and in aspects of processing. The Horticultural Marketing Specialist would have knowledge of marketing fruits, vegetables, flowers and ornamentals, in various aspects of processing, in the operation of grading and packing plants and in producer organization. The commodity advisors will be required throughout the full duration of the Project.

The Marketing Information Specialist will be required to assist with the marketing information/intelligence program of the Division. His/her services are required as soon as possible after initiation of the Project. It is believed that three years will be sufficient for this advisor to help establish a satisfactory marketing information program as there is already a base upon which to work. The same is true for the Quality Assurance Specialist. There is now a unit responsible for inspection of fresh produce for export. Utilizing the existing competence, four years should be sufficient to develop grades and standards and a comprehensive quality control/inspection program in the Division. A Marketing Training Specialist is needed to assist in initiating and carrying out marketing training programs. Because of the dearth of trained marketing people, this specialist will be required throughout the duration of the Project.

Figure 4

Technical Assistance Scheduling

| Area of Assistance | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Person Years |
|---|--------|--------|--------|--------|--------|-----------------|
| <u>Long Term</u> | | | | | | |
| Team Leader | | | | | | 5 |
| Horticulture Marketing Specialist | | | | | | 5 |
| Livestock & Animal Products Marketing Specialist | | | | | | 5 |
| Marketing Information Specialist | | | | | | 3 |
| Inspection/Quality Assurance Specialist | | | | | | 4 |
| Marketing Training Specialist | | | | | | 5 |
| Market Management Specialist | | | | | | 2½ |
| Subtotal (person years) | | | | | | 29½ |
| <u>Short Term</u> | | | | | | |
| Storage Specialist | — | — | — | — | — | 6 |
| Processing Specialist | | — | | — | | 3 |
| Wholesale Distribution Specialist | — | | | — | | 3 |
| Export Marketing Specialist | | — | — | | | 4 |
| Grading & Packing Systems Specialist | | — | — | | | 2 |
| Architect - Wholesale Markets & Producer Markets | — | — | — | — | — | 6 |
| Miscellaneous as Required | — | — | — | — | | 12 |
| Subtotal (person years) | | | | | | 3 |
| Total (person years) | | | | | | 32½ |

A Market Management Specialist is required to assist the MOA, other related ministries and market intermediaries in the operation and management of the Wholesale distribution system. The full time services of the advisor will not be required until midway in the Project when the first Subterminal Wholesale Distribution Market is nearing completion.

In addition to the long term advisors, short-term consultants will be required from time to time in special technical areas such as: storage, processing, wholesale distribution, export marketing, grading and packing systems, mass media communications, architects, extension techniques, marketing administration and institutional development.

Because of the complexity and broad scope of work to be undertaken, a Team Leader will be required to assist the Director of the Marketing Division in coordinating the technical assistance program. Under the current USAID National Planning Project, a Marketing Advisor is being provided through October 1979. The advisor will be available to assist with start-up and initial implementation of this Agricultural Marketing Project. The GOJ has also indicated its intention to request an extension of this same advisor to fill the position of Team Leader.

b. Training

There is a dearth of people in Jamaica trained and experienced in the field of agricultural and food marketing in either the public or private sector. Training in various aspects of marketing is a prerequisite to achieving improvements in the marketing system. Training for the three elements of the Project will be centered in the Marketing Division, and will be undertaken in cooperation with the Training Division of the MOA.

Training will be undertaken at two levels. Level one is the training of Division staff. Level two is the training of individuals involved in the Subterminal Wholesale Distribution Markets and Assembly and Grading Stations and other participants in the marketing system. Training at level two will be undertaken by Division staff and technical advisors in cooperation with the Training Division of the MOA.

Training will consist of 20 person-years of long-term external training (10 persons undertaking a two-year master's degree or equivalent program), 5 person-years of short-term external training (20 persons undertaking three-month training programs), and 34.6 person-years of short-term in-country training (600 persons undertaking three-week in-country courses). A total of 59.6 person-years of training will be provided, affording training in various aspects of marketing to 630 people. The long-term and short-term external training will be financed through USAID funds and the short-term internal training through GOJ funding. Prior to the participant trainees' departure from Jamaica, the GOJ will implement procedures for ensuring that the participants will return to their posts for a period of time not less than twice the length of time spent in training. (See Table 2 and Figure 5.)

Table 2

Training Programs by Type of Training, Subject Matter and Number of Participants

| Subject | Type of Training | | |
|----------------------------------|--|--|---|
| | Long-Term (External) (2 Years Each) | Short-term (External) (3 Months Each) | Short-Term (In-Country) (3 Weeks Each) |
| General Marketing | 1 | | 100 |
| Exporting | | 1 | 20 |
| Grading & Packing | | 3 | 60 |
| Market Research | 1 | 1 | 20 |
| Commodity Marketing | 2 | | 20 |
| Market Information/ Analysis | 1 | 2 | 20 |
| Packaging/Transportation | 1 | | 20 |
| Storage Operation | | 3 | 20 |
| Market Management | 1 | | 20 |
| Processing - Logistics | 1 | 1 | 20 |
| Retailing & Management | | 1 | 60 |
| Wholesaling & Management | | 4 | 60 |
| Quality Assurance/ Inspection | | 2 | 20 |
| Market Regulations | | 2 | 20 |
| Market Monitoring | | | 20 |
| Harvesting & Handling | | | 100 |
| Market Structure | 2 | | |
| | <u>10</u> | <u>20</u> | <u>600</u> |

Figure 5

Marketing Project Training Scheduling

| Activity | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|--------------|--------------|--------------|--------------|--------------|
| <u>Master's or Equivalent</u> | | | | | |
| First Program (3 degrees) | | | | | |
| Second Program (4 degrees) | | | | | |
| Third Program (3 degrees) | | | | | |
| <u>Short Term - External</u> | | | | | |
| 20 persons to be trained at 3 months/person | (2) | (5) | (8) | (4) | (1) |
| <u>Short Term - In-Country</u> | | | | | |
| 20 persons per 3-week course (6 per year) | <u>(120)</u> | <u>(120)</u> | <u>(120)</u> | <u>(120)</u> | <u>(120)</u> |

Master's or Equivalent Training

Ten candidates will be selected from among MOA staff to be assigned to the Marketing Division and/or from new staff recruited for the Division. During the first year of the Project, three persons will be sent to a U.S. university for two years of training in special areas of marketing. At the beginning of year two, four more persons will be sent, and at mid-year of year two, three more persons will be sent. The first three will complete training and return to take up duties in the Division in the middle of the third year of the Project.

Short-Term Training - External

Persons selected will receive three months of training at various institutions, organizations or firms in countries other than Jamaica. Trainees will receive either practical experience or training in a specialized field in a training program. Two persons will receive training in the first year, five in the second, eight in the third, four in the fourth, and one in the last year of the Project. Short-term external training will concentrate mostly on staff of the Marketing Division and key staff of the Subterminal Wholesale Distribution Markets.

Short-Term Training - In-Country

Short-term in-country training will be financed by the GOJ and will be undertaken in cooperation with the Training Division of the MOA. The Training Division will provide facilities and assist in scheduling the courses. Training will be conducted by the Marketing Training Specialist and other technical advisors and by key staff of the Marketing Division.

Training courses will be three weeks in duration with 20 persons in each class. Six courses will be given each year, approximately one every other month and will be conducted in the MOA training facilities. A total of 120 persons will be trained per year with 600 trained during the course of the Project.

In addition, on-the-job training will be given during the course of establishing the Assembly and Grading Stations and the Subterminal Wholesale Distribution Markets. This training will be undertaken by technical advisors and Marketing Division staff. The first two Assembly and Grading Stations established the first year will serve as on-the-job training facilities for both Marketing Division staff and members of the rural community.

The Jamaica School of Agriculture (JSA) is the principal educational institution in Jamaica providing formal training in agricultural subjects. Some dialogue has already been held with JSA with regard to the possibilities for upgrading the marketing curriculum. Further discussions will be held on the possibility of technical advisors and Marketing Division staff teaching courses in specialized areas of marketing at JSA.

c. Commodity Support

Transportation will be a key factor in successful implementation of the Project. The Ministry has no vehicles for new projects, and staff immobility is already a serious problem.

A total of 11 utility vehicles will be financed for use by the Marketing Division. Two vehicles are required for each of the three branches of the Division to carry out their programs. One vehicle is required for administrative purposes, and one vehicle is required in each of the four districts. Other commodities to be provided include miscellaneous equipment and supplies required for training programs, research and general Division activities. These include calculators, audio-visual equipment and equipment for quality control and inspection.

Scheduling for the procurement of these commodities will be as shown in Figure 6.

Figure 6
Commodity Scheduling

| Marketing Division | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|--------|--------|--------|--------|--------|
| Ordering & Delivery of 5 Utility Vehicles | (5) | | | | |
| Ordering & Delivery of 6 Utility Vehicles | | (6) | | | |
| Miscellaneous Equipment (Calculators, films, etc.) | | | | | |

d. Personnel

The Marketing Division has been structured to meet the minimal requirements of providing the various activities and functions that must be performed to upgrade the Agricultural and Food Marketing System. The structure of the Division is based upon the experience of similar divisions in other commonwealth countries, both developing and developed, and adapted to conditions existing in Jamaica. The Division will consist of three branches, and eight units, each with a specific task, but each having complementary interactions with other units. The number and composition of staff to be provided are considered the minimum necessary to provide the broad spectrum of services required (Table 3 and Figure 7).

The professional marketing staff of the Division will total 55 while support staff will total 41. There are currently 25 positions in the MOA which have been identified as marketing related, and these will be transferred to the Division. The remaining 71 positions will be recruited during the first two years of the Project.

The Director of the Division will be the Project Manager. The Director/Project Manager, with the assistance of the technical advisors, will be responsible for implementing the Project and establishing the Division.

In addition to the Director/Project Manager, the Project staff will consist of the following:

Assistant Directors (3)

Three Assistant Directors are required for the three branches of the Division.

Unit Heads/Marketing Specialists (7)

Seven Unit Heads are required to develop programs and oversee the specific undertakings of their units.

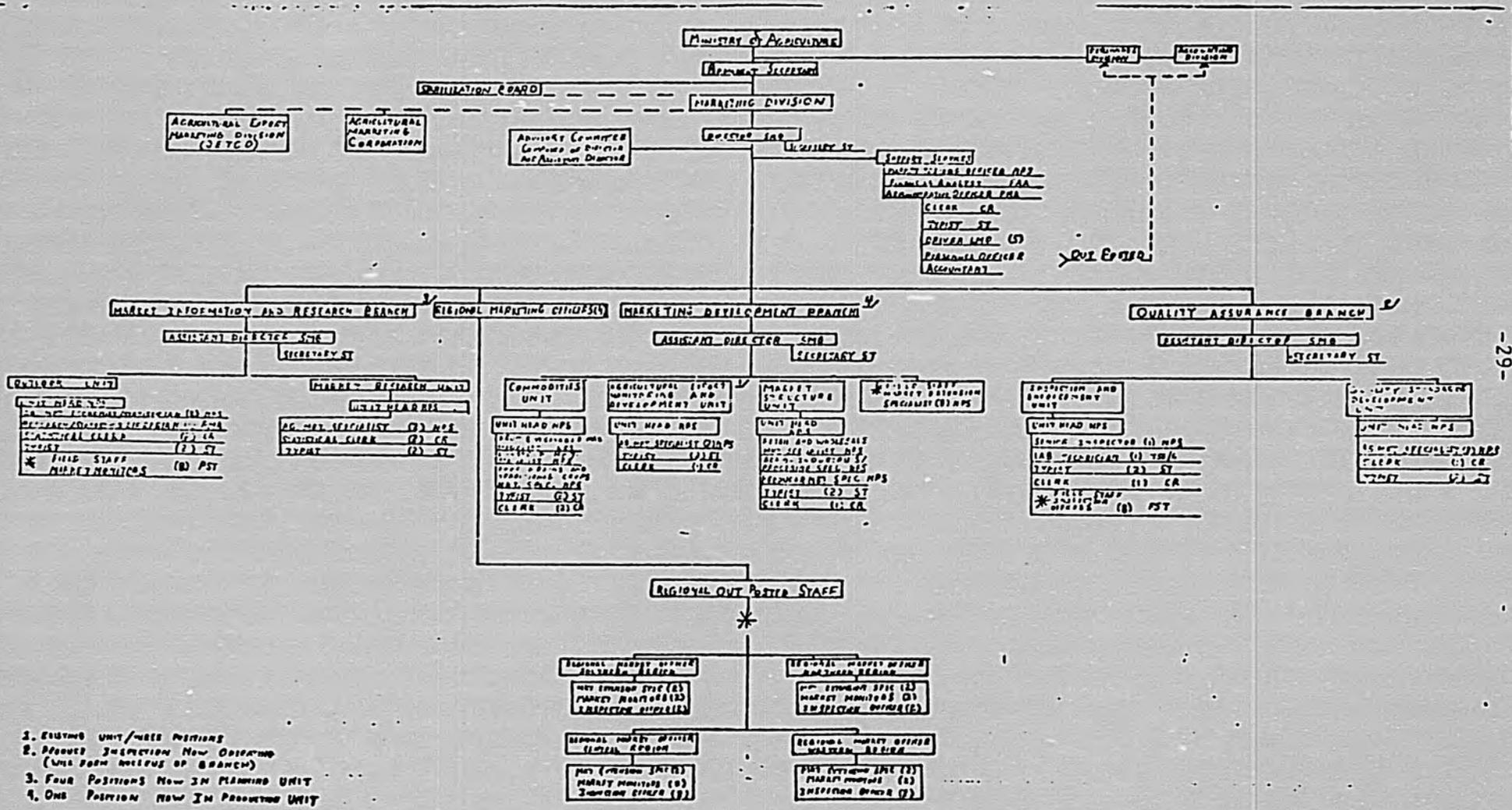
Agricultural Marketing Specialists (16)

Agricultural Marketing Specialists with expert knowledge of particular commodity or functional areas are required to carry out the activities of each of the Units. They will be the core of the Division. The commodity and functional specialists will serve as resource personnel to the various subprojects and activities while the other specialists will be involved in specific areas providing continuing information and services. These 16 specialists include the following:

- 2 Outlook Specialists
- 2 Marketing Research Specialists
- 1 Fruit and Vegetable Marketing Specialist
- 1 Livestock and Animal Products Marketing Specialist
- 1 Food Grains and Traditional Crops Marketing Specialist
- 2 Agricultural Export Marketing Specialists

Figure 7

Organization Chart of Proposed Marketing Division



- EXISTING UNIT/NEE POSITIONS
- PRODUCT INSPECTION NOW OPERATING (WILL FORM NUCLEUS OF BRANCH)
- FOUR POSITIONS NOW IN PLANNING UNIT
- ONE POSITION NOW IN PRODUCTION UNIT

Table 3

Marketing Division Staffing Requirements and Costs ^{1/}

(\$000)

| Grade | Position | Total Number | Year 1 | | Year 2 | | Year 3 | Year 4 | Year 5 | Total |
|-------|--|--------------|----------------|----------------|----------------|-----|--------|--------|--------|-------|
| | | | Staff in Place | Staff in Place | Staff in Place | \$ | \$ | \$ | \$ | |
| SMG | Directors | (4) | (4) | 52 | (4) | 53 | 55 | 56 | 57 | 273 |
| NPS | Marketing Specialists | (35) | (20) | 169 | (35) | 291 | 301 | 311 | 320 | 1,392 |
| PMA | Administration/Personnel | (3) | (3) | 19 | (3) | 20 | 21 | 22 | 22 | 104 |
| FAA | Finance | (2) | (2) | 14 | (2) | 15 | 15 | 16 | 17 | 77 |
| PST | Inspection/Monitor | (16) | (12) | 71 | (16) | 97 | 101 | 106 | 110 | 485 |
| TSSGT | Lab Technician | (1) | (1) | 5 | (1) | 5 | 5 | 5 | 6 | 26 |
| CR | Clerk | (11) | (6) | 18 | (11) | 34 | 35 | 37 | 37 | 161 |
| ST | Stenographer/Typist | (19) | (11) | 35 | (19) | 58 | 61 | 63 | 66 | 283 |
| LMO | Driver | (5) | (2) | 5 | (5) | 13 | 13 | 14 | 14 | 59 |
| | Subtotal (salary & allowances + 25% bonus) | | | 388 | | 587 | 608 | 630 | 649 | 2,862 |
| | Fringe Benefits (15%) | | | 58 | | 88 | 91 | 94 | 98 | 429 |
| | Travel | | | 7 | | 10 | 10 | 10 | 10 | 47 |
| | Consultants (As required) | | | 44 | | 45 | 45 | 45 | 45 | 224 |
| | Total | (96) | (61) | 497 | (96) | 730 | 754 | 779 | 802 | 3,562 |
| | Less Staff now in MOA (including travel, bonuses and allowances) | | | 226 | | 234 | 241 | 249 | 256 | 1,206 |
| | Additional Funding Required | | | 271 | | 496 | 513 | 530 | 546 | 2,356 |

-30-

^{1/} Includes annual salary increments

- 1 Retail and Wholesale Marketing Specialist
- 1 Agro-Industries and Food Processing Specialist
- 1 Producer Marketing Specialist
- 1 Senior Market Inspector
- 2 Agricultural Marketing Specialists in Quality Control
- 1 Agricultural Marketing Training Specialist

Four Regional Officers/Marketing Specialists will be assigned, one to each Regional Office. They are required to provide administrative responsibility for 24 out-posted field staff of the three branches. In addition, they will serve as senior marketing extension specialists. They will be responsible directly to the Director of the Marketing Division, but will also report to the Regional Director to facilitate regional administration of field activities undertaken by the Division.

Eight marketing extension specialists in the Marketing Development Branch, eight market monitors in the Market Information and Research Branch, and eight inspection officers from the Quality Assurance Branch are required to be out-posted--two of each category in each Region with a total of six in each region. They will look to the Regional Marketing Officer for administrative matters and assistance. When needed, they will have office space and support from the regional offices.

On the support side, key officers will include an administrative officer, financial officer, personnel officer, and an accountant. The personnel officer and the accountant will be out-posted to the Personnel Division and the Accounting Division, respectively. Other staff requirements include a lab technician in the Quality Assurance Branch, a research/statistical librarian in the Marketing Information and Research Branch and clerks (11), secretaries (4), typists (15), and drivers (5) located throughout the various branches and units. In addition, funds are provided for local consultants to be used as required.

c. Marketing Division Budget

The life of Project costs for establishing the Marketing Division within the MOA are shown in Table 4.

Table 4
Marketing Division Costs: New Funding ^{1/}
(US \$000)

| | U S A I D | | | | | | G O J | | | | | |
|----------------------------------|-----------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
| Staffing ^{2/} | -- | -- | -- | -- | -- | -- | 271 | 496 | 513 | 530 | 546 | 2,356 |
| Vehicles | 50 | 60 | -- | -- | -- | 110 | -- | -- | -- | -- | -- | -- |
| Vehicles - Fuel & Maintenance | -- | -- | -- | -- | -- | -- | 8 | 27 | 37 | 37 | 37 | 146 |
| Utilities & Miscellaneous | -- | -- | -- | -- | -- | -- | 7 | 7 | 7 | 7 | 7 | 35 |
| Training | 41 | 178 | 208 | 53 | 12 | 492 | 20 | 20 | 20 | 20 | 20 | 100 |
| Training Supplies & Materials | 2 | 2 | 2 | 2 | 2 | 10 | -- | -- | -- | -- | -- | -- |
| Miscellaneous Equipment | 3 | 2 | 1 | -- | -- | 6 | -- | -- | -- | -- | -- | -- |
| Technical Assistance | 660 | 648 | 704 | 642 | 512 | 3,166 | -- | -- | -- | -- | -- | -- |
| Total | 756 | 890 | 915 | 697 | 526 | 3,784 | 306 | 550 | 577 | 594 | 610 | 2,637 |
| Contingency (5%) | 38 | 44 | 46 | 35 | 26 | 175 | 15 | 28 | 29 | 30 | 31 | 133 |
| Inflation (10%) | -- | 89 | 192 | 230 | 244 | 741 | -- | 55 | 121 | 197 | 283 | 656 |
| Project Element Cost | 794 | 1,023 | 1,153 | 962 | 796 | 4,700 | 321 | 633 | 727 | 821 | 924 | 3,398 |
| Total Element Cost (USAID + GOJ) | | | | | | | | | | | | 8,126 |

^{1/} There are 25 positions in the MOA that have been identified that will be transferred to the Division
^{2/} Includes allowances, fringe benefits, travel expenses, 25 percent project bonus and annual salary increments.

Phase II

Phase II consists of the construction of four (4) Sub-terminal Wholesale Distributors Markets and 25 assembly and Grading Stations. It will be initiated upon completion of required in-depth surveys, construction plans and costing.

It is anticipated that Phase II will commence within one after Phase I.

3. Subterminal Wholesale Distribution Markets (Preliminary)

AID - \$5,860,000

GOJ - \$5,442,000

In order to achieve efficiencies in distribution, reduce post harvest losses, expand markets for locally produced food crops, and increase availability of graded agricultural products, four Subterminal Wholesale Distribution Markets are planned under the Project. Given the size of the island, its topography, and geographical distribution of production and retail centers, it has been determined that four such markets would provide the most efficient coverage.

Selection of sites for the Subterminal Wholesale Distribution Markets will be undertaken in cooperation with Parish Councils, the Ministry of Local Government, Town Planning, Ministry of Works, and other pertinent agencies. Criteria for selection of sites will include:

- Patterns of product flow;
- Present and historical usage of area for markets;
- Adequacy of road network;
- Availability of utilities and services;
- Location with respect to sources of supply and retail markets;
- Overall civic development plans;
- Ease of access to main road(s); and,
- Physical characteristics of the soil and drainage.

Separate buildings or "blocks" situated on sites of approximately 10 acres are most appropriate to reduce contamination of one type of product by another and to permit optimum efficiency and utilization of the premises. Size of the blocks is based upon models presented in the FAO study mentioned earlier. The size of the site and layout of the various blocks allow for future expansion.

Market design will follow closely the principles outlined in the FAO study. Experience of the U.S. Department of Agriculture in designing wholesale facilities will also be utilized. The type of facility will be based on an "open-hall" system, which is considered to be appropriate for Jamaican conditions, considering cost, efficiency and protection of produce. The four markets will vary somewhat in size, but will consist generally of market blocks and storage for fruits and vegetables, meat and fish, and general provisions; a general administration block and employee facilities; a maintenance block, a farmers' market; and vendors' offices.

The fruit and vegetable and meat and fish market blocks will provide for display, temporary on-floor storage and sales area. In addi-

tion, office space will be provided for twenty wholesalers on a mezzanine above the sales floors. The general provisions block will provide display and sales area and, in addition, will serve as a longer term storage area for produce not requiring temperature or humidity control.

A farmers' market will be included in each market with a covered sales area of 25000 square feet plus parking space. This will provide for 20 sales stalls where farmers or higglers may bring their produce to the market, park their trucks, wagons, or other type conveyance, and sell directly to wholesalers and/or retailers.

The meat and fish cold storage will be located immediately to the rear of the meat and fish market blocks with direct access from the market. The fruit and vegetable cold storages will be located adjacent to the fruit and vegetable markets. Produce can move directly into cold storage either from delivery trucks or from the market. Produce can also move directly out of storage onto trucks for immediate delivery (sales out of storage) or into the markets for display and sale.

A general administration block will provide offices and facilities for the management staff of the market and facilities for the produce inspectors and market monitors. A cafeteria, washrooms, dining room and changing rooms will be provided in the employee facility. The maintenance block will provide facilities for storing tools, undertaking minor repairs on equipment and vehicles and will provide a parking area for the three refrigerated trucks to be provided to each market. General maintenance of all market equipment will be carried out by a general mechanic/maintenance man from the facility. A standby generator and fuel tank will also be located at the facility.

Access to the market will be limited to qualified wholesalers and retailers and to farmers or small market intermediaries. Consumers will not be admitted. A system of control will be implemented to limit entry into the markets.

The four Subterminal Wholesale Distribution Market will be constructed at a cost of \$7.6 million. Table 5 shows the cost breakdown. Final plans, blueprints and lists of required equipment will be prepared during the first six months of the Project by the Marketing Division and the Agricultural Research Projects Unit of the Ministry of Public Works. Construction time is projected to be 18 months. Equipment lists will be finalized after site selection. Equipment, which is part of the cost of the facilities, includes compressors and condensers, air conditioning units, piping, truck scales, meat rails and hooks, backup generators, roller conveyors, carts, scales and fork lifts. Scheduling of construction and procurement is shown in Figure 8.

Table 5

Wholesale Market Construction Costs
(US\$)

| Component | Dimensions (ft) | Footage (Sq. Ft.) | Unit Cost (\$/Sq. Ft.) | Total Cost \$ | AID \$ | GOJ \$ |
|---|--------------------|----------------------|---------------------------|------------------|------------------|------------------|
| Fruit & Vegetable Market | 80 x 200 | 16,000 | 10 | 160,000 | 80,000 | 80,000 |
| Meat & Fish Market | 50 x 200 | 10,000 | 30 | 300,000 | 200,000 | 100,000 |
| General Provisions Market | 40 x 50 | 2,000 | 15 | 30,000 | 10,000 | 20,000 |
| Meat & Fish Cold Storage | 30 x 50 x 14 | 1,500 | 56 | 84,000 | 75,600 | 8,400 |
| Fruit & Vegetable Cold Storage | 30 x 100 x 14 | 3,000 | 56 | 168,000 | 151,200 | 16,800 |
| General Administration | 30 x 50 | 1,500 | 20 | 30,000 | 18,000 | 12,000 |
| Employee Facilities | 60 x 24 | 1,440 | 30 | 43,200 | 25,920 | 17,280 |
| Maintenance | 30 x 60 | 1,800 | 30 | 54,000 | 27,000 | 27,000 |
| Farmers' Market | 25 x 100 | 2,500 | 5 | 12,500 | 9,375 | 3,125 |
| Vendors' Offices (10) | 10 x 30 | 3,000 | 20 | 60,000 | 36,000 | 24,000 |
| Total Construction Costs | | 42,740 | 22 (avg.) | 941,700 | 633,095 | 308,605 |
| Site Development (30% of construction) | | | | 282,510 | -- | 282,510 |
| Design Contingencies (10% of construction) | | | | 94,170 | -- | 94,170 |
| ASE/QS/Construction Supervision Fees (16% of construction) | | | | 150,672 | -- | 150,672 |
| Ten Acres of Land | | | | 82,000 | -- | 82,000 |
| Standby Generator, Truck Scales & Miscellaneous Equipment | | | | 338,000 | 338,000 | -- |
| Average Cost per Market | | | | <u>1,889,062</u> | <u>971,095</u> | <u>917,967</u> |
| Total Costs for Four Markets plus Rounding | | | | 7,600,000 | 3,900,000 | 3,700,000 |

- 35 -

Figure 8
Scheduling of Construction and Procurement

| Activity | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|--------|--------|--------|--------|--------|
| <u>Wholesale Distribution Markets</u> | | | | | |
| Ordering & Delivery of 12 refrigerated trucks | | (6) | (6) | | |
| Buildings, equipment, infrastructure, contracts, construction | | | (2) | (2) | |

Three ten-ton refrigerated trucks, one for meat and the other two for produce, will be provided to each of the four Subterminal Wholesale Distribution Markets to facilitate transport of perishables from one region to another. This will help to alleviate the chronic problem of surpluses in one area and shortages in another and help the markets fulfill their assembly, concentration and distribution functions. The number of trucks to be provided will be sufficient to demonstrate the benefits of refrigerated transport and provide the capability to move a large volume of produce from one wholesale facility to another. Trucks of various sizes, but without refrigeration, are now utilized. The trucks will be rented to wholesalers or retailers by the management of the market.

To manage the markets, a limited liability company will be established with the GOJ as the principal stockholder. The company will be under the aegis of the Marketing Division of the MOA, but each market will have its own staff and operate autonomously. The Board of Directors of the company will consist of two representatives from the MOA (one member, the Financial Officer of the Marketing Division, will serve as Corporate Secretary), the manager of each wholesale market, and five members from the agricultural and private sector.

The company will be responsible for hiring the General Manager of each market and for reviewing the operations of the markets. The Corporate Secretary will consolidate the financial reports of the markets, reporting to the Board at periodic meetings. There will be no full time staff of the Board other than the Corporate Secretary, who will be a staff member of the Marketing Division.

Market fees will be assessed on the basis of square footage of market space utilized, rental for office space and rental of storage. Fees will be based on operating costs and amortization of capital costs. (See the Financial Analysis Section for a more detailed discussion.)

The management of the wholesale facilities and the wholesale distributors will require training in management and wholesaling. The management staff will be selected and hired in advance of completion of the facilities and provided with short-term external and in-country training. Wholesalers will be provided short-term in-country training and assistance by marketing extension specialists and technical advisors. The training will be provided through the Marketing Division in cooperation with the Training Division of the MOA.

Each market will require a minimum staff consisting of a general manager, an assistant manager, a storage manager, an assistant storage manager, an accountant/cashier, two clerks, a typist, a dispatch clerk (for vehicles), a mechanic/equipment maintenance man, two custodians, three general laborers, six drivers, three gatekeepers and three guards, one for each shift. (Table 6).

The total cost of the Subterminal Wholesale Distribution Markets over the life of the Project is \$11.3 million. The allocation of these costs to the relevant categories is shown in Tables 6 and 7.

Table 6

Subterminal Wholesale Distribution Markets Staffing Requirements and Costs 1/

| Personnel | Total Number | Year 1 | Year 2 | Year 3 | | Year 4 | | Year 5 | Total |
|----------------------------------|--------------|--------|--------|--------|-----------------|--------|------------------|------------|--------------|
| | | | | No. | \$ | No. | \$ | | |
| Market Manager | (4) | -- | -- | (2) | 12 | (4) | 26 | 28 | 66 |
| Assistant Manager | (4) | -- | -- | (2) | 9 | (4) | 18 | 20 | 47 |
| Storage Manager | (4) | -- | -- | (2) | 9 | (4) | 18 | 20 | 47 |
| Assistant Storage Manager | (4) | -- | -- | (2) | 7 | (4) | 14 | 15 | 36 |
| Accountant | (4) | -- | -- | (2) | 8 | (4) | 16 | 18 | 42 |
| Clerk | (8) | -- | -- | (4) | 9 | (8) | 19 | 20 | 48 |
| Typist | (4) | -- | -- | (2) | 5 | (4) | 9 | 10 | 24 |
| Dispatch Clerk | (4) | -- | -- | (2) | 7 | (4) | 14 | 15 | 36 |
| Mechanical/Equipment Maintenance | (4) | -- | -- | (2) | 10 | (4) | 19 | 21 | 50 |
| Custodian | (8) | -- | -- | (4) | 5 | (8) | 12 | 13 | 30 |
| Laborers | (12) | -- | -- | (6) | 7 | (12) | 15 | 17 | 39 |
| Drivers | (24) | -- | -- | (12) | 40 | (24) | 83 | 87 | 210 |
| Gatekeeper | (12) | -- | -- | (6) | 12 | (12) | 24 | 27 | 63 |
| Guards | (12) | -- | -- | (6) | 12 | (12) | 24 | 27 | 63 |
| Total Salary | | | | | <u>152</u> | | <u>311</u> | <u>338</u> | <u>801</u> |
| Fringe Benefits (15%) | | | | | <u>22</u> | | <u>47</u> | <u>51</u> | <u>120</u> |
| Total Salary + Benefits | | | | | <u>174</u> | | <u>358</u> | <u>389</u> | <u>921</u> |
| Contingency (5%) | | | | | 9 | | 18 | 19 | 46 |
| Inflation (compounded 10%) | | | | | <u>37</u> | | <u>118</u> | <u>180</u> | <u>335</u> |
| | <u>(108)</u> | | | | (54) <u>220</u> | | (108) <u>494</u> | <u>588</u> | <u>1,302</u> |

1/ Includes Annual Salary Increments

4. Assembly and Grading Stations (Preliminary)

AID - \$1,381,000

GOJ - \$2,845,000

To achieve optimum marketing efficiency, farm produce should be assembled, graded and packed for distribution as near to the farmgate as possible. The Project provides for establishing 25 Assembly and Grading Stations in selected producing areas. It was determined that the Marketing Division would be able to handle approximately 25 Stations over the five year life of the Project. Also, preliminary analysis of the marketing system and production regions indicated a need for establishing about six Stations in the general vicinity of each Subterminal Wholesale Distribution Market.

Establishment of the Stations will permit the cooperative collection and assembly of commodities in volumes large enough to sort into identifiable grades and to facilitate shipment to subterminal or terminal markets. For small intermediaries, the Assembly and Grading Stations will greatly reduce the cost of obtaining produce because they can go to a facility and obtain whatever volume is required of the commodities handled. The product will already be graded, affording the intermediary the opportunity of purchasing whatever grade or quality is desired. Collection of like commodities and differentiating them by grade will both promote economies of scale and result in greater unit profit to the producer. Assembly of larger volumes of differentiated products in the producing area will also encourage development and growth of larger, more efficient distributors (wholesalers) and evolution of a more structured marketing system.

Assembly and Grading Stations will also provide a means of distributing factor inputs (fertilizer, insecticides, fungicides, herbicides, small tools and implements and containers) to small farmers. Presently, small farmers do not have easy access to such inputs.

Selection of areas and sites for the Stations will be undertaken on a case-by-case basis. Initial contact with producers by production and marketing extension staff and Jamaica Agricultural Society personnel to upgrade marketing knowledge and awareness will precede area and site selection. Detailed surveys will be conducted in producing areas by the Marketing Division to ascertain producer and market intermediary interest. Producer groups which will participate in the development and operation of Stations will then be selected by Marketing Division staff together with JAS personnel, agricultural extension agents and other pertinent agencies. Criteria for selection of Station sites and producer groups will include the following:

- producer and/or higgler interest in joining together in a marketing activity;
- production know-how of producers;
- volume of particular crops within a "reasonable" radius;
- adequacy of feeder roads; and,
- availability of utilities

In order to assure the desired degree of participation by farmers and "country higgler" prior to the selection of an area for establishment of a Station, a survey will be made to provide information on farm families, higgler, interrelationships between farmers and higgler, number of households and their degree of involvement and dependence on higgling, the type and relative influence of social organizations, and the leadership structure. Extension strategy and training programs will be oriented to overcoming the perceived socio-cultural constraints as well as constraints of a more technical nature.

a. Construction and Equipment

The type and complexity of facilities to be constructed and the operations to be undertaken will vary from Station to Station. The criteria for determining the type of facility at each site will include the following:

- types of crops to be graded, packed and marketed;
- general quality of produce;
- size, number and volume of producers;
- range of commodities produced;
- target market (e.g., domestic, export, or both); and,
- distance from markets.

Design of the facilities will be undertaken in conjunction with fruit and vegetable marketing specialists and consultants in grading and packing systems. Two basic models have been developed (See Table 8). Final design of each will be based on these models, but there will be variations depending on the above criteria.

Final area and site selection will occur during the first three years of the Project. Two sites will be selected and plans prepared during the first six months of year one. The first two Stations will be operational before the end of year one. They will serve as training centers and trial demonstrations and as a basis for other centers to be established.

The Agricultural Research Project Unit (ARP Unit) will be responsible for plans, blueprints, letting contracts, and supervision and inspection of contractors' performance.

Construction costs for the 25 Stations are estimated to be \$1.7 million (Table 8). Equipment to be provided includes grading and packing equipment, pre-cooling equipment (hydro or air blast), compressors, condensers, and roller conveyors.

Scheduling for construction of the Stations is as illustrated in Figure 9.

Table 8

Assembly and Grading Station Construction Costs
by Model of Facility
(US\$)

| | AID | GOJ | TOTAL |
|--|-------------|---------|-----------|
| <u>Model No. 1</u> | | | |
| Grading & Packing (30' x 60') | 4,500 | 4,500 | 9,000 |
| Offices & Store (15' x 30') | 5,625 | 5,625 | 11,250 |
| Equipment | 5,000 | -- | 5,000 |
| Site Development | -- | 4,050 | 4,050 |
| Total | 15,125 | 14,175 | 29,300 |
| <u>Model No. 2</u> | | | |
| Grading & Packing (35' x 70') | 6,125 | 6,125 | 12,250 |
| Offices & Store (20' x 35') | 8,750 | 8,750 | 17,500 |
| Cold Storage (30' x 60' x 14') | 90,720 | 10,080 | 100,800 |
| Equipment | 25,000 | -- | 25,000 |
| Site Development | -- | 26,100 | 26,100 |
| Total | 130,595 | 51,055 | 181,650 |
| Total Estimated Construction Cost - 25 Stations | \$1,071,000 | 576,000 | 1,647,000 |

Table 9
Assembly and Grading Stations
(US\$ 000)

| | U S A I D | | | | | | G O J | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|--------------|
| | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> | <u>Total</u> | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> | <u>Total</u> |
| <u>Capital Costs</u> | | | | | | | | | | | | |
| Land acquisition | -- | -- | -- | -- | -- | -- | 2 | 6 | 11 | 6 | 3 | 28 |
| Construction, Equip- ment, Plans, Services, etc. | <u>180</u> | <u>200</u> | <u>400</u> | <u>200</u> | <u>120</u> | <u>1,100</u> | <u>48</u> | <u>114</u> | <u>219</u> | <u>114</u> | <u>77</u> | <u>572</u> |
| Total Capital Costs | 180 | 200 | 400 | 200 | 120 | 1,100 | 50 | 120 | 230 | 120 | 80 | 600 |
| <u>Operating Expenses</u> | | | | | | | | | | | | |
| Utilities, Telephone, and Miscellaneous | -- | -- | -- | -- | -- | -- | 9 | 31 | 74 | 96 | 109 | 319 |
| Staffing & Labor | -- | -- | -- | -- | -- | -- | 22 | 99 | 258 | 357 | 412 | 1,148 |
| Materials & Containers | -- | -- | -- | -- | -- | -- | 17 | 118 | 286 | 369 | 420 | 1,210 |
| Vehicle - Hire, Fuel and maintenance | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>8</u> | <u>59</u> | <u>143</u> | <u>185</u> | <u>210</u> | <u>605</u> |
| Gross Operating Expenses | -- | -- | -- | -- | -- | -- | 56 | 307 | 761 | 1,007 | 1,151 | 3,282 |
| Revenue | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>--</u> | <u>38</u> | <u>202</u> | <u>567</u> | <u>888</u> | <u>1,695</u> |
| Net Operating Expenses | -- | -- | -- | -- | -- | -- | 56 | 269 | 559 | 440 | 263 | 1,587 |
| Net Cost to GOJ | -- | -- | -- | -- | -- | -- | 106 | 389 | 789 | 560 | 343 | 2,187 |
| Contingency (5%) | 9 | 10 | 20 | 10 | 6 | 55 | 5 | 19 | 40 | 28 | 17 | 109 |
| Inflation 10% compounded) | <u>--</u> | <u>20</u> | <u>84</u> | <u>66</u> | <u>56</u> | <u>226</u> | <u>--</u> | <u>39</u> | <u>166</u> | <u>185</u> | <u>159</u> | <u>549</u> |
| Project Element Cost | 189 | 230 | 504 | 276 | 182 | 1,381 | 111 | 447 | 995 | 773 | 519 | 2,845 |
| Total Element Cost (USAID + GOJ) | | | | | | | | | | | | 4,226 |

Figure 9
Schedule of Construction for Assembly and Grading Stations

| Activity | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|--------|--------|--------|--------|--------|
| Buildings & Equipment (2 Stations) | (2) | | | | |
| Buildings & Equipment (5 Stations) | | (5) | | | |
| Buildings & Equipment (10 Stations) | | | (10) | | |
| Buildings & Equipment (5 Stations) | | | | (5) | |
| Buildings & Equipment (3 Stations) | | | | | (3) |

The facilities, each to be located on a site of approximately two acres, will consist of a grading and packing shed, an office and dry storage block and, at some Stations, cold storage. The minimum size of a grading and packing shed will be 30' x 60' which is sufficient to provide shelter for workers, accommodate grading and packing equipment, and stack incoming produce before grading, as well as the packed produce awaiting shipment.

The office will accommodate a manager and, depending upon the size of the operation, a bookkeeper and other staff. Rest rooms and changing rooms will also be provided. Dry storage is required for supplies, such as boxes, labels, detergents, waxes, depending upon the size and complexity of the operation.

Cold storage will be provided at those facilities located in high producing areas and particularly where there have been historical problems with "surplus" removal. The type of storage will be determined by the crops produced in the area.

Equipment to be installed at the various Stations will vary greatly. The minimum will include a simple grader with cull eliminator, inspection rollers, brushes, sizer and packing tables. Other facilitating equipment will include roller conveyors, scales, and miscellaneous packing aids. The larger facilities, depending upon the crops to be handled, will have a grading line consisting of a cull eliminator, washer, dryer, wax applicator, sizing units, and packing tables. In addition, pre-cooling equipment (i.e., hydro-cooler or air blast) may be provided. Roller conveyors, scales, carts and other packing aids will also be included. In essence, the type of equipment to be provided will be correlated with the type of operations and the target market.

b. Training

Training will consist of short-term classroom training, on-the-job training and general extension training, and will be provided by technical advisors of the Marketing Division to personnel of the Assembly and Grading Stations, farmers and market intermediaries. Training will address the concept of established grades and standards and their application, the logistics of produce collection, the operation of grading and packing equipment and the use and operation of cold storage. Station managers and key personnel will receive training in special three-week courses. Others will receive on-the-job training supervised by technical advisors and Marketing Division personnel. The first two Assembly and Grading Stations established will provide on-the-job training for personnel of succeeding Stations.

c. Management and Personnel

The Stations will not be organized on a uniform basis, but may be established as a cooperative, an association, or a limited liability company. The particular form of organization appropriate for a given Station will be determined by the Marketing Division of the Ministry on the basis of the technical and socio-economic surveys to be made in connection with site selection. Once the appropriate form of organization has been determined, training programs can be designed accordingly. Staff of the Stations will vary according to the type and size of operation, but in general will consist of a manager, a storekeeper/accounting clerk, and part-time employment for security personnel and laborers. Staffing costs over the five year life of the Project are shown in Table 10.

Table 10
Assembly and Grading Station Staffing Costs ^{1 /}
(US\$000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|------------------------------|----------|-----------|------------|------------|------------|------------|
| Number of Stations | (2) | (7) | (17) | (22) | (25) | (25) |
| Manager | 8 | 28 | 70 | 96 | 117 | 319 |
| Storekeeper/Accounting Clerk | 3 | 12 | 30 | 41 | 50 | 136 |
| Security | 2 | 8 | 20 | 28 | 33 | 91 |
| Laborers | <u>8</u> | <u>50</u> | <u>138</u> | <u>192</u> | <u>212</u> | <u>600</u> |
| Total Salary | 21 | 98 | 258 | 357 | 412 | 1,146 |
| Contingency (5%) | 1 | 5 | 13 | 18 | 21 | 58 |
| Inflation (compounded 10%) | <u>0</u> | <u>10</u> | <u>54</u> | <u>118</u> | <u>191</u> | <u>373</u> |
| Total | 22 | 113 | 325 | 493 | 624 | 1,577 |

1 / Includes annual salary increments

C. Beneficiaries of the Project

Upgrading of the marketing system will produce positive benefits for small farmers, market intermediaries and consumers.

1. Small Farmers

With more efficient marketing, small farmers will be able to sell more produce and thereby increase their incomes. This increase in income will enable farmers to afford more factor inputs, such as fertilizer, pesticides, and tools. Increased income to small farmers will also result in better housing and nutrition.

As a result of the marketing extension activities of the Project, farmers will be able to improve their farming practices which will result in the production of larger quantities of higher quality produce and higher incomes.

Establishment of the Assembly and Grading Stations, the Sub-terminal Wholesale Distribution Markets, and revitalization of Jamaica's already established small agro-industries will generate alternative employment opportunities for family members of small farmers as well as small market intermediaries.

2. Market Intermediaries

One of the problems identified by higglers is the large amount of time required to collect produce from individual farms. Establishment of the Subterminal Wholesale Distribution Markets and the Assembly and Grading Stations will enable higglers to obtain their produce more efficiently and in larger quantities. Higglers thereby will be able to sell larger quantities and reduce transportation costs allowing them to make greater profits.

Larger wholesalers or groups of small intermediaries will be able to rent space in the wholesale markets which will enable them to expand their operations.

3. Consumers

Consumer benefits from a more efficient marketing system will be in the form of a large volume of better produce at reduced prices.

With better grading of produce, low income populations in urban centers will be able to obtain more food at lower prices resulting in improved nutrition, particularly among children. Upper and middle income populations will be able to purchase better quality, locally produced food. Availability of higher quality produce in-country will decrease the present need to import commodities to supply the hotel and restaurant trade.

III. PROJECT ANALYSES

A. Technical and Administrative Analysis

1. Introduction

The approach of improving the total agricultural marketing system of a country or region by introducing a wholesale distribution system as proposed in this Project has been tested in a wide range of countries. For example, similar systems were developed in Malaysia in 1964, Jordan in 1965, Peru in 1955 and expanded in 1971, Colombia in 1972, and various regions of Brazil from 1966 to 1975. In these and many other cases, the wholesale systems have led to substantial marketing efficiencies and reduced post harvest losses.

Several factors contribute to the appropriateness of this approach for Jamaica at the present time. Jamaica has a rapidly expanding urban population. It has a relatively well developed all weather road network. There is a substantial potential market for locally produced quality food products in the tourist industry on the North Coast. Some experience in solving storage, handling, distribution, grading, and packing problems already exists in connection with the traditional export crops.

2. Policy Framework

The timing of the Project is particularly appropriate. The GOJ's high priority efforts in recent years to increase agricultural production have clearly demonstrated the inability of the present marketing system to handle an expanding load. This marketing constraint has been exacerbated by the recent curtailing of the Agricultural Marketing Corporation (AMC) buying facilities.

Aware of the urgent need for marketing reform, the GOJ has been considering a number of policy options for carrying it out. These deliberations culminated in a recent Cabinet level policy and strategy decision calling for improvements to the marketing system as envisioned in this Project and charging the Ministry of Agriculture (MOA) with responsibility for coordinating these improvements. (See Annex F.) As a result, the Ministry of Local Government, which has responsibility for the parish retail market system, has agreed that responsibility for management of the new Subterminal Wholesale Distribution Markets should be lodged with the MOA. Also, the Ministry of Industry and Commerce, within which AMC now falls, has requested MOA to develop a plan for AMC's future role and organizational relationship.

Thus, the overall policy and organizational framework for Jamaica's future agricultural marketing development, which AID, IDB and other donors

have been encouraging the GOJ to define for some time, is now in place. Momentum should not be lost in moving toward implementation of planned improvements.

3. Staffing

In Phase I the Project calls for establishing a Marketing Division in the MOA with a staff of 96 persons of which 25 are now on board. In Phase II the four Subterminal Wholesale Distribution Markets will require new staff totaling over 100 persons and the Assembly and Grading Stations will require about 50 persons. Wholesalers will also be needing additional personnel. Given the current unemployment rate in Jamaica of about 30 percent, the flow of graduates of about 650 per year from the Jamaica School of Agriculture and College of Arts, Science and Technology and the current reduction of AMC staff by about 200 persons with some marketing experience, it is not expected that there will be any difficulty in obtaining the necessary personnel.

A recent Cabinet level decision permits the GOJ to offer salary incentives for personnel working on projects receiving assistance from foreign donors. The guidelines for implementing the decision, as established by the Ministry of Public Service (MPS), require that the MOA write job descriptions for each position for submission to and approval by the MPS. The MPS will classify each position into a particular job category and approve the total number of positions. The MOA will determine specific salary levels on the basis of an individual's qualifications and responsibilities. The range of salary can be as low as J\$4,000 to as high as J\$18,000. The only limitation is that the salary cannot exceed 25 percent more than the existing civil service pay rate for the highest level in a particular technical classification. It is estimated that it will take approximately 18 months for the MOA to hire the full Marketing Division staff under these procedures.

After the Marketing Division has been staffed, the Project allows 18 additional months for the MOA to obtain MPS approval of the Division as a permanent part of the MOA. One precondition to MPS approval is the commitment of the necessary GOJ funds. This commitment will be provided at the time the GOJ signs the Loan and Grant Agreements. A condition precedent to initial disbursement under these Agreements will be agreement in principle by the MPS to the number and types of personnel included in the staffing plan. The Agreements will also contain a Covenant that the MPS will approve the Marketing Division as a permanent part of MOA before the end of the third year of the Project.

4. Training

Many of the new staff will require overseas training. To insure that persons sent for training abroad will return to work in Jamaica, the Manpower Training Division of the MPS will execute a loan agreement with each participant to be trained abroad for three months or more. The loan agreements will be backed by a Guarantor for surety. The agreements will provide that unless the participant returns to perform service to Jamaica for a period at least twice the length of training, the participant will repay to the GOJ the full costs of the training including both AID and GOJ contributions.

In-country training is to be provided for staff of the Marketing Division as well as for personnel to manage the Markets and Stations, market intermediaries, and producers. Training will be conducted largely in MOA's existing training facilities. Curriculum and training materials will be drawn from those developed for use in other countries.

5. Subterminal Wholesale Distribution Markets

Rentable market and storage area for the four Markets totals 23,500 square feet. The volume of produce required to move annually through these markets to break even is 0.7 tons per square foot (see Table 24). At a minimum, therefore, 16,450 tons of produce will be required to move through each Market or a total of 65,800 tons through the four Markets each year. This represents only 13 percent of the 500,000 tons of fruits, vegetables, meat and fish, eggs and poultry marketed annually through regular market channels in Jamaica. It is anticipated that the throughput of these Markets will considerably exceed this volume. According to FAO estimates of market capacity, up to 0.5 tons per square foot for markets in the least developed countries and up to 2.5 tons per square foot in the most developed countries can feasibly move annually through markets of the type envisioned under the Project.

During development of this Project Paper, the GOJ has suggested the establishment of a limited liability company to manage the Markets. The MOA would be the only shareholder of the company. This is a familiar institutional arrangement in Jamaica and has a number of advantages. These include more autonomy regarding personnel and financial matters than a government agency would have; specifically, the company would keep its own books, pay its own operating and amortization expense from revenue, and return the balance to its shareholder. The Company can set and change the fee structure for use of the facilities within reasonable bounds. In addition, if necessary during the early stages of the Project, the MOA can cover any deficits of the company out of central treasury funds without loss of autonomy by the company. USAID has studied this suggestion by the GOJ and strongly endorses it.

6. Assembly and Grading Stations

When operational, the 25 Stations will have a minimum operating grading capacity of 119,175 tons per year--roughly 24 percent of marketed produce. At maximum operation, total volume of output from the 25 Stations could total 330,000 tons. Cold storage, to be constructed at six Stations, will have a total holding capacity of 24,000 tons. Depending upon turnover and volume of loading, the total amount of produce that could be stored is very significant. Assuming a very conservative turnover rate of four times per year (again recognizing that storage requirements are for short to medium turn), total storage volume could equal 96,000 tons or about 20 percent of marketed produce.

In addition to the volume of produce that will be graded and/or stored at the Stations, a large volume will be marketed by the Stations and delivered directly from the farm to the market without physically flowing through the facilities. It is estimated that an average of 24,000 tons may be marketed in this manner, or 20 percent of the grading and packing capacity of the Stations.

As pointed out in Section II above, organization of these Stations may take at least three different forms--producers' cooperative, association, or limited liability company. Experience exists in Jamaica with all three organizational forms.

7. MOA Capacity

In carrying out this Project, the Ministry will start with a base of 25 persons for the new Marketing Division to be established. It is recognized that most of the needed staff will have to be recruited and trained. Training, therefore, represents an important element of the Project design.

The capacity of MOA to carry out this Project will also be enhanced by the USAID/GOJ Agricultural Planning Project to begin in 1979. This Planning Project provides support to three units of the MOA that will directly relate to the Marketing Division. These units are the Training Division, the Data Bank and Evaluation Division, and the Planning and Policy Review Division.

The Planning Project will provide the Training Division staff with skills in training administration to meet its responsibilities to:

- furnish physical training facilities;
- perform a skills' inventory of Marketing Division personnel to assist in determining training needs; and,
- provide required support to the Marketing Training Division in support of the Agricultural Marketing Project.

The Data Bank and Evaluation Division is being assisted in development of staff capabilities through the Agricultural Planning Project and a USAID/PASA with the U.S. Bureau of the Census which has provided approximately 24 person-months of technical assistance to promote development of survey techniques and facilitate a rapid, efficient collection of data. By the third year of the Agricultural Marketing Project, the Data Bank and Evaluation Division will be capable of supplying the basic data required by the Marketing Division. Doing so will not levy an additional workload on the Data Bank and Evaluation Division; rather the Marketing Division will merely represent another customer for the basic agricultural data collected by the Data Bank and Evaluation Division's field enumerators. Analysis of the raw data will be performed by the Marketing Division.

The Planning and Policy Review Division of the MOA performs primarily macro and micro program and project planning in all areas relating to agricultural production and marketing. The Planning and Policy Review Division will obtain marketing data from the Marketing Division which will be incorporated into overall planning for the agricultural sector. The Planning Division in turn will provide planning guidelines for the Marketing Division. The Planning Division has already contributed to rewriting the Marketing chapter in the GOJ current Five Year Plan, and drafting the "National Agricultural and Food Marketing Policy" and the "National Marketing Strategy" which have received GOJ approval.

8. USAID Capacity

USAID capacity to handle the Project will be tested given the projects already under implementation or planned in the rural development sector (the Integrated Rural Development; Fish Production; Agricultural Planning; Agricultural Radio; and Agricultural Research, Extension and Training projects). Of great help has been and will continue to be the services of a Marketing Advisor provided under the National Planning Project whom the GOJ has indicated will be requested to serve as Team Leader under this Project as soon as it is approved and funded. The USAID Rural Development Office, which will have principal project management responsibility for this Project, will still require the same degree of support from the Capital Development, Controller, Economic Advisor, and Program Offices during implementation as has been provided during this Project Paper preparation.

9. Conclusion

The conclusion of this section is that: introduction of a wholesale distribution system is a feasible approach for Jamaica; the necessary policy and organizational framework exists; the needed personnel can be obtained and trained; the Subterminal Wholesale Distribution Markets and the Assembly and Grading Stations are feasible technically and organizationally; the MOA can carry out the Project; and the USAID will be able to perform its Project management responsibilities.

B. Engineering Analysis - Phase II (Preliminary)

1. Project Construction Costs

The total cost of construction is estimated to be approximately \$9,300,000. This figure includes related items such as land, equipment, furniture, standby generators, etc., as well as the cost of construction of the four Subterminal Wholesale Distribution Markets and 25 Assembly and Grading Stations. Estimates were made on a square foot basis taking into consideration elements needed for the intended function. Square foot unit prices were based on similar structures for which bids were received recently by the MOA. Since they are excluded by the Loan Agreement, duties and taxes are not included in the estimate. The estimate is based on preliminary layouts of the markets and includes an appropriate design contingency cost factor. Prices used were 1979 figures; inflation factors for costs are contained in the overall cost of the Project. The estimate is considered satisfactory for planning purposes and satisfies the requirement of the Foreign Assistance Act (Section 611 a). (Details of the estimate are contained in Tables 5 and 8.

2. Design and Supervision of Construction

A group has been transferred from the Ministry of Works (MOW) to the MOA to provide necessary architectural and engineering (A & E) services. This group is known as the Agricultural Research Projects Unit (ARPU). This group of architects, engineers and technicians will carry out design, preparation of contract documents, letting of contracts and supervision of construction.

The present staff of ARPU consists of 12 people including four professionals and six technicians plus administrative support. ARPU was transferred to MOA in 1978 to satisfy the requirements of international lending agencies for a competent and independent staff to design and supervise construction. ARPU is presently engaged in various stages of design, and contracting for construction of several other projects funded by IDB and the World Bank.

ARPU is supported by the MOW. Additional staff will be provided, either directly from MOW or through service contracts, as required. For example, a qualified Clerk of Works is expected to be provided from the MOW staff to supervise the construction of each major market.

A review of previously prepared contract documents, including plans and specifications, indicates this group is capable of designing the Project facilities. There should be no problems in the supervision of construction provided the proper staff is added to the ARPU. The MOA is well aware of the staffing level required for this task, and provision, therefore, is included in overall Project staffing requirements.

3. Engineering Criteria and Specifications

There are two basic GOJ design criteria for the design of structures. All buildings are designed to withstand hurricanes having a wind velocity of 120 mph and to withstand earthquakes in accordance with the lateral load requirements of the SEAOC Code of Southern California. Government rules and regulations and FAO Guidelines cover criteria for site selection in terms of waste disposal and will be mentioned briefly below under environmental considerations.

Specifications used by the Government are based on British Standard Specifications (BSS) adapted nationally by MOW and locally by the Ministry of Local Government (MLG). During site investigation, for example, soil samples and tests are performed for the design of foundations. The MLG provides specifications concerning conditions unique to a given area. Specifications are contained in the Conditions of Contract. Excerpts from a contract for construction of a market are contained in Annex H.

4. A & E Elements of Project Implementation

Following the determination of the site location, based on appropriate agricultural marketing considerations, the following activities will take place:

1. Site study including soils listing, topographic surveys, determination of utilities available and to be provided, and other site-unique requirements;
2. Arrangements for land acquisition;
3. Preparation of bidding and contract documents including plans and specifications;
4. Determination as to preselection of contractors or open invitations to submit tenders;
5. Evaluation of tenders;
6. Contract Award/Notice to proceed;
7. Supervision of construction;
8. Final acceptance of the work.

Government and USAID approval will be obtained at the appropriate stages of the implementation process.

The Government of Jamaica uses a Bill of Quantities type contract for this type of construction. The procedures are as follows. When design drawings have been completed, a Bill of Quantities or list of materials, is written by a Quantity Surveyor (QS). A document is then prepared and contains Conditions of Contract, Bills of Quantities and Specifications. This document, along with the design plans, constitutes the construction contract documents for tendering bids and for construction.

A Clerk of Works is appointed to supervise the construction contractor. When an item of work has been completed, the Quantity Surveyor is brought in to measure the actual quantity of work completed. Payment is then based on these quantities at the rates established in the accepted tender. Variations are provided for in the contract and paid from contingency amounts, if necessary.

This method of construction contracting is widely used in Britain as well as Jamaica and to a limited extent in the United States. Qualified Quantity Surveyors are chartered or registered, as are architects and engineers, and are considered as professional staff.

A Clerk of Works will be a professional staff member or a technician depending on the nature and scope of the work. For example, in relation to the Subterminal Wholesale Distribution Markets, the Clerk of Works will be equivalent to a resident engineer.

5. Construction Contractors

The Ministry of Works grades contractors "A", "B" and "C" according to each company's resources and capabilities. Each grade is further classified into specialties, such as buildings or civil works. Grade "A" contractors are considered capable of carrying out work in excess of J\$500,000. There are over 30 Grade "A" contractors presently operating in Jamaica. Many of the Grade "A" firms are considered by ARPU to be capable of constructing the Markets under the Project.

Skilled construction craftsmen are available in sufficient number for the construction of the Markets. Wages are considered relatively high and comprise as much as 40 percent of the cost of construction. Wages are controlled by the Joint Industrial Council. A labor/management agreement was signed in 1978 and continues until March of 1980. Although labor struggle is endemic to Jamaica, allowance therefore has been made in scheduling and cost estimating. Needless to say, the entire GOJ will cooperate in seeking to minimize labor problems affecting Project implementation.

C. Economic Analysis

1. Introduction

This Project is a sine-qua-non for any significant increase in the production of perishable agricultural products. Without improvement in the marketing system for perishable produce, there is little or no incentive for a significant increase in agricultural production.

In estimating the economic impact of this marketing project, a number of conservative assumptions are made. It would also be reasonable to assume that the reduction in waste and distribution costs, and the increase in production, will be significantly larger than postulated. In addition, sensitivity tests show that the benefit-cost ratio would still be highly favorable, even if the impact on waste and production obtained by the Project were less than those resulting from the conservative assumptions on which the analysis is based.

2. Projection of Benefits

Three types of benefits are expected from the project: reduction in waste, lower distribution costs and increase in production. Assumptions with respect to these benefits are outlined in Table 11.

Post harvest losses for perishable products as a result of spoilage and deterioration are currently estimated at 30 to 40 percent of production valued at farmgate prices. The ratio is projected to decline gradually as a result of this Project from 35 percent of production (valued at farmgate prices) to 25 percent by 1987 (Table 11, column 1).

As a result of the development of new market opportunities, the net value of production after netting out costs associated with the increase in output is projected to increase by 3 percent in 1984 and by another 2 percent in 1985 (column 3), and will exceed the level that would otherwise prevail by a constant rate of 5 percent beginning in 1985. The MOA's Marketing Advisor estimates that the Project should be expected to raise the gross annual production level by about 10 percent. However, since (a) the impact of this Project must be estimated apart from the impact of other agricultural production; (b) some costs are involved in producing the additional output which should be netted out; and (c) it is deemed prudent to adopt a more conservative projection, the benefit-cost calculation assumes that the Project will induce an increase in agricultural production of only 5 percent, this amount being on a net basis (i.e., after netting out costs associated with increased production).

Average distribution costs of perishable products¹ are estimated to be about 68 percent of farmgate prices. For fruits and vegetables,

¹Excluding cereals. Principal components are vegetables, legumes, fruits and meat. See listing in Table 12.

Table 11
Assumptions and Projections of Project Benefits^{1/}

| Year | (1) <u>Projected Waste</u> Waste as % of Total Marketed Production | (2) <u>Cumulative %</u> Reduction | (3) <u>Increase in Produc-</u> <u>tion (Cumulative)</u> | (4) <u>Reduction in Distribution Costs</u> Distribution Costs as % of Total Marketed Production | (5) <u>Cumulative %</u> Reduction |
|------|--|---|---|---|---|
| 1980 | 35 | - | - | 68% | - |
| 1981 | 35 | - | - | 68 | - |
| 1982 | 35 | - | - | 68 | - |
| 1983 | 34 | 1 | - | 68 | - |
| 1984 | 32 | 3 | 3 | 65 | 3 |
| 1985 | 29 | 6 | 5 | 62 | 6 |
| 1986 | 27 | 8 | ↓ | 60 | 8 |
| 1987 | 25 | 10 | ↓ | ↓ | ↓ |
| 1988 | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1989 | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1990 | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1991 | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1992 | ↓ | ↓ | ↓ | ↓ | ↓ |
| 1993 | ↓ | ↓ | ↓ | ↓ | ↓ |

^{1/} Expressed as a percent of total value of marketed production.

^{2/} The distribution costs in this column refer to the weighted average percent mark-up over farmgate price. The figure for 1980 (68%) was obtained by collecting data on farmgate and retail prices for 38 perishable products for which data were available. Distribution costs were calculated as the difference between retail and farmgate prices expressed as a percent of the farmgate price for each product. These 38 products were then weighted in accordance with the value of output in 1978.

distribution costs are higher--about 76 percent--and for meat, fish and poultry somewhat lower (about 50 to 60 percent). The Project is expected to reduce distribution costs by reducing unit transport handling and storage costs, i.e., by assuring a more efficient and speedier transfer of produce from the production areas to market centers as well as by delivering a higher quality product. We have assumed that the Project will result in the lowering of the weighted average distribution margin by 8 percent--from 68 to 60 percent--of farmgate values (see columns 4 and 5 of Table 11). The MOA's Marketing Advisor actually anticipates a larger reduction.

The first step in the analysis is to estimate the current value of production (at farmgate prices) of perishable products expected to be affected by the Project, and to project this output over 1980-94. Since our assumptions relating to the reduction of waste, increase in production and reduction in distribution costs are all expressed as percentages of the value of the production of perishable products to be channeled through the marketing system, the estimation and projection of the total value of production is essential to the quantification of the benefits.

The projection presented in Table 12¹ projects agricultural production over 1980-94 in the absence of a vigorous program to alter the historical trend over 1973-78. The projection is by the least squares method, and is thus very conservative.² Only half of the total production of eggs and poultry was included in the projection since a substantial share of these two products is raised under contract with large distributors and does not move through regular market channels.

Note that the total value of production affected is very large--J\$417 million in 1979--and is projected to rise to J\$497 million in 1984 and J\$659 million in 1994, and that it is in constant 1978 Jamaican dollars.

The gross³ benefits of the Project are estimated in Tables 13 and 14. The first column of Table 12 shows the production projection derived from Table 12. In column 2, allowance is made for the fact that not all agricultural production moves through the marketing system. Some portion is consumed on the farm. On the basis of estimates for some product categories made by the Data Bank and Evaluation Division of the Ministry of Agriculture,⁴ we have estimated that the portion of production consumed on the farm is about 10 percent, and have reduced our estimating base (shown in column 2) by this proportion.

¹ Prepared by the MOA.

² As it entails a year-to-year increase that is constant in absolute terms, the increase thus constitutes a continuously declining percentage of total production.

³ In the sense that Project costs have not yet been netted out.

⁴ In An Agro-Socio-Economic Sample Survey, Pindars River and Two Meetings Area, 1977, Tables 42A through 42P.

Table 12

Estimated Value of Production of Major Products and
Product Categories Affected by Project 1/
(1973-1990)

| Items | PRICE PER UNIT | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
|---------------------------------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Legumes | 2500/ton | 30,072 | 32,578 | 35,084 | 40,096 | 42,602 | 45,108 | 47,614 | 50,120 | 52,626 | 55,132 | 57,638 | 62,650 | 65,156 | 67,662 | 70,168 | 72,674 |
| Vegetables | 609.03/ton | 71,256 | 76,129 | 81,001 | 85,873 | 90,746 | 95,619 | 97,881 | 104,753 | 109,625 | 113,889 | 119,370 | 123,633 | 128,505 | 133,378 | 138,250 | 143,122 |
| Root crops | 158.16/ton | 100,676 | 104,160 | 107,643 | 110,776 | 114,262 | 117,746 | 120,881 | 124,364 | 127,500 | 130,983 | 134,119 | 137,602 | 141,086 | 144,221 | 147,356 | 150,571 |
| Onions | - | 52,560 | 52,560 | 52,560 | 53,611 | 54,663 | 55,777 | 56,893 | 58,010 | 59,191 | 60,375 | 61,582 | 62,814 | 64,070 | 65,352 | 66,679 | 67,966 |
| Citrus | - | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 |
| Plantains | 293.50/ton | 7,631 | 7,924 | 7,924 | 8,218 | 8,511 | 8,511 | 8,805 | 8,805 | 9,098 | 9,098 | 9,392 | 9,392 | 9,685 | 9,685 | 9,979 | 10,272 |
| Peanut | 280/ton | 760.5 | 793.8 | 827.4 | 861.0 | 894.6 | 928.2 | 961.8 | 995.4 | 1,029.0 | 1,062.6 | 1,096.2 | 1,129.8 | 1,163.4 | 1,197.0 | 1,230.6 | 1,264 |
| Pineapple | 420/ton | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 |
| Watermelon | 300/ton | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 | 1,839.6 |
| Eggs (% of total production) | .10/ea. | 11,000 | 11,800 | 12,850 | 13,700 | 14,600 | 15,450 | 16,300 | 17,150 | 18,000 | 18,900 | 19,750 | 20,600 | 21,450 | 22,300 | 23,150 | 24,000 |
| Fish | 1.20/lb. | 44,160 | 44,280 | 44,280 | 44,280 | 44,400 | 44,400 | 44,520 | 44,640 | 44,760 | 44,760 | 44,880 | 44,880 | 45,000 | 45,120 | 45,120 | 45,120 |
| Beef | 1.42/lb. | 39,164 | 39,178 | 39,206 | 39,215 | 39,249 | 39,277 | 39,306 | 39,320 | 39,348 | 39,377 | 39,391 | 39,419 | 39,448 | 39,462 | 39,490 | 39,518 |
| Pork | 1.15/lb. | 18,170 | 18,515 | 18,860 | 19,205 | 19,435 | 19,780 | 20,125 | 20,355 | 20,700 | 21,045 | 21,275 | 21,620 | 21,850 | 22,195 | 22,540 | 22,885 |
| Wool | 1.68/lb. | 3,293 | 4,052 | 4,872 | 5,544 | 6,384 | 7,056 | 7,896 | 8,568 | 9,240 | 10,080 | 10,920 | 11,592 | 12,432 | 13,104 | 13,944 | 14,784 |
| Poultry (% of total production) | 0.80/lb. | 29,080 | 30,800 | 32,520 | 34,200 | 35,920 | 37,600 | 39,320 | 41,040 | 42,724 | 44,440 | 46,120 | 47,840 | 49,560 | 51,240 | 52,920 | 54,600 |
| TOTAL | - | 417,425 | 432,526 | 447,578 | 465,723 | 481,372 | 497,111 | 513,144 | 528,955 | 544,829 | 560,302 | 576,867 | 594,679 | 611,085 | 626,769 | 642,881 | 659,076 |

1/ Projection of estimated value of production (at farmgate prices) over 1973-78 by least squares method. Milk was omitted as it does not pass through the regular marketing system; and only one-half of the egg and poultry production was included (it was assumed that 50% moves through special channels outside the normal marketing system).

59

Table 13
Estimate of Gross Benefits
(1978 US\$000)

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------|--|---|----------------------------------|--------------------------------------|---|---|
| | <u>Total Projected Production 1/</u> | <u>Total Projected Production to be Marketed 2/</u> | <u>Reduction in Waste 3/</u> | <u>Increase in Production 3/</u> | <u>Reduction in Distribution Costs 3/</u> | <u>Total Gross Benefits (2)+(3)+(4)</u> |
| 1980 | 432,526 | 389,273 | - | - | - | - |
| 1981 | 447,578 | 402,820 | - | - | - | - |
| 1982 | 465,723 | 418,881 | - | - | - | - |
| 1983 | 481,372 | 433,235 | 4,332 | - | - | - |
| 1984 | 497,111 | 447,400 | 13,422 | 13,422 | 13,422 | 4,332 40,266 |
| 1985 | 513,144 | 461,830 | 27,710 | 23,092 | 27,710 | 78,512 |
| 1986 | 528,955 | 476,060 | 38,085 | 23,803 | 38,085 | 99,973 |
| 1987 | 544,829 | 490,346 | 49,035 | 24,517 | 39,227 | 112,779 |
| 1988 | 560,302 | 504,272 | 50,427 | 25,214 | 40,342 | 115,983 |
| 1989 | 576,867 | 519,180 | 51,918 | 25,959 | 41,534 | 119,411 |
| 1990 | 594,679 | 535,211 | 53,521 | 26,761 | 42,817 | 123,099 |
| 1991 | 611,085 | 549,977 | 54,998 | 27,499 | 43,998 | 126,495 |
| 1992 | 626,769 | 564,092 | 56,409 | 28,204 | 45,128 | 129,741 |
| 1993 | 642,883 | 578,595 | 57,859 | 28,930 | 46,288 | 133,077 |
| 1994 | 659,076 | 593,168 | 59,317 | 29,659 | 47,453 | 136,429 |

1/ Carried over from Table 12.

2/ Makes allowance for the fact that not all agricultural production is marketed. An estimated 10% is consumed on the farm. The figures in this column were obtained by multiplying those in Column 1 by .9.

3/ Calculated in accordance with the assumptions described in Table 11.

Table 14
Estimate of Gross Benefits
(1978 US\$000) 1/

| <u>Year</u> | (1) <u>Reduction in Waste</u> | (2) <u>Increase in Production</u> | (3) <u>Reduction in Distribution Costs</u> | (4) <u>Total Gross Benefits (1)+(2)+(3)</u> |
|-------------|--------------------------------------|--|---|--|
| 1980 | - | - | - | - |
| 1981 | - | - | - | - |
| 1982 | - | - | - | - |
| 1983 | 2,826 | - | - | - |
| 1984 | 8,755 | 8,755 | - | 2,826 |
| 1985 | 18,076 | 15,062 | 8,755 | 26,265 |
| 1986 | 24,843 | 15,527 | 18,076 | 51,214 |
| 1987 | 31,986 | 15,993 | 24,843 | 65,213 |
| 1988 | 32,894 | 16,448 | 25,589 | 73,568 |
| 1989 | 33,867 | 16,448 | 26,315 | 75,657 |
| 1990 | 34,913 | 16,934 | 27,094 | 77,895 |
| 1991 | 34,913 | 17,456 | 27,930 | 80,299 |
| 1992 | 35,876 | 17,938 | 28,701 | 82,515 |
| 1993 | 36,797 | 18,398 | 29,437 | 84,632 |
| 1994 | 37,742 | 18,871 | 30,194 | 86,807 |
| | <u>38,694</u> | <u>19,346</u> | <u>30,955</u> | <u>88,995</u> |
| | 337,269 | 180,728 | 277,889 | 795,886 |

1/ Figures in Table 13 converted into 1978 U.S. dollars at the average exchange rate that prevailed in 1978, estimated at US\$1.00 = J\$1.533.

Columns 3, 4 and 5 show the reduction in waste, the increase in production¹ and the reduction in distribution costs, respectively, all obtained by applying to the marketing production figures in column 2 the assumptions stated in Table 11. For example, in 1986, it was assumed that waste would be reduced by 8 percent (equal to J\$38.1 million), production would be increased by 5 percent (equal to J\$23.8 million) and distribution costs would be reduced by 8 percent (J\$38.1 million). Thus, total gross benefits in 1986 amount to J\$100 million (column 6). Note that this projection is in thousands of constant 1978 Jamaican dollars. In table 13 these figures are converted into constant 1978 U.S. dollars at the average 1978 exchange rate of US\$1 = J\$1.533.

3. The Costs

Costs are divided into two categories: the start-up costs over the Project implementation period (1980-84) and the recurrent costs over the whole projection period, 1980-94. The start-up costs consist of land acquisition, construction and equipment, refrigerated trucks and vehicles, technical assistance, training and training supplies. The start-up costs, presented in Table 15, represent the consolidated costs of the three major components of the Project: the MOA's new Marketing Division, the four Subterminal Wholesale Distribution Markets and the 25 Assembly and Grading Stations.

The recurrent costs are projected in Table 16. The projection after 1984 includes the addition of a maintenance allowance of US\$100,000 per annum for the four Markets (\$25,000 for each) and another \$100,000 for the 25 Stations (\$4,000 for each). All other operating costs were projected to increase by 5 percent annually in real terms to allow for expansion. Extra allowances were included for the Markets in 1986 to allow for the purchase of eight new refrigerated trucks and to replace the original trucking fleet in 1989 and 1992. The operating costs in the Economic Analysis differ from those in the Budget Summary and in the Financial Analysis because the operating revenues (cash receipts) of the Markets and of the Stations were not deducted from costs in the Economic Analysis to avoid double counting the benefits.

4. Benefit-Cost Calculation

The benefit-cost calculation is presented in Table 17. The benefit figures in column 1 are carried over from Table 14 (column 4), while those in column 3 were derived by summing the costs figures in Tables 15 and 16. The benefits and costs were discounted at an annual rate of 11 percent which is the current commercial bank prime lending rate. Note that this discount rate is actually very high since the whole analysis is in

¹ After allowance for increased costs related to the increase in production.

Table 15
Consolidated Start-Up Costs
(1978 US\$ 000)

| <u>Year</u> | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--------------|--|---|---------------------------------|--|-----------------------------------|--|--------------|
| | <u>Construction Equipment and Land Acquisition</u> | <u>Refrigerated Trucks and Vehicles</u> | <u>Technical Assistance</u> | <u>Training, Training Supplies & Misc. Equip- ment</u> | <u>Total (1) thru (5)</u> | <u>Allowance for Contin- gency & Inflation</u> | <u>Total</u> |
| 1980 | 530 | 50 | 660 | 46 | 1286 | 64 | 1350 |
| 1981 | 4145 | 510 | 648 | 182 | 5485 | 823 | 6308 |
| 1982 | 2630 | 450 | 704 | 211 | 3995 | 1039 | 5034 |
| 1983 | 1695 | - | 642 | 55 | 2392 | 911 | 3303 |
| 1984 | 200 | - | 512 | 14 | 726 | 373 | 1099 |
| Total | 9200 | 1010 | 3166 | 508 <u>1/</u> | 13,884 | 3210 | 17,094 |

1/ Total training costs during the 1980-84 period are actually US\$608,000 (instead of \$508,000). We assumed that US\$100,000 financed by the GOJ are recurrent costs which will be continued after the start-up period and have, therefore, treated these as recurrent costs charged to the Recurrent Budget in Table 15 of this analysis.

Table 16
Recurrent Costs
(1978 U.S. \$000)

| <u>Year</u> | <u>Marketing Division</u> 2/ | <u>Wholesale Distribution Markets</u> 2 / | <u>Assembly & Grading Stations</u> 4/ | <u>Total</u> |
|-------------|------------------------------|---|---|--------------|
| 1980 | 321 | - | | |
| 1981 | 578 | - | 61 | 382 |
| 1982 | 606 | | 326 | 904 |
| 1983 | 624 | 263 | 801 | 1670 |
| 1984 | 641 | 487 | 1060 | 2171 |
| | | 503 | 1209 | 2353 |
| 1985 | 673 | 628 | | |
| 1986 | 707 | 655+600 | 1369 | 2670 |
| 1987 | 742 | 682 | 1433 | 3395 |
| 1988 | 779 | 711 | 1500 | 2924 |
| 1989 | 818 | 742+450 | 1570 | 3060 |
| | | | 1643 | 3653 |
| 1990 | 859 | 774 | | |
| 1991 | 902 | 808 | 1720 | 3353 |
| 1992 | 947 | 843+450 | 1801 | 3511 |
| 1993 | 994 | 880 | 1886 | 4126 |
| 1994 | 1044 | 919 | 1976 | 3850 |
| | | | 2069 | 4032 |

1/ Includes operating costs only. Excludes cash receipts of the Markets and Stations, as well as any allowance for inflation as all figures are in constant 1978 U.S. dollars. For these reasons, the figures in the above table differ slightly from those in the Budget Summary and in the Financial Analysis.

2/ For 1985-94, operating costs of the Marketing Division were assumed to rise by 5% a year in real terms (in constant U.S. dollars) to cover expansion of staff and increase in real salaries.

3/ For 1985-94, operating costs of the Markets were assumed to rise by 5% a year in real terms to cover expansion of operations. An additional US\$100,000 a year was added for maintenance. In 1986, US\$600,000 was provided for the purchase of 8 new refrigerated trucks. US\$450,000 was added in 1989 and again in 1992 to cover replacement of the fleet of refrigerated trucks acquired during the project implementation period.

4/ For 1985-94 operating costs of the Stations were projected to rise by 5% annually in real terms. In addition, an annual allowance of US\$100,000 (for all) was made to cover maintenance costs.

terms of constant 1978 U.S. dollars. The discount rate is thus in real terms, and so makes a substantial allowance for the risk element. The year 1980 was taken as the base year for the benefit-cost calculation, with discounting starting in 1981.

Total projection benefits discounted at 11 percent a year through 1994 total US\$305 million¹ (column 2 of Table 17), while the sum of the discounted costs amounts to US\$32.9 million¹ (column 4), yielding a very impressive benefit-cost ratio of 9.27. Note that the cutoff of the calculation in 1994 is quite arbitrary. Had it been extended by another five to ten years, the B/C ratio would have been substantially higher.

The sum of the net discounted benefits (column 5) or the Project's net present value comes to US\$272 million. This figure indicates that the Project would return that amount over and above the full amount of the initial investment plus a real rate of return of 11 percent a year. The internal rate of return is 84 percent.

The projected benefits are so large that the analysis could withstand any reasonable sensitivity test. Thus, if it were assumed that the projected annual benefits were only half as large as those shown in column 2 while the annual costs remained the same, the benefit-cost ratio would still amount to 4.6. Alternatively, if we abstracted from the projected reduction in distribution costs and calculated our benefits solely on the basis of the reduction in waste and the increase in production, the B/C ratio would still be a very impressive 6.0.

5. Impact on Foreign Exchange Budget

By reducing waste and increasing production, the Project will have a significant impact on the availability of foreign exchange, either by reducing the need for food imports and/or by providing for increased exports.

As illustrated by the data in Table 18, Jamaica is a substantial food importer. Its food imports have risen significantly since 1971--from US\$92 million to almost US\$170 million in 1978. Of this amount, we estimate that 17 percent, or US\$28 million, consists of fresh vegetables, legumes, fruits, fish, poultry and meats that could be substituted by domestic production moving through the marketing system.

If Jamaica's food import requirements over 1979-94 are projected to increase at the same rate as population (i.e., 1.4 percent) in lieu of the historical rate of 9.1 percent that prevailed over 1971-79, food imports would reach US\$212 million in 1994.¹ This is several times the magnitude of

¹In terms of constant 1978 U.S. dollars.

-66-
Table 17

Benefit-Cost Analysis
(1978 US\$000)

| Year | (1) Projected Annual Benefits 1/ Undiscounted | (2) Discounted @ 11% per annum (beg. in '80) | (3) Projected Annual Costs 2 / Undiscounted | (4) Discounted 11% per Annum (beg. in 80) | (5) Net Discounted 3 / Benefits (Col. (2)-(4)) |
|---------------------|---|---|---|---|---|
| 1980 0 | - | - | 1,732 | 1,732 | - 1,732 |
| 1981 1 | - | - | 7,212 | 6,497 | - 6,497 |
| 1982 2 | - | - | 6,704 | 5,441 | - 5,441 |
| 1983 3 | 2,826 | 2,066 | 5,474 | 4,003 | - 1,937 |
| 1984 4 | 26,265 | 17,302 | 3,452 | 2,274 | 15,028 |
| 1985 5 | 51,214 | 30,393 | 2,670 | 1,585 | 28,808 |
| 1986 6 | 65,213 | 34,866 | 3,395 | 1,815 | 33,051 |
| 1987 7 | 73,568 | 35,435 | 2,924 | 1,408 | 34,027 |
| 1988 8 | 75,657 | 32,830 | 3,060 | 1,328 | 31,502 |
| 1989 9 | 77,895 | 30,451 | 3,653 | 1,428 | 29,023 |
| 1990 10 | 80,299 | 28,280 | 3,353 | 1,181 | 27,099 |
| 1991 11 | 82,515 | 26,181 | 3,511 | 1,114 | 25,067 |
| 1992 12 | 84,632 | 24,191 | 4,126 | 1,179 | 23,012 |
| 1993 13 | 86,807 | 22,354 | 3,850 | 991 | 21,363 |
| 1994 14 | 88,995 | 20,646 | 4,032 | 935 | 19,711 |
| Total | | | | | |
| 1980-94 | | <u>304,995</u> | | <u>32,911</u> | <u>272,084</u> |
| Benefit-Cost Ratio: | | $\frac{304,995}{32,911} = 9.27$ | | | |

1/ From Table 13

2/ Includes both start-up and operating costs (summation of figures in Tables 15 & 16). These cost figures differ from those in the budget summary and in the financial analysis because the cash receipts of the Markets and Stations were not deducted from costs in the Economic Analysis to avoid any double counting of the benefits. The discounting process (at 11% p.a.) starts with the year 1981. The 1980 was chosen as the base year for the calculation.

3/ Discounted benefits less discounted costs (column minus 4).

Table 18

Food Imports, 1971-78
and Projected to 1994^{1/}

| <u>Actual</u> | | <u>Projected</u> | |
|-------------------|-------|-------------------------|-------|
| (Million of US\$) | | (Millions of 1978 US\$) | |
| 1971 | 91.9 | 1980 | 174.3 |
| 1972 | 108.3 | 1985 | 186.8 |
| 1973 | 126.9 | 1990 | 200.3 |
| 1974 | 192.7 | 1994 | 211.7 |
| 1975 | 196.2 | | |
| 1976 | 183.0 | | |
| 1977 | 126.9 | | |
| 1978 | 169.5 | | |

^{1/} Source for food imports 1971-78: Ministry of Finance Statistics Division.

the combined waste reduction and production increase projected to result from the Project. Thus, it is most likely that most of the increased food availability resulting from the Project will readily find a market in Jamaica, and will serve to reduce Jamaica's dependence on food imports. The extent of this reduction will depend, in large part, on the extent to which increased domestic food production is substitutable for imports, the price and income elasticity of demand for food and the priority that the authorities give to food imports versus other uses of foreign exchange.¹ Column 1 of Table 19 shows the combined increase in production and the reduction in waste expected from the Project (summation of columns 1 and 2 of Table 14). If we assume that the reduction in food imports will be equal to only half this amount (with the remaining 50 percent available for increased consumption), the resulting saving in foreign exchange would amount to US\$259 million over the period 1983-94 or an average of about US\$22 million per year.

6. Distribution of Benefits

The above analysis suggests that the social benefits from the Project are likely to be substantial. But are they likely to be broadly distributed among farmers, consumers, and intermediaries? The benefits to each of these groups will be analyzed in turn.

Benefits to Farmers and Consumers: Farmers stand to gain as a result of the reduction in waste, the increase in production, and the reduction in distribution costs. We have noted that these are the major sources of the benefits expected from the Project, accounting, respectively, for 42 percent, 23 percent and 35 percent of the total gross benefits of nearly US\$800 million² expected to accrue over the twelve year period 1983-94 (Table 14).

The benefits derived by the farmer from reduced waste, increase in production and improvement in the quality of his product require little elaboration. Farmers would fail to realize those benefits only if the market demand schedule for their products remained fixed over time, and if in addition, farm output could not be substituted for imports so that producers would be forced to move down an inelastic demand curve. However, these conditions are extremely unlikely to prevail since (a) Jamaica is importing substantial amounts of foodstuffs, some of which can be grown domestically; (b) demand for foodstuffs is most likely to expand over time, given the increase in population; and (c) serious shortages of basic foodstuffs have plagued Jamaica's major urban centers since 1976 and are continuing to do so.

¹ Assuming that a foreign exchange control system remains in force.

² In terms of constant 1978 U.S. dollars.

Table 19
Estimated Foreign Exchange Savings
Through Import Substitution

(Millions of 1978 U.S. \$)

| | (1) | (2) |
|---------------|---|--|
| | <u>Assumed Increase in Production</u> <u>and Reduction in Waste as a</u> <u>Result of Project</u> | <u>Assumed Foreign</u> <u>Exchange Savings</u> <u>(50% of Col. 1</u> |
| 1980 | - | - |
| 1981 | - | - |
| 1982 | - | - |
| 1983 | 2.8 | 1.4 |
| 1984 | 17.5 | 8.8 |
| 1985 | 33.2 | 16.6 |
| 1986 | 40.1 | 20.0 |
| 1987 | 48.0 | 24.0 |
| 1988 | 49.3 | 24.7 |
| 1989 | 50.9 | 25.4 |
| 1990 | 52.4 | 26.2 |
| 1991 | 53.8 | 26.9 |
| 1992 | 55.2 | 27.6 |
| 1993 | 56.6 | 28.3 |
| 1994 | 58.0 | 29.0 |
| Total 1980-94 | <hr/> 517.7 | <hr/> 258.9 |

Farmers will also benefit from reduced distribution costs. These should result in lower prices to consumers and in a higher sales volume and net return to farmers. The reduction in distribution costs could also mean increased farmgate prices as farmers will receive the benefit from higher quality output and from reduced spoilage of produce in transit.

The benefits to consumers need little elaboration: the substantial reduction in waste that is expected, along with the increase in production resulting from strengthened incentives to farmers, should induce an increased volume of production reaching urban markets. There should also be some improvement in the quality of the produce.

Impact on Intermediaries: We shall discuss the Project's impact on three categories of intermediaries: wholesalers, small wholesalers or "country higglers" and retailers. The latter consist of supermarkets and greengrocers as well as small retailers (or higglers) operating out of the parish and street markets.

Wholesalers will be able to rent stalls in the new Subterminal Wholesale Distribution Markets that will be built. They will have cold storage facilities and a place to receive, assemble and distribute a larger volume of produce. They will also be able to receive or ship produce in larger volumes and thus benefit from lower unit costs.

"Country higglers" or small wholesalers are people who perform the function of carrying the farm produce from the farm to the nearest market or station or collection point where it is loaded onto trucks for shipment to markets. To the extent that these higglers are operating in an area where an Assembly and Grading Station has been established, these higglers will benefit from a lower cost and better price for their product, selling a larger volume and traveling a shorter distance.

Retailers, both large (supermarkets and greengrocers) and small (higglers operating out of parish or street markets) are expected to benefit from access both to a wider selection and larger volume of produce all in one place. Supermarkets, restaurants and hotels, will have assurance of continuity and quality of supply. This assurance of continuity will enable retailers, particularly those catering to tourists, to substitute domestic produce for imported supplies, thus stimulating domestic production and contributing to savings in foreign exchange, while ensuring a larger and steadier volume of sales to the intermediaries.

While intermediaries as a group are expected to benefit from the Project, there may be those that may be adversely affected. As in any modernization process, some displacement of labor may be expected to occur among "country higglers." However, this displacement effect is not expected to be major as it will be mitigated by the following circumstances:

(a) the displacement is not expected to be drastic as higglers will still collect and carry the produce from the farm to the nearest market or Assembly and Grading Stations; (b) the improvement of the marketing structure will be gradual and spread over a number of years; (c) many of the displaced higglers will be absorbed in the new system, e.g., at the Assembly and Grading Stations, at the new Subterminal Wholesale Distribution Markets or as employees in the restructured marketing system.

7. Interpretation of Results

The benefit-cost analysis shows that if the national level of agricultural production can be taken as base in estimating the impact of the Project on waste, increase in output and reduction in distribution costs, the benefits derived from the Project then become a substantial multiple of Project costs. For the Project to have no impact on waste, output or distribution margins, it would be necessary to assume either that waste, spoilage and market outlets are not a problem in Jamaica, or that the expected benefits to the Project will not materialize because other significant bottlenecks are not being removed.

The first assumption is clearly contrary to fact. The seriousness of the marketing problem in its various manifestations was described in some detail earlier in this loan paper. The prevalence of a substantial amount of waste was confirmed by the 1976 FAO report in support of the IDB Parish Markets Project which conservatively estimated meat losses at 31 percent, and fruit and vegetable losses at 25 percent.

The second possibility--that key bottlenecks in other areas may prevent the anticipated Project benefits from materializing--may have to be taken more seriously. However, GOJ agricultural planners are well aware of the need to deal with the country's agricultural problems by means of an integrated program, and have spelled out such a program in their Five Year Agricultural Development Plan. Several elements of this plan are underway. These include Project Land Lease (leasing public lands to small farmers), Pioneer Farms (settlement of young workers on farms), provision of agricultural credit through the Jamaica Development Bank, land irrigation, reclamation and terracing schemes, etc. Several projects currently under implementation are benefiting from a substantial amount of international agency financing. It is clear that this Project is part of a broad program to develop Jamaica's agricultural resources and that it is unlikely to fail owing to the presence of major obstacles in other areas that are not being addressed.

8. Conclusion

This analysis indicates that there is a strong justification for the Project. Its benefit-cost ratio is extremely favorable, and it is likely to effect a significant saving in foreign exchange. Failure to undertake it would dilute the benefits of other aspects of the agricultural development program. On the other hand, the impact on production and foreign exchange savings of the overall agricultural program jointly implemented and financed by the GOJ, the IFIs and AID is almost certain to be a multiple of the impact estimated here from this particular project. The benefits of the Project are apt to be broadly distributed, encompassing farmers, consumers and intermediaries as a group. While some higglers may be displaced, this effect is not expected to be major as the restructuring of the marketing system will be spread over a period of years and some of the displaced people are likely to find employment in the newly established marketing institutions.

D. Financial Analysis and Plan

The economic analysis has established that substantial benefits can be expected from this Project even on the basis of conservative assumptions, and that farmers, consumers and intermediaries can all be expected to benefit from the Project. This section will examine whether the GOJ can be expected to bear the financial costs of the Project, and whether the Subterminal Wholesale Distribution Markets and Assembly and Grading Stations can be expected to process a sufficient volume of produce to meet their cost of operation.

1. Ability of GOJ to Meet Operating Costs of the Project

It is assumed that only the operating costs of the Agricultural Marketing Division of the Ministry of Agriculture will have to be met out of the GOJ budget. The Markets and the Stations are expected to be charging rates and to process a volume of produce sufficient to cover their costs. In the following section, the reasonableness of this latter assumption will be explored in detail.

The total Central Government's budget (recurrent and capital) and that of the Ministry of Agriculture for the period 1975 through 1980 is presented in Table 20. The budget has been reduced by the amount of debt servicing to determine the funds available for expenditures in support of the Project in normal Government activities.

In order to estimate the impact of the required recurrent expenditures associated with the Project, these costs will be compared with the total GOJ budget and with the budget of the MOA (net of debt servicing) for 1979-80. This comparison assumes that the budget will not increase in real terms, which is admittedly unrealistic. However, correction for this factor would not alter the results significantly. The recurrent costs associated with the Project are summarized in Table 21.

The calculation at the bottom of Table 21 indicates that the projected recurrent expenditures¹ of the Marketing Division of the MOA as a result of this Project are not expected to impose a significant charge on the GOJ budget. It will increase their annual recurrent budget by only J\$1.0 million, which constitutes .08 percent of the net² overall 1979/80 GOJ budget and 1.32 percent of the budget of the Ministry of Agriculture.

¹ The costs of the Marketing Division staff currently on the MOA payroll were netted out. Only recurrent costs are included in the calculation. The calculation also assumes that the Markets and Stations will cover their operating costs.

² Total GOJ budget less debt service charges.

Table 20
Central Government Budget
(J\$ Million)

| <u>Year</u> | (1) | (2) | (3) | (4) |
|-------------|-------------------------------|--------------------------|----------------------|----------------------|
| | GOJ Total <u>Budget</u> | Debt <u>Servicing</u> | Net <u>Budget</u> | MOA <u>Budget</u> |
| 1975-76 | 975.8 | 123.7 | 852.1 | 63.6 |
| 1976-77 | 1306.8 | 241.7 | 1065.1 | 100.4 |
| 1977-78 | 1231.0 | 203.3 | 1027.7 | 99.6 |
| 1978-79 | 1816.7 | 380.2 | 1436.5 | 127.0 |
| 1979-80 | 1760.3 | 395.2 | 1365.1 | 78.4 |

Table 21
Project Recurrent Costs in 1985
(1978 US\$) ^{1/}

| | |
|--|------------------------|
| Total Annual Recurrent Costs | 2,670,00 ^{2/} |
| Less: Revenue Wholesale Dist. Mkts. | 628,000 ^{3/} |
| Less: Revenue Assembly and Grading Stations | <u>1,369,000</u> |
| Net Additional Expenditures | US\$ 673,000 |
| | or |
| | J\$1,031,709 |
| Percent of GOJ Budget | .08% |
| Percent of MOA Budget | 1.32% |

^{1/} At US\$1 = J\$1.533

^{2/} From Table 16

^{3/} Assumes that revenues will be equal to the recurrent costs projected in Table 5.

Aug. 22

Distribution of Total Cost by Types and Storage Area
Standard Warehouse Design

(In Sq. Ft. and U.S. \$)

| Description | Area of Buildings | | Use- ful Life | Total Cost | Build- ing Cost | Equip. and Fin- ish | Gen'l Prov- ision Cost | Farmers Bldg. | Heat and Fish Storage | Fruit and Veg. Storage | Venters Offices | Trucks |
|----------------------------|-------------------|---------------------|---------------------|----------------|--------------------|---------------------------|---------------------------------|------------------|-----------------------------|------------------------------|--------------------|--------------|
| | Total Sq. Ft. | Rentable Sq. Ft. | | | | | | | | | | |
| Buildings | | | | | | | | | | | | |
| Fruit and Veg. Bldg. | 16000 | 9000 | 40 | 160000 | 160000 | | | | | | | |
| Heat and Fish Bldg. | 10000 | 6000 | 40 | 100000 | | 20000 | | | | | | |
| General Provisional Bldg. | 2000 | 1500 | 40 | 40000 | | | 30000 | | | | | |
| Farmers Bldg. | 2500 | 1500 | 30 | 12500 | | | | 12500 | | | | |
| Heat Storage | 1500 | 1200 | 20 | 84000 | | | | | 84000 | | | |
| Fruit and Veg. Storage | 4000 | 3000 | 20 | 160000 | | | | | | 160000 | | |
| Venters Offices | 1500 | 3000 | 20 | 60000 | | | | | | | 60000 | |
| Venters block | 1440 | - | 30 | 42000 | 15420 | 10,86 | 2571 | 2571 | 2057 | 5143 | 5143 | |
| General Admin. | 1500 | - | 30 | 39000 | 10714 | 7193 | 1786 | 1786 | 1429 | 3571 | 3571 | |
| Maint. block | 1800 | - | 30 | 54000 | 12150 | 8100 | 2025 | 2025 | 10900 | 4050 | 4050 | 10900 |
| General Cont. | - | - | - | 94180 | 33036 | 22474 | 5009 | 5606 | 4684 | 11212 | 11212 | - |
| Sub Total | 43740 | 25200 | | 1015880 | 231929 | 347953 | 41908 | 24088 | 102770 | 191070 | 64070 | 10900 |
| Equipment | | | | | | | | | | | | |
| Generator | | | 10 | 100000 | 18750 | 12500 | 3125 | 3125 | 50000 | 6250 | 6250 | |
| Truck scale, other | | | 20 | 248000 | 103478 | 68905 | 17246 | - | 13798 | 34493 | - | |
| Sub Total | | | | 348000 | 122228 | 81405 | 20371 | 3125 | 63798 | 40743 | 6250 | |
| Grand total ✓ | | | | 1373880 | 354157 | 429358 | 62279 | 27213 | 166568 | 231713 | 70226 | 10800 |
| Annual Depreciation | | | | | | | | | | | | |
| Buildings | | 20/30 | | 39442 | 7731 | 11598 | 1400 | 816 | 5139 | 9599 | 2799 | 360 |
| Equipment | | 10/20 | | 21900 | 7049 | 4690 | 1175 | 312 | 5690 | 2350 | 625 | - |

Does not include the following costs which will not be used to arrive at rental fees: Site development \$282,510, A/E \$150,572 and land \$82,000.

Table 21
Subterminal Wholesale Distribution Markets
Annual Operating Expenses
(US \$1000)

| | Fruit and Veg. Mkt. | Meat and Fish Mkt. | Gen'l Provisions Mkt. | Farmers Mkt. | Meat Storage | Fruit and Veg. Storage | Vendors Offices | Vehicles | Total |
|--------------------------------|------------------------|-----------------------|--------------------------|-----------------|-----------------|---------------------------|--------------------|----------------------|--------------|
| <u>Operating Expense</u> | | | | | | | | | |
| Admin. staff & labor | 21.4 | 14.3 | 3.6 | 3.6 | 5.7 | 14.3 | 7.1 | 27.0 | 97.0 |
| Utilities, telephone and Misc. | 2.0 | 1.3 | .3 | .4 | 4.0 | 1.0 | 1.0 | - | 10.0 |
| Vehicle fuel and Maint. | - | - | - | - | - | - | - | 12.5 | 12.5 |
| Maintenance (bldg. and equip.) | 5.3 | 3.6 | .9 | .9 | 10.0 | 2.5 | 1.8 | - | 25.0 |
| <u>Total cash</u> | <u>28.7</u> | <u>19.2</u> | <u>4.8</u> | <u>4.9</u> | <u>19.7</u> | <u>17.8</u> | <u>9.9</u> | <u>39.5</u> | <u>144.5</u> |
| Depreciation - buildings | 7.7 | 11.6 | 1.4 | .8 | 5.1 | 9.6 | 2.8 | .4 | 39.4 |
| - equipment | 7.0 | 4.7 | 1.2 | .3 | 5.7 | 2.4 | .6 | - | 21.9 |
| - vehicles | - | - | - | - | - | - | - | 45.0 | 45.0 |
| <u>Total</u> | <u>43.4</u> | <u>35.5</u> | <u>7.4</u> | <u>6.0</u> | <u>30.5</u> | <u>29.8</u> | <u>13.3</u> | <u>84.9</u> | <u>250.8</u> |
| Contingency 5% | 2.2 | 1.8 | .4 | .3 | 1.5 | 1.5 | .7 | 4.3 | 12.5 |
| <u>Gross Total</u> | <u>45.6</u> | <u>37.3</u> | <u>7.8</u> | <u>6.3</u> | <u>32.0</u> | <u>31.3</u> | <u>14.0</u> | <u>89.2</u> | <u>263.3</u> |
| Cost/eq. ft. | 5.07 | 6.22 | 5.20 | 4.20 | 26.67 | 10.43 | 4.67 | 11.91 ^{1/2} | |

^{1/2} per hour basis - assumed 260 days/yr., 16 hours/day, 60% usage, 3 trucks

The impact that the Project will have on tax revenues should also be considered. A quick calculation of possible revenue collections can be made on the basis of the benefit-cost analysis in Table 17. In 1985, for example, the total projected annual benefits (undiscounted) were estimated at \$51.2 million and costs at \$2.7 million (in constant 1978 U.S. dollars) yielding net benefits of \$48.5 million or J\$74.3 million. Tax collections over the last three years have varied between 16 and 22 percent of the GDP. If we assume that only 10 percent of the increased income estimated from the Project can be captured by the tax system, tax collections would increase by J\$7.4 million in 1985, which is a substantial multiple of the recurrent costs of the Marketing Division estimated in Table 21.

2. Profitability of Subterminal Wholesale Distribution Markets

The purpose of the following two sections is, first, to estimate the cost of operations of the Markets and of the Stations after they have become fully operational and, second, to estimate the amount of produce that would have to be handled by the facilities for them to break even, i.e., for their revenues to equal operating costs, assuming that rental charges for the use of the facilities bear a fixed percentage to the sales value of the produce. (See Table 22.)

The costs per square foot in Table 23 are the average annual charges which the wholesalers would have to be assessed in order for the revenues to equal operating costs, including depreciation, assuming that the facility is fully utilized. The charges per square foot range from a low of \$4.67 for vendor office space to a high of \$26.67 for meat and fish storage. This significant range was to be expected as the cost of construction and maintenance for a refrigerated area is considerably greater than for simple office or market space.

The question which has to be answered at this point is, given the costs per square foot, what are the expected sales of wholesalers on a square foot basis and what percentage of those sales will the cost for use of the wholesale facility represent. Since this is a new activity in Jamaica, it was not possible to obtain reasonable estimates of either of these two variables. On the basis of studies and experience in other countries, it was determined that the rental charge should be about 2 percent of the value of the produce sold in the wholesale markets.

With the assumption of a 2 percent cost, the annual volume of produce that would have to be sold per square foot ranges from a low of 0.2 tons at the meat and fish market to a high of 1.4 tons at the fruit and vegetable storage facility. The FAO report indicates that facilities of this type generally sell annually between 0.4 tons per square foot in developing countries to 2.4 tons in developed countries. The weighted average 0.7 ton per square foot requirement obtained in Table 24 is near the lower end of this range. This minimum tonnage level should be readily attainable and is, in fact, likely to be exceeded.

In summary, the revenues from the use of the Subterminal Wholesale Distribution Markets will cover operating expenses at a moderate cost to wholesalers.

Table 24

Annual Operating Costs and Sales at Break-even

(US\$ and Tons)

| | (1) | (2) | (3) ^{1/} | (4) | (5) ^{2/} | (6) | (7) ^{3/} |
|--|-------------------|-----------------------------|----------------------------------|----------------------------|---------------------|---------------------------|-------------------|
| | Area of Buildings | Operating Costs per Sq. Ft. | Charge per Sq. Ft. as % of Sales | Required Sales per Sq. Ft. | Avg. Value (\$/ton) | Required Tons per sq. ft. | |
| Market Section | Total | Rent-able | \$ | \$ | \$ | (\$/ton) | Tons |
| Fruit and Vegetable Mkt. | 16000 | 9000 | 5.07 | 2.0 | 254 | 385 | .7 |
| Meat and Fish Mkt. | 10000 | 6000 | 6.22 | 2.0 | 311 | 1460 | .2 |
| Gen'l provisions Mkt. | 2000 | 1500 | 5.20 | 2.0 | 260 | 704 | .4 |
| Farmers Mkt. | 2500 | 1500 | 4.20 | 2.0 | 210 | 385 | .5 |
| Meat Storage | 1500 | 1200 | 26.67 | 2.0 | 1333 | 1460 | .9 |
| Fruit and Veg. Storage | 4000 | 3000 | 10.43 | 2.0 | 522 | 385 | 1.4 |
| Vendors Offices | 3000 | 3000 | 4.67 | 2.0 | - | - | - |
| Weighted average (Excludes Vendors Offices) | | | 6.91 | | 318 | | .7 |

From Table 20

Col 5 = Col 3 ÷ Col. 4

Col. 7 = Col 5 ÷ Col. 6

3. Profitability of Assembly and Grading Stations

Two general designs of the Stations have been prepared. The first will contain a grading and packing building, administrative office space, and limited storage totaling approximately 2250 square feet. The second design provides for a grading and packing building, office and storage space and, in addition, a cold storage facility totaling about 4950 square feet.

Since the size of the facility will depend on many factors, such as location, production, local infrastructure available, etc., this analysis has been undertaken using an average cost of \$59,359 for construction of the facilities and \$9800 for equipment in order to determine the amount of produce which would have to be sold at the "average" Station in order for the revenues to cover the costs of operation including depreciation.

In Table 25 the estimated annual operating expenses for an average Assembly and Grading Station are presented.

Table 25
Assembly and Grading Stations Annual Operating Expenses
(US \$000)

| | <u>Useful Life</u> | <u>Cost</u> |
|---------------------------------------|--------------------|-------------|
| <u>Operating Expenses</u> | | |
| Admin. Staff and Labor | | 16.5 |
| Utilities and Telephone | | 4.4 |
| Materials and Containers | | 16.8 |
| Vehicle-rent, Fuel and Maintenance | | 8.4 |
| Maintenance (Bldg. and Equip.) | | <u>4.0</u> |
| Total | | 50.1 |
| Depreciation - Building ^{1/} | 20 | . |
| - Equipment | 10 | <u>1.0</u> |
| Grand Total | | 54.1 |

1/ Total cost of the 25 stations is US\$1,728,993 of which building costs will total \$1,168,050, equipment \$245,000, site development \$233,610 and contingency (5%) \$82,333.

Unlike the Subterminal Wholesale Distribution Markets, the revenue for the Stations will be generated by an assessment based on the sales value of the product, which we estimate will be a maximum of 5 percent. This charge will cover labor, packing materials, transportation, sales cost, and overhead. It is in line with charges for such services in other countries. Therefore, in order to cover the annual operating expenses of \$54,100, sales should amount to a minimum of \$1,082,000 per Assembly and Grading Station. This will represent approximately 2810 tons of fruits and vegetables, with an average farmgate price of \$385 per ton.

It is anticipated that the Stations will be used by farmers within a radius of approximately five to ten miles of the facility. Although an agricultural survey of the areas in which these facilities will be constructed has not been undertaken, it may be possible to roughly estimate what percentage of the production the required sales represent in an average producing area. Within a circle with a radius of five miles are 50,265 acres. If we assume that fruits and vegetables are cultivated on only 25 percent of this area with a value of production of \$850 per acre,¹ then total annual production would have a value of \$10,681,313 and represent a volume of about 27,740 tons. Therefore, the amount of produce that would be required to utilize a Station to the extent necessary to enable it to attain self-sufficiency would represent only about 10 percent of the total amount of produce raised within a five mile radius. Since the average percentage of production required is low, it is reasonable to assume that the revenue of the Stations will keep pace with operating expenses and that actual utilization will probably exceed the minimum volume requirement.

As the volume handled by the Stations increases, charges per unit handled can be reduced. After the break-even point of 2810 tons per annum is exceeded, it may be possible to reduce the rate charged from 5 percent to perhaps 3 percent, thereby encouraging still greater use of the facility.

The grading and packing will be done by hand but facilitated by machines of varying degrees of sophistication. At the break-even point, there will be a substantial amount of excess capacity. It is estimated that the grading and packing equipment to be provided under the Project will have a capacity of about 4.4 tons per hour or of approximately 13,200 tons of product annually, if the equipment is operated 300 days per year, 10 hours per day. We have noted that the amount of produce consistent with the break-even point is only 2810 tons per annum, or 21 percent of the equipment's maximum capacity.

¹ Report of the Agricultural Sector Assessment Team of the Office of International Cooperation and Development of the U.S. Department of Agriculture to USAID/Jamaica and to the Minister of Agriculture of Jamaica, "The Small Farmer in Jamaican Agriculture: An Assessment of Constraints and Opportunities," Kingston, November, 1978, p. 101.

In conclusion, it is reasonable to assume that revenues obtained from the Stations will cover operating expenses since the average percentage of production needed to break even is relatively low in relation to the area's total production, and the machine hours necessary to handle the volume of output at the break-even point are substantially below the equipment's rated capacity. The estimated cost of packing and grading is expected to be offset by gains in the overall product value and decreases in transportation costs.

4. Financial Plan

Tables 26 and 27 present the estimated cost of Phase I and Phase II of the Project by sources and use of funds and the disbursement schedules.

Table 26
Total Project Cost by Phase and Project
Component

(US\$000)

| Use | AID | | GOJ | Total |
|---|--------------|--------------|--------------|---------------|
| | FX | LC | LC | |
| <u>Phase I</u> | | | | |
| 1. <u>Marketing Division</u> | | | | |
| Technical Assistance | 3,166 | -- | | 3,166 |
| Training | 492 | | 100 | 592 |
| Commodities | 126 | -- | -- | 126 |
| Operating Expenses | -- | -- | 2,537 | 2,537 |
| Contingency | 175 | -- | 133 | 308 |
| Inflation Factor | 741 | -- | 656 | 397 |
| Total Phase I | <u>4,700</u> | | <u>3,426</u> | <u>8,126</u> |
| <u>Phase II.</u> | | | | |
| 1. <u>Wholesale Distribution Markets</u> | | | | |
| Construction | 3,200 | 700 | 3,700 | 7,600 |
| Trucks | 900 | -- | -- | 900 |
| Operating Expenses | -- | -- | 705 | 705 |
| 2. <u>Assembly & Grading Stations</u> | | | | |
| Constructions | 900 | 200 | 600 | 1,700 |
| Operating Expenses | -- | -- | 1,587 | 1,587 |
| Sub-total | <u>5,000</u> | <u>900</u> | <u>6,592</u> | <u>12,492</u> |
| Contingency | 264 | 45 | 329 | 624 |
| Inflation Factor | 892 | 164 | 1,366 | 2,412 |
| Total Phase II | <u>6,156</u> | <u>1,113</u> | <u>8,287</u> | <u>15,528</u> |

Table 27
Disbursement Schedule
(US\$000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|-------------------------------|------------|--------------|--------------|--------------|------------|--------------|
| <u>Phase I</u> | | | | | | |
| <u>AID</u> | | | | | | |
| Loan | 756 | 890 | 915 | 697 | 526 | 3,784 |
| Inflation & Contingency | 24 | 119 | 238 | 265 | 270 | 916 |
| Sub-total | <u>780</u> | <u>1,009</u> | <u>1,153</u> | <u>962</u> | <u>796</u> | <u>4,700</u> |
| <u>GOJ</u> | | | | | | |
| Local Funds | 306 | 550 | 577 | 594 | 610 | 2,637 |
| Inflation & Contingency | 15 | 83 | 150 | 227 | 314 | 789 |
| Sub-total - GOJ | <u>321</u> | <u>633</u> | <u>727</u> | <u>821</u> | <u>924</u> | <u>3,426</u> |
| Total - AID + GOJ | 1,101 | 1,642 | 1,880 | 1,783 | 1,720 | 8,126 |
| <u>Phase II (Preliminary)</u> | | | | | | |
| <u>AID</u> | | | | | | |
| Loan | 180 | 2,775 | 1,850 | 975 | 120 | 5,900 |
| Inflation & Contingency | 23 | 434 | 481 | 372 | 62 | 1,369 |
| Sub-total AID | <u>203</u> | <u>3,220</u> | <u>2,331</u> | <u>1,347</u> | <u>182</u> | <u>7,269</u> |
| <u>GOJ</u> | | | | | | |
| Local Funds | 406 | 2,189 | 1,998 | 1,492 | 507 | 6,592 |
| Inflation & Contingency | 21 | 327 | 520 | 568 | 259 | 1,695 |
| Sub-total GOJ | <u>427</u> | <u>2,516</u> | <u>2,518</u> | <u>2,060</u> | <u>766</u> | <u>8,287</u> |
| Total AID + GOJ | 630 | 5,736 | 4,849 | 3,407 | 948 | 15,556 |

E. Social Soundness Analysis¹

1. Overview

Although the traditional agricultural marketing system in Jamaica, namely a large number of small scale market intermediaries (higglers) who purchase at the farmgate and retail at parish markets, remains dominant, it was found that important changes are taking place. For example, a growing number of large wholesalers, with considerable resources, handling large volumes, has begun a system of forward contracting in response to the demand for large volumes of food by institutions and hotels.

It was also found that farmers and intermediaries are dissatisfied with the present system. Farmers' main complaints were that: they produce larger quantities than small higglers can handle; they suffer losses from spoilage of reaped and unreaped produce; and, farmgate prices are low in relation to costs of farm inputs.

Intermediaries identified high transportation costs, poor physical conditions in the market, and seasonality of produce as problems affecting them.

The Agricultural Marketing Project addresses problems identified as constraints by both small farmers and market intermediaries: namely, produce availability, quality, distribution and poor physical facilities at the market.

2. Description of Target Groups

a. Farmers

In Jamaica, 176,263 farmers, or 88 percent of all farmers, are on farms of one to ten acres. The 1978 Agricultural Sector Study showed that a high proportion of these small farmers are involved in commercial agriculture, and produce most of the country's domestic food crops. There is little crop specialization on small farms, as farmers diversify land-use by mixed-cropping to ensure a steady cash income year round. By and large, tradition rather than market demand dictates the farmer's choice of crops.

The majority of farmers do not now perceive marketing as part of their occupational role; they have limited knowledge of appropriate harvesting techniques, product differentiation and packing. The principal reason is that marketing has been the responsibility of female household members since the pre-emancipation era, when slaves exchanged provisions at Sunday markets. As a consequence, the higgler is given the responsibility of marketing produce, with the farmer playing a passive role. Farmers

¹ This section summarizes a sociological study of the marketing system conducted by Jamaican sociologist Ms. Carleen Gardner. The data for the analysis were compiled from an in depth literature search and extensive surveys and personal visits with market intermediaries, small farmers and consumers.

place high value on the services of the higgler, who, in addition to marketing produce, assists with reaping, purchases on the farm, and is regular and accessible. The majority of farmers sell to higglers. In fact, a survey of nine communities in eastern Jamaica found that for all crops, excluding coffee which is grown for export, the higgler was the most frequently reported first-handler.

This investigation found that between higglers and small farmers there exists kinship and locality ties, a high degree of economic cooperation, a level of trust and sharing of basic social institutions, and that income from higgling makes an important contribution to small farm households.

b. Market Intermediaries

The Higgler Survey, conducted by the Ministry of Agriculture in 1977, found that 80 percent of the domestic food is marketed by higglers. The number of higglers at that time was estimated to be approximately 14,000; however, because of rising unemployment in other sectors, the number today may be as high as 20,000.

The majority of higglers are rural residents of which 83 percent are women of low socio-economic level with less than six years of primary education. They purchase from farms in their own locality and supply produce from their own farm. The business operation of the "country higgler" is characterized by small weekly cash outlay, poor accounting practices and low profits. The average weekly net profit is J\$26, and 78 percent purchase less than J\$100 of produce. They perceive their business as risky and perform a number of functions to guard against risk, such as trading in fixed quantities of specific items with established customers, selling scarce items along with low demand items (a system called "marrying"), and waiting in the market for up to three days, if necessary, to get a desired price for their produce.

c. Consumers

Income distribution data indicate that 67.5 percent of wage earners have a weekly income of under J\$50. The only available expenditure data, for 1972, indicated that 40.6 percent of income goes for food. With the escalation of food prices since 1972, it is now estimated by the Nutrition Advisory Council that 70 to 80 percent of the income of the lowest income groups goes for food. Rising food prices have had serious effects on the nutritional status of low income groups. The Nutrition Advisory Council also points out that food unavailability is a contributing factor to malnutrition. Consequently, malnutrition is most severe in sugar producing areas and urban slums where little produce is grown and food is therefore directly related to the efficiency of the marketing system.

3. Role of Women

In addition to predominating as market intermediaries, women also play an important role in agricultural production--28.6 percent of the labor force in agriculture is female. In commerce, women comprise 77 percent in the self-employed and independent categories.

Female participation in farmers' decision making is extensive, and they take an active leadership in formal social organizations.

Unemployment among women is a significant problem; 34.6 percent of the female labor force is unemployed as compared to 14.6 percent of the male labor force. Additionally, incomes of women are lower than that of males; 12.1 percent of males are in the lowest income group (under J\$20), while 18.6 percent of females fall in this category.

The female role in agricultural marketing is significant, from both the economic and cultural point of view. In rural areas, the higgler role provides economic independence for women, but also gives status and control over family resources. Urban women who trade in agricultural produce enter this occupation because of lack of alternatives and job skills.

4. Impact on Higglers

The Agricultural Marketing Project will make the marketing system more efficient and more responsive to the needs and demands of farmers, intermediaries and consumers. Over time, the effect of increased efficiency will be to decrease the number of part-time and marginal higglers. In the first few years of the Project, however, it is expected that the number of higglers affected will be very small. They will continue to serve the function of transporting produce from the farmgate to the Assembly and Grading Stations. In fact, higgling may, for many, become a full-time job as the early part of the week can be spent collecting produce and selling it to the Assembly and Grading Stations and the latter part of the week can be spent in purchasing quantities of graded produce from the Stations and taking them to market.

As the new system begins to function and more produce is purchased in larger quantities by large volume wholesalers, there will be less produce available for the small higgler, and some of them will not be able to compete. However, alternative forms of employment for higglers will be generated through the Project. Each of the 25 Assembly and Grading Stations will provide employment in addition to regular staff for up to 20 persons part-time from the area. The Subterminal Wholesale Distribution Markets will provide similar employment opportunities over and above regular staff for approximately 100 higglers at each facility.

In addition, there are approximately 126 agricultural processing plants in Jamaica, most built by the Government, which are not being

utilized to capacity because of a lack of volume produce for processing. The Project will make it possible for these facilities to purchase the type and quantity of produce they require, and their revitalization will create additional job opportunities for higglers.

Higglers who now operate out of urban centers, such as Kingston, Montego Bay and Ocho Rios, will find their task of collecting produce much simpler. Instead of traveling from farm to farm, they will now be able to go directly to the Assembly and Grading Stations or the Subterminal Wholesale Distribution Markets and purchase the grade and quantity of produce they desire in one stop.

The Project will have a net positive effect on the condition of rural women. It will do this by providing additional and alternative employment opportunities close to home, and by making the acquisition of high quality produce easier, thereby enabling them to earn more. It will also provide good physical conditions in Markets where higglers can purchase produce more regularly and in larger volume.

5. Extension Strategy

The extension strategy of the MOA in relation to the Project will be keyed to overcoming the following socio-cultural constraints to Project implementation:

- (a) the small farmer now depends on the higgler to perform his marketing functions, and consequently excludes marketing from his perception of his occupational role;
- (b) the farmer and higgler have strong kinship and locality ties, share social institutions, and engage in economic cooperation; and,
- (c) the gradual reduction in demand for higglers' services resulting from the activities of the collection center will make it increasingly difficult for marginal higglers to continue to operate.

Extension agents will be provided training in social structure and methods of social organization which will equip them with the necessary skills to deal with communities rather than farmers exclusively. In addition, prior to Project implementation in any particular area, a study will be conducted to provide detailed information of the extent of higglering activities, numbers of households dependent on income from higglering, extent of kinship bond and institution sharing between higglers and farmers and the type and relative influence of social organizations, formal and informal leaders. Based upon the results of this study, strategies for Project implementation will be developed for each area.

The Data Bank and Evaluation Unit of the MOA, which is receiving support through the Agricultural Planning Project, will assist the Marketing Division to conduct this survey. Short term consultants may be drawn upon in this work.

The first criteria for selection of the location of an Assembly and Grading Station should be of a technical nature--for example, location in major producing area with linkage to wholesale and retail markets and an adequate transportation infrastructure.

After technical considerations have been satisfied for a number of alternative sites, specific site selection will be made based on the degree of local interest and receptivity. Extension techniques and detailed implementation plans will then be developed which are site specific. These techniques and detailed plans will utilize the results of the area study to identify the exact location of the Stations, to develop appropriate training plans and to formulate a public awareness campaign.

6. Socio-Cultural Feasibility

This analysis concludes that the Project is socially feasible in that it will provide benefits which meet the recognized needs of the target groups. The Project will not require radical changes in farmers' practices, but it will provide incentives for farmers to improve their marketing functions. More importantly, the Project will not attempt to disrupt the traditional system of higglering, and will offer alternative occupations for women. It will provide facilities and information to local level market intermediaries to assist them to participate in a much needed revitalization of the marketing structure.

IV. IMPLEMENTATION PLAN

A. Implementation Arrangements and Schedule

The MOA will be the implementing agency of the Project for the GOJ. Cooperating agencies will be the Agricultural Projects Research Unit (ARPU) of the Ministry of Works and the Ministry of Local Government (MLG). The ARPU has been seconded to the MOA to assist in the planning and implementation of externally funded projects with large construction components. It is responsible for developing plans, blueprints, site testing, preparing construction specifications, letting of bids, assessing bids, inspection and supervision of construction and reporting to the MOA on the progress being made in construction. The MLG is responsible for local Parish governments and the services provided (e.g., water, sewer and garbage collection). They own and operate the retail Parish markets, and they own some of the land in or near the municipalities where Subterminal Wholesale Distribution Markets may be constructed. All three agencies have worked together in the World Bank/GOJ First Rural Development Project and have cooperated in the project soon to be funded by IDB to reconstruct 17 Parish retail markets. A schedule of key events is shown in Figure 10.

B. Evaluation Plan

The Project shall be reviewed annually by the GOJ and USAID.

As several major Project activities will be initiated during the first year of the Project, the first evaluation shall focus primarily on implementation progress. The second evaluation will be more comprehensive and will include representatives from USAID, AID/Washington, possible outside consultants and the GOJ. By then, the Marketing Division will have been established, two Assembly and Grading Stations constructed and sites selected and contracts let for construction of two Subterminal Wholesale Distribution Markets. The evaluation will assess overall Project performance against stated Project objectives and suggest possible revisions in the Project's implementation. Evaluations at the end of the third and fourth years will follow the same pattern as the second evaluation. Four months after the PACD, the final review will take place to analyze the impact of the Project on the target groups and measure the Project's success/failure in meeting its goals and objectives.

C. Conditions Precedent and Covenants

1. Conditions Precedent to Loan Disbursements

Unless AID shall otherwise agree in writing:

- (a) Prior to any disbursement or issuance of any commitment document under the Project to finance development of a Marketing Division within the Ministry of Agriculture, the Borrower will furnish in form and substance satisfactory to AID:
 - (1) evidence that sufficient space to house the new Marketing Division has been allocated within existing facilities or that new facilities have been acquired;
 - (2) evidence that a Marketing Division Director/Project Manager has been appointed; and,
 - (3) evidence that the existing personnel currently involved in marketing activities within the Ministry of Agriculture have been seconded to the Agricultural Marketing Project.
- (b) Prior to any disbursement or issuance of any commitment document under the Project to finance the construction of each Assembly and Grading Station, the Borrower will furnish in form and substance satisfactory to AID:
 - (1) evidence that a completed socio-technical survey for final site selection has been carried out and that a decision has been reached regarding the form of organization and management for that Station; and,
 - (2) detailed construction plans including cost estimates, drawings and equipment lists.
- (c) Prior to any disbursement or issuance of any commitment document under the Project to finance construction of Subterminal Wholesale Distribution Markets the Borrower will furnish in form and substance satisfactory to AID:
 - (1) evidence that a Limited Liability Company has been established to manage the Subterminal Wholesale Distribution Markets; and,
 - (2) detailed construction plans including cost estimates, drawings and equipment lists.
- (d) Prior to any disbursement or issuance of any commitment document under the Project to finance training outside of Jamaica, the Borrower will furnish in form and substance satisfactory to AID evidence that a system of bonding or some other method has been implemented to ensure that participant trainees will return to their post for a period of time not less than twice the length of time spent in training.

2. Special Covenants for Project Loan Agreement

The GOJ, except as AID shall otherwise agree, shall covenant that:

- (a) Within six months of the signing of the Agreement, the Ministry of the Public Service will create the new positions needed for the Project to meet its implementation goals and the Ministry of Finance will provide the funding needed to cover the recurrent costs of such positions;
- (b) Adequate budget allocations for Project implementation, including sufficient funds for maintenance and operation of the Assembly and Grading Stations and the Subterminal Wholesale Distribution Markets will be provided in a timely manner consistent with implementation schedules developed by the Agricultural Marketing Division;
- (c) Within three months of the signing of the Agreement, a time phased implementation schedule for the remainder of the first Project year will be provided to AID in form and substance satisfactory to AID;
- (d) For each twelve-month period commencing three months after the signing of the Agreement, time phased implementation schedules for each twelve-month period of the Project, each based on the results of the annual evaluation and annual audit of the Project during the previous twelve-month period, shall be furnished to AID in form and substance satisfactory to AID;
- (e) Salaries and international travel of overseas participant trainees will be paid by the GOJ;
- (f) Procedures will be implemented to ensure cooperation of the Ministry of Local Government, Ministry of Works, Ministry of Industry and Commerce, and the Town Planning Unit to enable the Project to meet its implementation goals;
- (g) Within three years of the signing of the Agreement, the Ministry of the Public Service will approve a staffing plan which makes the Marketing Division a permanent part of the Ministry of Agriculture.

Figure 10
 AGRICULTURAL MARKETING PROJECT
 SCHEDULE OF KEY EVENTS

| ACTIVITY | 1979 | | 1980 | | | | 1981 | | | | 1982 | | | | 1983 | | | | 1984 | | | |
|---|------|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|
| | 1 | 2 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1. Project Initiation | | | | | | | | | | | | | | | | | | | | | | |
| 2. Transfer Personnel From INOA to Marketing Division | | | | | | | | | | | | | | | | | | | | | | |
| 3. Team Leader Assignment | | | | | | | | | | | | | | | | | | | | | | |
| 4. Identify and Assign COJ Project/Manager | | | | | | | | | | | | | | | | | | | | | | |
| 5. Recruit Additional Staff for Marketing Division | | | | | | | | | | | | | | | | | | | | | | |
| 6. Order and Receive Five Vehicles for Marketing Division | | | | | | | | | | | | | | | | | | | | | | |
| 7. Order and Receive Miscellaneous Small Equipment for Marketing Division | | | | | | | | | | | | | | | | | | | | | | |
| 8. Extension Activities to Farmers and Market Intermediaries | | | | | | | | | | | | | | | | | | | | | | |
| 9. Planning for Subterminal Wholesale Markets | | | | | | | | | | | | | | | | | | | | | | |
| 10. Establish Limited Liability Company for Management of Subterminal Wholesale Market | | | | | | | | | | | | | | | | | | | | | | |
| 11. Short-term Consultants in Speciality Areas of Marketing, Extension, Communication, and Management | | | | | | | | | | | | | | | | | | | | | | |
| 12. Selection of sites for Subterminal Wholesale Markets | | | | | | | | | | | | | | | | | | | | | | |
| 13. Socio-Technical Surveys and Identification of Areas for Assembly and Grading Stations | | | | | | | | | | | | | | | | | | | | | | |
| 14. Short-term In-country Training | | | | | | | | | | | | | | | | | | | | | | |
| 15. Specific Site Selection for Assembly and Grading Stations | | | | | | | | | | | | | | | | | | | | | | |

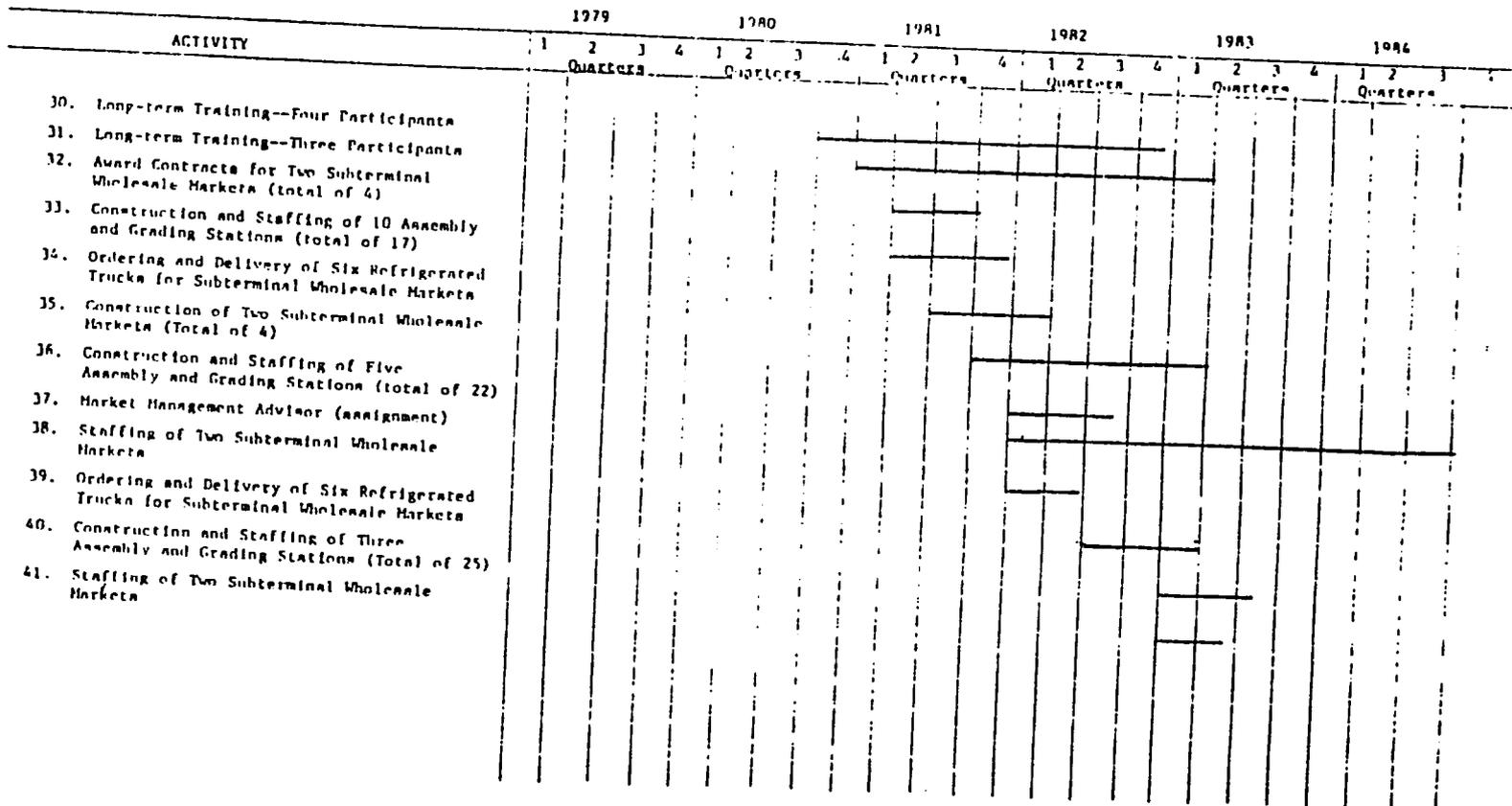
Figure 10
 AGRICULTURAL MARKETING PROJECT
 SCHEDULE OF KEY EVENTS

(Continued)

| ACTIVITY | 1979 | | | | 1980 | | | | 1981 | | | | 1982 | | | | 1983 | | | | 1984 | | | |
|--|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 16. Develop Plans and Blueprints for Assembly and Grading Stations | | | | | | | | | | | | | | | | | | | | | | | | |
| 17. Development of Equipment Lists, Ordering and Delivery of Equipment for the Assembly and Grading Stations | | | | | | | | | | | | | | | | | | | | | | | | |
| 18. Fruit and Vegetable, Livestock Marketing and Market Training Advisors (assignment) | | | | | | | | | | | | | | | | | | | | | | | | |
| 19. Marketing Information Advisor (assignment) | | | | | | | | | | | | | | | | | | | | | | | | |
| 20. Inspection/Quality Assurance Advisor (assignment) | | | | | | | | | | | | | | | | | | | | | | | | |
| 21. Develop Plans and Blueprints for Sub-terminal Wholesale Markets | | | | | | | | | | | | | | | | | | | | | | | | |
| 22. Order and Receive Equipment for Subterminal Wholesale Markets | | | | | | | | | | | | | | | | | | | | | | | | |
| 23. Long-term Training for Three Participants | | | | | | | | | | | | | | | | | | | | | | | | |
| 24. Short-term External Training | | | | | | | | | | | | | | | | | | | | | | | | |
| 25. Order and Receive Six Vehicles for the Marketing Division | | | | | | | | | | | | | | | | | | | | | | | | |
| 26. Construction and Staffing of the Assembly and Grading Stations | | | | | | | | | | | | | | | | | | | | | | | | |
| 27. Award Contracts for Construction of Two Wholesale Subterminal Markets | | | | | | | | | | | | | | | | | | | | | | | | |
| 28. Construction and Staffing of Five Assembly and Grading Stations (Total of 7) | | | | | | | | | | | | | | | | | | | | | | | | |
| 29. Construction of Two Subterminal Wholesale Markets | | | | | | | | | | | | | | | | | | | | | | | | |

Figure 10
 AGRICULTURAL MARKETING PROJECT
 SCHEDULE OF KEY EVENTS

(Continued)



LOGICAL FRAMEWORK
AGRICULTURAL MARKETING DEVELOPMENT

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|--|---|---|---|
| <p><u>Program or Sector Goal:</u></p> <p>To improve the living standards of farmers, consumers and market intermediaries by reducing post harvest losses, increasing producers' share of final price for the product, cutting intermediaries' cost, and providing larger quantities of better quality food to consumers.</p> | <p><u>Measures of Goal Achievement</u></p> <ol style="list-style-type: none"> 1. Farmers' per capita net income - perceived increases. 2. Per capita net income of market intermediaries - perceived increase. 3. Marketing margins - decrease from 68% in 1983 to 60% by 1986 4. Post harvest loss-decrease from 35% in 1982 to 25% by 1987. 5. Cumulative production increases of 5% by 1985. 6. FX savings of \$20 million per year by 1986. | <ol style="list-style-type: none"> 1. Research undertaken by MOA Marketing Division. 2. Statistics from MOA Data Bank. 3. Joint MOA/AID Project Evaluations. 4. GOJ trade statistics. | <ol style="list-style-type: none"> 1. Continued GOJ commitment to project, including agreed financial support. 2. Continued willingness of farmers to work with and accept advice from MOA, including market information. 3. Rational decisions by market intermediaries to utilize system as appropriate. 4. Government stabilization policies will encourage agricultural production. 5. Credit will be available to producers and intermediaries. 6. Factor inputs for production and marketing will be available. |

100

LOGICAL FRAMEWORK (CONTINUED)

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|---|---|--|--|
| <p><u>Project Purpose:</u></p> <p>To initiate the development and implementation of improved marketing practices (post-harvest technology) as a means of reducing post harvest loss (waste, spoilage, nutrient loss and unharvested crops), increase the volume, availability and quality of agricultural and food products, lower the cost of marketing and the ultimate cost per unit of food to the consumers through increased efficiencies of distribution and bring about a greater market orientation in Government policy related to the agricultural sector.</p> | <p><u>End of Project Status (EOPS)</u></p> <ol style="list-style-type: none"> 1. A marketing division has been established within the MOA and is functioning effectively. 2. A National Wholesale Distribution Network consisting of 4 Subterminal Wholesale Distribution Centers and necessary institutional support and linkages has been established and is functioning effectively. 3. 25 Assembly and Grading Stations have been established and institutionalized and are functioning effectively. | <ol style="list-style-type: none"> 1. Joint MOA/AID Project Evaluations. 2. Agricultural census data. 3. Research by Marketing Division Ministry of Agriculture. 4. Statistics from Data Bank, Ministry of Agriculture. 5. Visual observations. | <ol style="list-style-type: none"> 1. Political policies and economic conditions are conducive to the MOA acquiring and/or training Marketing Specialists and retaining them. 2. Continued Government of Jamaica interest in program objectives. 3. Continued Government of Jamaica revenue capability to support program objectives. 4. Ministries of Finance and Public Service make necessary funds, personnel slots and pay scales available. 5. MOA remains institutionally committed to marketing development. 6. Producers and market intermediaries are receptive to marketing development concepts. |

95

LOGICAL FRAMEWORK (CONTINUED)

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS |
|--|--|--|--|
| <p style="text-align: center;"><u>Outputs</u></p> <ol style="list-style-type: none"> 1. Marketing Division in MOA. 2. Marketing Division staff trained. 3. Subterminal Wholesale Distribution Markets constructed 4. Subterminal Wholesale Distribution Market staff trained. 5. Assembly and Grading Stations organized and constructed. 6. Assembly & Grading Stations staff and employees trained. 7. Wholesale intermediaries trained. 8. Producers trained. | <p style="text-align: center;"><u>Magnitude of Outputs</u></p> <ol style="list-style-type: none"> 1. Marketing Division in MOA established and 96 staff appointed (55 professional marketing staff and 41 support staff). 2. 10 MOA Marketing Division receive 2-year external advanced marketing training (20 person years). 3. 12 MOA Marketing Division staff receive 3-month specialized external training (3 person years). 4. 8 SWDMs staff receive 3-month specialized external training (2 person years) 5. 600 persons from MOA Marketing Division SWDMs, AGS, producers and intermediaries receive 3-week in-country marketing training (6 courses per year, 20 persons per course). 6. Marketing extension to participating producers and intermediaries. | <ol style="list-style-type: none"> 1. Monitoring of Project elements by GOJ and USAID. 2. Reports of Marketing Division and MOA. 3. Statistics from Data Bank. 4. Research undertaken by Marketing Division. 5. Market analysis, situation analysis by Marketing Division. Visual observations. 6. Monitoring of wholesale and Parish markets storages, and Assembly and Grading Stations by Marketing Division, Marketing Information and Research Branch | <ol style="list-style-type: none"> 1. Cooperation of JAS Marketing Boards, AMC, MLG, Ministry of Works and other institutions. 2. Cooperation and participation of producers. 3. Cooperation and participation of market intermediaries. 4. Cooperation of PSOJ and private sector firms. 5. People are available and can be identified for training. 6. There is little attrition of trained personnel, producers and intermediaries. |

LOGICAL FRAMEWORK (CONTINUED)

| NARRATIVE SUMMARY | OBJECTIVELY VERIFIABLE INDICATORS | MEANS OF VERIFICATION | IMPORTANT ASSUMPTION |
|--|--|---|--|
| <p style="text-align: center;"><u>Inputs</u></p> <p>(See Budget Summary. Table 1 Page ii)</p> | <p style="text-align: center;"><u>Implementation Target Type and Quantity</u></p> <ol style="list-style-type: none"> 1. 29.5 person years, long term technical assistance. 2. 3 person years, short-term technical assistance. 3. 20 person years long term external training. 4. 5 person years, short term external training. 5. 34.6 person years, short term in-country training. 6. Equipment (vehicles and miscellaneous) and commodities (construction and related equipment, procured, constructed and operational 7. 71 additional Marketing Division staff and 25 present staff assigned to Marketing Division (55 professional marketing staff and 41 support staff). 8. 108 staff and laborers hired and trained for SWDMs. 9. Minimal staff for AGS hired (from rural community) and trained. | <ol style="list-style-type: none"> 1. Project monitoring by GOJ and AID. 2. Project reports. 3. MOA and Marketing Division records. 4. Annual budget submissions and congressional presentations. | <p>Inputs supplied in a timely manner.</p> |

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|---------------------------|---------------------------|-----------------------------|---------------------|
| AID HANDBOOK 3, App 5C(2) | THANKS MEMORANDUM 3:32 | EXPIRE DATE June 7, 1979 | PAGE NO. 5C(2)-1 |
|---------------------------|---------------------------|-----------------------------|---------------------|

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? Yes. See AG Planning PP (532-0061).
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PRODUCT? Yes.

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 634A. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
Project included in FY'79 CP
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
Yes. Included in Sections III.B. and IV.B. of PP
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
None Required.
4. FAA Sec. 611(b); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?
NA
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
Yes. Included as Annex C of PP
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
This Project deals strictly with the institutional and capital infrastructure for marketing of locally produced farm products.

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| 5C(2)-2 | June 7, 1979 | 2:37 | AID HANDBOOK 3, App 5C(2) |
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A.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

The Project will strongly support host country efforts in areas (a) thru (e) as discussed in Sections II and III of PP. The effect on area (f) will be minimal.

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

US private firms will participate in training, technical assistance and supply the bulk commodities.

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

The GOJ is contributing almost half the total cost and much of the local currency cost of the project; the US does not own any Jamaican currency.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar, or competing commodity?

The project is primarily to assist in marketing; increase in production will not be of the type or quantity of crops which will cause substantial injury to U.S. producers or be in surplus on the world market.

B. FINDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 291a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained

The project will: (a) directly involve both the small farmer and the rural poor through improved marketing facilities in rural/small town areas and reduced waste for food and other agricultural products, resulting in better returns for producers and intermediaries and lower prices for consumers;

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| AID HANDBOOK 3, App 5C(2) | TRANS. NUMBER 3:32 | EFFECTIVE DATE June 7, 1979 | FORM NO. 5C(2)-3 |
|---------------------------|-----------------------|--------------------------------|---------------------|

B.1.a.

basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

(b) encourage cooperatives in carrying out marketing functions; (c) involve major self help measures; (d) substitute some better job opportunities for the drudgery of the present role of women in marketing.
(e) N/A

b. FAA Sec. 103, 103A, 104, 105, 106, 107.

Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

It will directly assist both the small farmer and the landless rural poor through improved marketing efficiency and reduced waste for food and other small farm agricultural products.

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or man-made disaster;

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| 5C(2)-4 | June 7, 1979 | 3:32 | AID HANDBOOK 3, App 5C(2) |
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B.1.b.(4).

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. [107] Is appropriate effort placed on use of appropriate technology?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

Yes.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

N/A

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

The project accomplishes these goals as set forth in Sections II and III of the PP.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?

Yes.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Jamaica has a fundamentally sound economy which is being helped out of temporary difficulties by the IMF, IFI's and bi-lateral donors. Jamaica has never defaulted on a government to government loan.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

N/A

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| AID HANDBOOK 3, App 5C(2) | TRANS. MEMO. NO. 3:32 | EFFECTIVE DATE June 7, 1979 | PAGE NO. 5C(2)-5 |
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B.

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102? N/A

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities? N/A

Certification Pursuant to Section 611 (e) of the Foreign Assistance

Act of 1961, as Amended

SUBJECT: Jamaica - Capital Assistance - Agricultural Marketing
Development Loan

I, Glenn Patterson, as Director of the United States AID Mission to Jamaica, having taken into account inter alia, the maintenance and utilization of projects in Jamaica, previously financed or assisted by the United States, do hereby certify that, in my judgement, Jamaica has both the financial capability and the human resources to maintain and utilize effectively the proposed Agricultural Marketing Development Loan.

This judgement is based primarily on the facts developed in the project paper for the proposed loan of \$4.700 million and A.I.D.'s review of the financial assistance previously provided to Jamaica

Glenn Patterson
Director

20 August, 1979

Date

PID Approval Message

The PID approval cable (State 038736 of 14 February, 1978, attached hereto) called for discussion of various policy and design questions in either an interim report or the agriculture sector study then scheduled for the summer of 1978.

However, a substantial delay in completion of the sector study, from the end of FY 1978 to the third quarter of FY 1979, coupled with the necessity for completing the PP by the fourth quarter of FY 1979 in order to be able to utilize such FY 1979 funds as might then be available, made it necessary to compress the process, and rather include full consideration of these questions in the PP itself. Although agreement on this accelerated approach was never formalized, it was tacitly accepted in numerous communications between the Mission and AID/W concerning the sector study and the overall design of the project, as well as preparation of the PP.

The basic issues raised in the PID cable are treated in the PP as follows:

- A. Sector Approach. Abandoned in favor of Agricultural Marketing Development program as set forth and fully elaborated in this pp.
- B. Problems Addressed. The Project Description and technical analysis sections of this PP set forth detailed answers to the questions raised in the PID cable.
- C. Target Group. This matter is addressed at length in both the Beneficiaries section and the Social Soundness Analysis.
- D. Roads. Road construction has been eliminated from the project.
- E. Environmental Concerns. As noted, the Project no longer includes roads or use of agricultural chemicals. Other environmental concerns are covered in the IEE (Annex I)

TELEGRAM

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 FM SECSTATE WASHDC
 TO AMEMBASSY KINGSTON 2776-7-8
 RT
 UNCLAS STATE 038736

AIDAC

E.O. 11652: N/A

IAGS:

SUBJECT: DAEC REVIEW - JAMAICA AGRICULTURAL PIDS (AG SECTOR, AG PLANNING AND AG EDUCATION).

1. SUMMARY: THE DAEC REVIEWED SUBJECT THREE AGRICULTURAL PIDS JANUARY 24, 1978. THE AG PLANNING PID WAS APPROVED FOR INTENSIVE REVIEW LEADING TO A PROJECT PAPER. THE AG SECTOR PID WAS APPROVED FOR DEVELOPMENT OF AN INTERIM REPORT TO BE SUBMITTED UPON COMPLETION OF THE PROPOSED AGRICULTURAL ASSESSMENT. THE AGRICULTURAL RESEARCH, EDUCATION AND EXTENSION PID WAS FOUND TO BE PREMATURE PRIOR TO CARRYING OUT OF TITLE XII BASELINE STUDY OF EXISTING RESEARCH, EDUCATION AND EXTENSION CAPABILITIES IN JAMAICA. A REVISED PID BASED ON THE STUDY RESULTS MAY BE SUBMITTED AFTER STUDY IS COMPLETED. END SUMMARY.

2. AGRICULTURAL SECTOR STRATEGY. IN REVIEWING PIDS FOR CONSISTENCY WITH MISSION STRATEGY FOR AGRICULTURAL SECTOR, THE CURRENT STATUS OF THE SECTOR ASSESSMENT AND AGRICULTURAL STRATEGY WAS DISCUSSED IN SOME DETAIL. THE INTENSIVE AG SECTOR ASSESSMENT UPON WHICH THE STRATEGY WOULD BE BASED WAS DESCRIBED AS ABOUT TO GET UNDERWAY WITH AN ESTIMATED DATE OF COMPLETION IN MID-SUMMER. WHILE IT WAS

CLEAR THAT AGRICULTURAL EDUCATION AND PLANNING COULD ALREADY BE IDENTIFIED AS CRITICAL PROBLEM AREAS, IT WAS NOT EVIDENT THAT MARKETING, PARTICULARLY DOMESTIC MARKETING, WAS THE PRIORITY PROBLEM OF SMALL FARMERS. THE SECTOR ASSESSMENT WILL CLEARLY ESTABLISH THE MAIN CONSTRAINTS TO INCREASING SMALL FARMER PRODUCTIVITY AND INCOME, THEIR RELATIVE IMPORTANCE, AND IF POSSIBLE, THEIR PRIORITY. THE SECTOR ASSESSMENT SHOULD ALSO DESCRIBE THE RURAL POOR AND

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105

Classification

TELEGRAM

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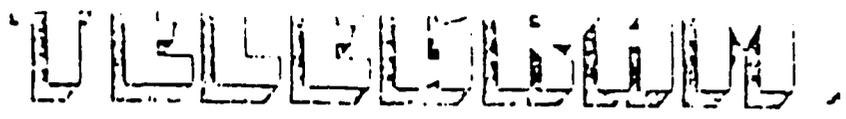
2 PROVIDE A SOCIO-ECONOMIC PROFILE OF THE AID TARGET GROUP. IT WAS ALSO REQUESTED THAT THE AID STRATEGY STATEMENT IN THE SECTOR ASSESSMENT RELATE THE STRATEGIES UNDERLYING THE EXISTING INTEGRATED RURAL DEVELOPMENT PROJECT AND THE PROPOSED AG SECTOR PROJECT TO EACH OTHER AND TO THE GOJ'S AGRICULTURAL STRATEGY. MISSION IS ENCOURAGED TO PROCEED RAPIDLY IN THIS AREA, BUT DAEC FEELS TARGET DATE FOR COMPLETION OF SECTOR ASSESSMENT AND STRATEGY STATEMENT SHOULD ALLOW SUFFICIENT TIME FOR THOROUGH STUDY OF PROBLEMS AND POSSIBLE RESPONSES. UNDER PRESENT CIRCUMSTANCES, DAEC CONSIDERS END OF FY 78 AS REASONABLE TARGET DATE.

3. AG SECTOR LOAN: IN ADDITION TO FUTURE DEVELOPMENT OF AN AGRICULTURAL SECTOR STRATEGY, THE DAEC REQUESTED (AS OUTLINED BELOW) THAT THE RATIONALE FOR THE SECTOR LOAN APPROACH BE CLARIFIED AND QUESTIONED WHETHER ENOUGH WAS KNOWN CONCERNING PRINCIPAL SMALL FARMER PROBLEMS TO AGREE AT THIS TIME ON THE BASIC COMPONENTS OF A SECTOR LOAN. IT WAS AGREED THAT ONCE THE ASSESSMENT (AND STRATEGY) WAS COMPLETED, AN INTERIM REPORT OUTLINING THE AG SECTOR PROJECT SHOULD BE DEVELOPED. IDEALLY, THE SECTOR ASSESSMENT AND INTERIM REPORT WOULD BE SUBMITTED FOR DAEC REVIEW SIMULTANEOUSLY ABOUT OCTOBER. THE INTERIM REPORT SHOULD ADDRESS THE FOLLOWING SPECIFIC DAEC CONCERNS:

-----A. SECTOR APPROACH. - THE DAEC EXAMINED THE REASONS FOR PACKAGING AG ACTIVITIES INTO A SECTOR LOAN. OTHER THAN THE MAGNITUDE OF THE AID RESOURCES INVOLVED IT WAS NOT APPARENT THAT THE USUAL REASON FOR A SECTOR PROGRAM APPROACH EXISTS, I.E. A MAJOR COORDINATED SECTOR-WIDE INITIATIVE BY THE GOJ REQUIRING POLICY AND INSTITUTIONAL CHANGES WHICH AID WISHES TO ENCOURAGE WITH SUBSTANTIAL RESOURCES. AS CURRENTLY PRESENTED, THE PROGRAM APPEARS TO BE A "MARKETING, CREDIT AND EXTENSION LOAN" ("INTEGRATED AG SERVICES") IN THREE GEOGRAPHICAL AREAS, WHICH COULD POSSIBLY BE ACCOMPLISHED ON A PILOT BASIS AT A REDUCED AMOUNT. ALTHOUGH CHANGES MAY BE NEEDED IN CREDIT AND MARKETING POLICIES, IT WAS IMPLIED THAT THESE

COULD BE ACHIEVED WITH A SMALLER AID EFFORT. IN DEVELOPING ITS SECTOR STRATEGY ABOVE, MISSION IS ASKED TO REVIEW THE "PACKAGING OF THE

AID SUPPORTED AGRICULTURAL ACTIVITIES OVER THE NEXT SEVERAL YEARS IN TERMS OF WHAT IT WISHES TO ACCOMPLISH IN THE SECTOR. GIVEN MAGNITUDE OF THE RESOURCES PROPOSED AND THE APPARENT NEED, THE DAEC WOULD LIKE TO ENCOURAGE A SECTOR PROGRAM AIMED AT INCREASING SMALL FARMER PRODUCTIVITY AND INCOME IF GOVERNMENT IS PREPARED TO UNDERTAKE THE INITIATIVE AND THE INSTITUTIONAL BASE EXISTS. OTHERWISE, AN ALTERNATIVE WOULD BE TO UNDERTAKE SMALLER INDIVIDUAL PROJECTS OVER THE NEXT SEVERAL YEARS. THE REASONS FOR THE APPROACH DECIDED UPON SHOULD BE ELABORATED.



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3 -----B. PROBLEMS ADDRESSED - THE DAEC QUESTIONED WHETHER THERE ARE SMALL FARMER PROBLEMS IN JAMAICA OTHER THAN THOSE ADDRESSED BY PID WHICH SHOULD BE ADDRESSED BY A SECTOR LOAN BASED UPON THE CONCLUSIONS OF AG SECTOR ASSESSMENT. IS THERE CLEAR EVIDENCE THAT LACK OF ACCESS TO CREDIT AND INEFFICIENT MARKETING SERVICES ARE THE MOST SIGNIFICANT CONSTRAINTS ON THE TARGET GROUP, OR ARE THERE OTHERS WHICH SHOULD BE ADDRESSED SIMULTANEOUSLY OR IN LIEU OF THESE (E.G. LAND OWNERSHIP AND IMPROVEMENTS, APPROPRIATE TECHNOLOGY, TECHNICAL ASSISTANCE, ETC.)? MISSION REPRESENTATIVE INDICATED AGRICULTURAL PRODUCTION HAD NOT BEEN ADEQUATELY RESPONSIVE TO RELATIVELY HIGH FARM-GATE PRICES. DOES THIS SUGGEST THAT PROJECT SHOULD ALSO FOCUS ON LOWERING PRODUCTION COSTS? FINALLY, IF INCREASED ACCESS TO CREDIT AND MARKETING SERVICES ARE BASIC PROJECT COMPONENTS, IS THE TYPE OF RESPONSE PROPOSED BY PID (I.E. CENTRALIZED COLLECTION AND SERVICE CENTERS) THE MOST APPROPRIATE TO PROBLEMS OF LARGE NUMBERS OF FARMERS WITH LESS THAN FIVE ACRES OF LAND?

-----C. TARGET GROUP - THE INTERIM REPORT SHOULD DESCRIBE THE NATURE AND COMPOSITION OF TARGET GROUP, RELATE IT TO THE DESCRIPTION OF THE RURAL POOR IN THE ASSESSMENT, AND DISCUSS HOW THE SECTOR LOAN WILL REACH AND BENEFIT THE TARGET GROUP. WILL THE TARGET GROUP INCLUDE LANDLESS PERSONS?

-----D. ROADS - IF FARM-TO-MARKET ROADS ARE INCLUDED AS PROJECT COMPONENT, INTERIM REPORT SHOULD DISCUSS WHETHER AND TO WHAT EXTENT THE LACK OF SUCH ROADS IS A MAJOR CONSTRAINT ON SMALL FARMER PRODUCTIVITY AND INCOME. DAEC NOTED THAT FEEDER ROADS IN JAMAICA HAVE TRADITIONALLY BEEN HIGH COST (OVER DOLS. 100,000 PER MILE) AND THE GOJ/MPW HAS RESISTED REDUCING STANDARDS AND USING LABOR INTENSIVE METHODS. BEFORE INCLUDING THIS ELEMENT IN THE INTERIM REPORT, THE MISSION SHOULD DETERMINE WHETHER THERE IS A PRIORITY NEED FOR THESE ROADS AND WHETHER ROADS OF LESSER STANDARD MIGHT BE ADEQUATE TO THE NEED. MISSION SHOULD LOOK INTO EXPERIENCE OF ORGANIZATIONS OTHER THAN PUBLIC WORKS (E.G., FORESTRY DEPARTMENT UNDER AID FORESTRY LOAN,

PARISH COUNCILS, PRIVATE CONTRACTORS, ETC.) IN PROVIDING LOWER COST ROADS. MISSION SHOULD ALSO CONSIDER USE OF FIXED AMOUNT REIMBURSEMENT PROCEDURE FOR ANY ROAD CONSTRUCTION COMPONENT OF PROJECT.

-----E. ENVIRONMENTAL CONCERNS - THE PROJECT REQUIRES MORE DEFINITION BEFORE THRESHOLD DECISION CAN BE MADE. EARLY SUBMISSION OF A REVISED IEE IS ADVISABLE BECAUSE SEVERAL PROJECT COMPONENTS (E.G., ROAD CONSTRUCTION, PESTICIDE AND AGRO-CHEMICAL USE, LAND CLEARANCE) MAY REQUIRE EXTENSIVE DOCUMENTATION IF AN E.A. PROVES NECESSARY. REVISED IEE SHOULD INCLUDE A DESCRIPTION OF THE LAND AREAS TO BE AFFECTED BY PROJECT.



MINISTRY OF AGRICULTURE

HOPE GARDENS,

KINGSTON 6,

JAMAICA

Request for Assistance

PLEASE QUOTE

REFERENCE No. _____

July 23, 1979

Rural Development Office
USAID/Jamaica

Gentlemen:

Re: Agricultural Marketing Development Project

With reference to the above project, the Ministry of Agriculture requests the assistance of the United States Agency for International Development in upgrading the agricultural marketing structure in Jamaica.

The project has already been approved by the Pre-selection Committee of the Ministry of Finance and Planning.

Sincerely,

D.H. Stone
Permanent Secretary

108



MINISTRY OF AGRICULTURE

HOPE GARDENS,

KINGSTON 6.

JAMAICA

PLEASE QUOTE

REFERENCE No.

OFFICIAL FILE

7th August, 1979.

Dr. Donor M. Lion,
Mission Director,
U.S.A.I.D. Mission to Jamaica,
2 Oxford Road,
Kingston 5.

Dear Dr. Lion,

Thank you for your letter of July 9, 1979, dealing with the Marketing Project. You stated in your letter and I quote -

"Washington, as well as U.S.A.I.D. here in Jamaica, will need to be satisfied that this specific project, a major effort to reform, restructure and expand agricultural marketing in Jamaica is -

- (1) Consistent with Jamaica's agricultural and marketing goals and development plans; and
- (2) Wholly compatible with Jamaica's marketing strategy and policy".

This is to inform you that Cabinet at its meeting of the 30th July, 1979, accepted and approved the "Policy and Strategy" proposals submitted by my Ministry as the basis for our National Policy. Attached please find a copy of the document.

I trust this will meet with your Mission's approval, both here and in Washington.

Thank you for your co-operation, and I now look forward to signing the Project Document.

Yours truly,


Seymour Mullings,
Minister of Agriculture

THE NATIONAL AGRICULTURAL AND FOOD MARKETING POLICY

Policy Statement

The National Agricultural and Food Marketing Policy is to foster the development of an Agricultural and Food Marketing System in Jamaica capable of efficiently distributing required factor inputs to producers, capable of stimulating an expansion of production of the type, volume and quality of commodities demanded, and capable of distributing the products of agriculture from the producers to the consumers in a manner that will achieve the greatest economic and social benefit.

Policy Goals

In particular the long term Agricultural and Food Marketing Policy Goals are:-

1. to sustain and further stimulate the food production achievements attained and expected;
2. to achieve equitable distribution of the end value of food produced;
3. to maintain reasonable price stability to producers and consumers;
4. to encourage investment and capital formation within the agricultural and food marketing system;
5. to create greater opportunities for employment;
6. to achieve the most complete utilization of the products of agriculture; and
7. to enhance agriculture's role in improving the balance of payments.

THE NATIONAL AGRICULTURAL AND FOOD MARKETING STRATEGY

The current agricultural and food marketing system is not conducive to sustaining and further stimulating the agricultural production achievements attained and those expected. It is the belief of the Government, however, that the existing marketing system can be made to work efficiently and to become technologically dynamic. The structures and the intermediaries within the system have the ability to marshal substantial quantities of labor, entrepreneurial talent and capital. It is the role of Government to facilitate increased efficiency of operation and more rapid technological change. This will be accomplished by providing encouragement and assistance to intermediaries in the agricultural marketing system to make fuller use of labor, entrepreneurial talent and capital.

Strategy Objectives

The intermediate term objectives of the National Agricultural and Food Marketing Strategy are:-

1. to achieve a significant increase in self-sufficiency in agricultural and food production and decrease imports of agricultural and food products of a type that can be produced in Jamaica;
2. to increase exports of agricultural and food products both of the type of products that are now being exported and the type for which a demand exists, but are not now being exported on a sizeable scale;
3. to enhance agriculture as an earner of foreign exchange;
4. to greatly improve the availability, quality and quantity of agricultural and food products to Jamaican consumers;
5. to expand the production and distribution, and the acceptance by consumers, of domestically produced products that can replace costly imported products;
6. to initiate and assist in the restructuring of the marketing system resulting in an efficient system with adequate regulations to maintain optimum performance;

7. to develop a broad post-harvest technology based upon which to:
 - (a) establish an expanding agricultural and food export industry;
 - (b) establish a sound processing industry; and
 - (c) enhance the quality of products on the domestic market;
8. to provide marketing facilities to enhance the efficient assembly and distribution of agricultural and food products;
9. to provide an extensive market news/information/intelligence system to stimulate overall agricultural and food production and efficient distribution; and
10. to assure the provision of organizational, operational, technical and financial assistance to all segments of the marketing system to help them achieve more rapid development.

Strategic Measures

1. The Ministry of Agriculture will assume all responsibility for the marketing of agricultural and food products.
2. Establishment of a Marketing Division within the Ministry of Agriculture to:
 - a) provide a market information/intelligence service,
 - b) provide a well-defined system to grades and standard,
 - c) provide continuous market regulations to deal with grades and standards, market conduct and phyto-sanitary standards,
 - b) provide direct expert assistance to the marketing system to upgrade post-harvest technology. (grading, packing, handling, storage, transportation and processing) and harvesting and handling by intermediaries producers and producer group,
 - e) undertake major programme of market research and extension of research results to intermediaries, producers, consumers and government agencies,

3. Rebuild and/or establish modern retail market facilities in the parishes and encourage intermediaries (higglers) to operate in the facilities where weights, measures, grades and standards and modes of transportation can be regulated and price, quantity and quality of produce can be monitored.
4. Establish a modern wholesale distribution system consisting of four sub-terminal markets and one terminal market to facilitate the total distribution of food product in the country; including the provision of storage facilities.
5. Develop, with the appropriate institutions, a system of credit available to market intermediaries.
6. Rationalize the transportation system and further develop the use of railway in shipping food products.
7. Assist producers and interested parties in establishing grading, packing and storage facilities in producing areas.
8. Establish an agency within the Ministry of Agriculture such as a Stabilization Board, which can be specifically funded by Government to provide for price stabilization, surplus removal, market guarantees and other Governmental policy initiatives, assuming this role from the Agricultural Marketing Corporation; and
9. Develop and assist in implementing a plan to restructure and revitalize the Agricultural Marketing Corporation to better provide vital wholesale distribution functions and to serve the hotel, restaurant and institutional trade (H.R.I). The Agricultural Marketing Corporation, as one of the major intermediaries in the marketing system, would operate from the terminal and sub-terminal markets.

18th July, 1975.

113

TECHNICAL ASSISTANCE JOB DESCRIPTIONS

Team Leader - Five Years

The Team Leader will be the counterpart to the Director of the Marketing Division with a tour extending throughout the term of the Project. The Team Leader will:

- 1) assist and advise the Director of the Division in the organization and implementation of the Project,
- 2) provide guidance, direction, counseling, assistance, supervision and coordination to the other technical advisors,
- 3) provide liaison between USAID/Jamaica and the MOA,
- 4) be directly responsible, with the Director, for the planning, organization, construction and functioning of the Subterminal Wholesale Distribution Markets and the Assembly and Grading Stations,
- 5) assist the Director in the organization, establishment and direction of the Marketing Division, and
- 6) provide counseling and advice on agricultural and food marketing policy to the MOA and other ministries or organizations as requested.

Fruit and Vegetable Marketing Advisor - Five Years

The Fruit and Vegetable Marketing Advisor, under the general supervision of the Team Leader, will assist and advise the Assistant Director of the Marketing Development Branch and the Head of the Commodities Unit in all matters dealing with the marketing of fruits, vegetables, root crops, flowers, ornamentals and other horticultural and special crops, during a tour extending throughout the term of the Project. This advisor will also:

- 1) work directly with the Fruit and Vegetable Marketing Specialist of the Commodities Unit,
- 2) work closely with the Heads of the Market Structure Unit and the Agricultural Export and Development Unit and their staff, assisting them in their program of activities to initiate and carry forward activities related to the commodity area,

- 3) assist in in-service training programs and marketing extension activities related to fruit and vegetable marketing,
- 4) assist in training programs with the coordination of the Training Officer and suggest candidates for external training programs,
- 5) assist the Marketing Information and Research Branch in initiating and carrying forward research and in analyzing marketing data and preparing periodic market reports and situation and outlook reports,
- 6) assist the Quality Assurance Branch in developing grades and standards and procedures for inspection of fruits, vegetables, flowers and other horticultural products,
- 7) develop and maintain associations with local and external agencies for pertinent information related to fruit and vegetable marketing,
- 8) liaise with regional field officers and provide assistance and guidance, and
- 9) assist the Team Leader and the Director in the planning and implementing of the three elements of the Project.

Livestock and Animal Products Marketing Advisor - Five Years

The Livestock and Animal Products Marketing Advisor, under the general supervision of the Team Leader, will assist and advise the Assistant Director of the Marketing Development Branch and the Head of the Commodities Unit in all matters dealing with the marketing of livestock, meat and meat products, dairy and dairy products, and fish during a tour extending throughout the term of the Project. This advisor will also:

- 1) work closely with the Livestock and Animal Products Specialist of the Commodities Unit,
- 2) work closely with Heads of the Market Structure Unit and the Agricultural Export and Development Unit and the staff of each Unit, assisting them in their program of activities and in initiating and carrying forward activities related to the commodity area,
- 3) assist in in-service training programs and marketing extension activities related to livestock and animal products,
- 4) assist in training programs with the coordination of the Training Officer and suggest candidates for external training programs,

- 5) assist the Marketing Information and Research Branch in initiating and carrying forward research and in analyzing marketing data and preparing periodic market reports and situation and outlook reports,
- 6) assist the Quality Assurance Branch in developing grades and standards and procedures for inspection,
- 7) develop and maintain association with local and external agencies for pertinent information related to livestock, animal products and fish,
- 8) liaise with regional field officers and provide assistance and guidance, and
- 9) assist the Team Leader and the Director in planning and implementation of the three elements of the Project.

Market Information Specialist - Three Years

The Market Information Specialist, under the general supervision of the Team Leader, will assist and advise the Assistant Director of the Marketing Information and Research Branch on all matters dealing with market information and intelligence and marketing research during a tour commencing the beginning of year one and terminating at the end of year three of the Project. The advisor will also:

- 1) work closely with the Heads of the Market Information Unit and the Research Unit and their staff in assisting them to initiate and carry forward a full marketing information program consisting of monitoring markets, collecting data on storage stocks, processor stocks, and other data, analyses, and the release of daily market reports in addition to the publication of periodic situation and outlook reports and other market reports,
- 2) assist in initiating, with the cooperation of the commodity advisors, and carrying forward a program of commodity and market structure research,
- 3) assist in in-service training programs related to market information,
- 4) assist in training programs with the coordination of the Training Officer and suggest candidates for external training,
- 5) develop and maintain association with local and external agencies for pertinent information related to market information,
- 6) liaise with regional market, monitor field officers and provide assistance and guidance, and

- 7) assist the Team Leader and the Director in planning and implementation of the three elements of the Project.

Inspection/Quality Assurance Advisor - Four Years

The Inspection/Quality Assurance Advisor, under the general supervision of the Team Leader, will assist and advise the Assistant Director of the Inspection and Quality Assurance Branch on all matters dealing with grades and standards, market regulation, phyto-sanitary standards and other factors necessary to assure consumers a reasonable standard of product quality and safety and producers and intermediaries with a sound base of formal and standardized grades and standards on which to base trade during a tour commencing at the beginning of year one and terminating at the end of year four of the Project. In addition, the advisor will:

- 1) work closely with the Heads of the Inspection and Enforcement Unit and the Standards Development Unit,
- 2) work closely with the commodity specialists in developing the inspection and quality program,
- 3) assist in in-service training programs related to inspection and quality assurance, and suggest candidates for external training,
- 4) develop and maintain association with local and external agencies for pertinent information related to inspection and quality assurance,
- 5) liaise with regional marketing inspection field officers and provide assistance and guidance, and
- 6) assist the Team Leader and the Director in the planning and implementation of the three elements of the Project.

Marketing Training Advisor - Five Years

The Marketing Training Advisor, under the general supervision of the Team Leader, will work directly with the Marketing Training Officer in the Support Services Unit, and in close cooperation with the Training Division of the MOA in planning, implementing, and conducting in-country training programs and will coordinate, with the Team Leader and other advisors on the Team, the external training of recommended and approved candidates during a tour extending throughout the term of the Project. In addition, this advisor will:

- 1) work with, and be assisted by, all members of the Advisory Team and the Staff of the Division in developing the marketing training program,
- 2) develop and maintain association with local and external agencies for pertinent information related to marketing training, and
- 3) assist the Team Leader and the Director in the planning and implementation of the three elements of the Project.

Market Management Advisor - Two-and-a-Half Years

The Market Management Advisor, under the general supervision of the Team Leader, will assist and advise the Assistant Director of the Marketing Development Branch and the Head of the Market Structure Unit in matters dealing with wholesale and retail management during a two-and-one-half year tour of duty commencing mid-year of year three just prior to the completion of the first Subterminal Wholesale Distribution Market. The advisor will also:

- 1) work closely with the Heads of the Commodities Unit and the Agricultural Export and Development Unit and the staff of each Unit, assisting them in their program of activities, concentrating on the establishment and smooth operation of the Subterminal Wholesale Distribution Markets, organizing, training and developing procedures of operations,
- 2) assist in in-service training programs and marketing extension activities,
- 3) assist in training programs in cooperation with the Training Officer and suggest candidates for external training programs, and
- 4) assist the Team Leader and the Director in the planning and implementation of the three elements of the Project, but in particular the Subterminal Wholesale Distribution Markets.

Consultants (One Month to Three Months, as Required)

The 36 person-months of short term assistance will be utilized as required to supplement and complement the Team Advisors. They will be requested as problems occur and as various points in the Project are reached requiring some special technical knowledge of a particular field. The technical areas include storage, processing, grading and packing systems, architecture, wholesale distribution markets, exporting and market administration/institutional development.

**GOVERNMENT OF JAMAICA
MINISTRY OF WORKS**

**CONDITIONS OF CONTRACT,
BILLS OF QUANTITIES AND SPECIFICATIONS**

for the construction of a

MARKET

at

GRANGE HILL

in the Parish of

WESTMORELAND

DESIGN TEAM

MINISTRY OF WORKS
A. R. P. Unit
Room 2B
Hugley Park Plaza
Kingston 10

In association with

STOPPI CAIRNEY BLOOMFIELD
Quantity Surveyors
4 Ellesmere Road
Kingston 10

Page No.

INSTRUCTIONS TO TENDERERS

CONTRACT (blue)

| | |
|-------------------------|------------|
| ARTICLES OF AGREEMENT | C.1 - C.2 |
| INDEX TO CONDITIONS | C.3 - C.4 |
| CONDITIONS OF CONTRACT | C.5 - C.26 |
| ABSTRACT OF PARTICULARS | C.27 |

BILLS OF QUANTITIES

| | |
|--------------------------------------|------------------|
| GENERAL SUMMARY | G.S./1 |
| GENERAL CONDITIONS AND PRELIMINARIES | P.1 - P.17 |
| MARKET BUILDING | M.B./1 - M.B./17 |
| WELFARE BLOCK | W.B./1 - W.B./17 |
| EXTERNAL WORKS | E.W./1 - E.W./8 |
| DAYWORKS | |

LIST OF BASIC PRICES OF MATERIALS

SCHEDULE OF P.C. AND PROVISIONAL SUMS

| | |
|----------------|------------|
| SPECIFICATIONS | S.1 - S.37 |
|----------------|------------|

ABSTRACT OF PARTICULARS

| | <u>Condition(s)</u> | |
|--|---------------------|---|
| Proposed Date for Commencement of Works | 10 | |
| Period for Completion of Works | 10,22 | |
| Liquidated Damages per Working Day | 23 | |
| Period of Maintenance | 30 | SIX (6) MONTHS |
| Period of Interim Certificates | 40 | MONTHLY |
| Period for Honouring Interim Certificates | 40 | FOURTEEN (14) DAYS |
| Percentage of Certified Value Retained | 40 | TEN PER CENT (10%) |
| Limit of Retention Money | 40 | FIVE PER CENT (5%) OF THE CONTRACT SUM |
| Percentage of Value of Goods and Materials on Site Certified | 40 | EIGHTY PER CENT (80%) |
| Performance Bond | | TWENTY PER CENT (20%) OF THE CONTRACT SUM |

A Site Location

The proposed works are to be erected on the site of the existing market building on the main road from Frome to Little London at the junction with the road to Glasgow.

B Access to the Site

Access to the site is from the main road to Glasgow.

C Description of the Works

This contract comprises the site preparation for and the erection of a single storey market with accommodation for 162 fruit and vegetable; 22 dry goods; 10 meat and 3 fish vendors together with the erection of a welfare block and drainage, sewage disposal and external works.

Construction is of pre-fabricated steel portal framing with aluminium roofing, concrete floors, block walls to enclosed areas, chain link fencing to open sides, cold room installation, installation of stalls manufactured by specialist sub-contractors, electrical, plumbing, drainage and painting works.

The Contractor is recommended to visit the site to ascertain the nature and extent of the proposed works, means of access thereto facilities for storage and offices and all other matters liable to affect his tender. No claim or extra charge made on the basis of misunderstanding or lack of knowledge in these respects will be entertained.

Carried to Collection

\$

122

Agricultural Marketing Project

| | <u>Note:</u> No allowance has been or will be made for working space and the Contractor should allow here or in his rates for any additional monies he requires for such work. | | |
|---|--|-----|----------|
| A | Excavate over site average 6" deep and get out to remove vegetation and spread and level over site. | 924 | Yds. Sup |
| B | Excavate to reduce levels and get out. | 745 | Yds. Cub |
| C | Excavate foundation trench not exceeding 5'0" deep commencing at strip level and get out. | 29 | Yds. Cub |
| D | Excavate for stanchion base not exceeding 5'0" deep ditto. | 19 | Yds. Cub |
| E | <u>Extra over</u> excavation for breaking up rock (PROVISIONAL). | 153 | Yds. Cub |
| F | Return fill and ram selected excavated material around foundations. | 12 | Yds. Cub |
| G | Load up excavated material and cart away to a tip to be provided by the Contractor. | 775 | Yds. Cub |
| H | Approved marl filling 6" thick well rolled and compacted in making up levels under floors including blinding to receive concrete. | 909 | Yds. Sup |
| | <u>Reinforced concrete (3,000 p.s.i.) in:</u> | | |
| I | Foundations. | 11 | Yds. Cub |
| J | Stanchion bases. | 14 | Yds. Cub |
| K | Stiffener. | 1 | Yd. Cub |
| L | 6" Bed laid in bays not exceeding 400 feet super, including all necessary formwork to edges and between bays and finished with a steel power float finish. | 909 | Yds. Sup |
| M | <u>Extra over</u> 6" bed for thickening 6" deep x average 9" wide to form toe including extra formwork. | 123 | Yds. Run |
| N | <u>Extra over</u> 6" bed for forming 6" diameter half round channel to slight falls, including all necessary thickening and excavation in compacted fill, ditto. | 10 | Yds. Run |
| O | <u>Extra over</u> 6" bed for forming floor duct 12" wide x 6" (average) deep, including all necessary excavation in compacted fill and thickening average 6" deep x 6" wide on both sides to form sides to duct. | 35 | Yds. Run |

Carried to Collection

\$

| <u>Section</u> | <u>Trade</u> | <u>Page No.</u> |
|----------------|-----------------------------|-----------------|
| 1.00 | Excavation & Earthworks | S.1 |
| 2.00 | Concreting | S.3 |
| 3.00 | Masonry | S.11 |
| 4.00 | Roofing | S.13 |
| 5.00 | Carpentry & Joinery | S.14 |
| 6.00 | Hardware & Metalwork | S.16 |
| 7.00 | Plastering, Paving & Tiling | S.18 |
| 8.00 | Plumbing | S.20 |
| 9.00 | Painting | S.24 |
| 10.00 | Drainage | S.27 |
| 11.00 | External Works | S.31 |
| 12.00 | Electrical Works | S.32 |

124.

1.01 Inspection

The Contractor shall give reasonable notice to the Architect whenever it is intended to cover any work or materials and in default of such notice shall, if required by the Architect, uncover such work or materials at his own expense.

All excavations shall be inspected by the Architect and/or Engineer and no concrete shall be poured or foundations placed until the inspection is complete and approval given in writing to the Main Contractor.

1.02 Trees, Scrub and Roots

The Contractor shall remove and dispose of all trees, scrub growth and roots now growing in the Site over the area to be occupied by the building, sidewalks, entrance road and parking areas.

1.03 Topsoil

All topsoil shall be stripped over the area on which construction or grading takes place. This topsoil shall be carefully stockpiled to be re-used for landscaping on completion of the building operations.

1.04 Excavation

The quantities of excavation, filling and ramming, wheeling, spreading and levelling surplus excavated material are calculated from the net measurements before excavating and the Contractor shall make allowances in his rates for increase in bulk.

The rates for excavation shall include for excavating in whatever nature of ground may be found to exist, removing stones, boulders, tree roots up to 6" diameter and any other obstructions encountered.

The rates for filling and ramming, for wheeling, spreading and levelling or grading and for disposal of surplus excavated material shall include for any double handling required. (See also 1.08).

Whenever excavations are carried to greater depths than are shown on the Drawings (including uneven bottoms or soft spots) they shall be filled to the proper level with broken stone or gravel for non-bearing lightweight structures or with concrete (2,000 p.s.i.) under load bearing footings carrying concentrated loads.

Excavation beyond the limits of the Drawings if required by the nature of the soil or by existing conditions not indicated on the Drawings will be paid for as an extra in accordance with unit prices established by the Contract.

The rates for excavation shall include for ramming all bottoms before any concrete is placed. The bottom and sides of excavations for foundations including tie beams shall be carefully cut so that when foundation reinforcement is placed the correct concrete cover is allowed to the bars.

The sides of the excavations if necessary shall be timbered and shored in such a way as may be sufficient to secure them from falling in, and the timbers shall be maintained as long as necessary. Prices shall include for any necessary timbering and shoring of excavations.

Initial Environmental Examination

Project Location : USAID Jamaica
Project Title : Agricultural Marketing
Funding (FY and Amount) : \$2,737,000 Grant, FY 1980
\$9,232,000 Loan, FY 1979
Life of Project : Five Years (FY 1979 - FY 1984)
IEE Prepared by : Paul Wenger, CRDO
Date : August 15, 1979

Environmental Action Recommended: It is recommended that this project receive a negative determination that no additional environmental examinations be required.

Mission Director's
Concurrence

: *Donor M. Lion*
Donor M. Lion, Director
USAID/JAMAICA

Date

: August 16, 1979

Assistant Administrator's
Decision

: _____
Approved

: _____
Disapproved

Date

: _____

- 126 -

I Examination of Nature, Scope and Magnitude of Environmental Impacts

A. Description of Project

A Marketing Division in the Ministry of Agriculture will be established and strengthened through technical assistance, training, commodity support, and additional personnel so that it will have the capacity to undertake activities in market development, information, research, training and extension.

In order to achieve efficiencies in distribution, reduce post harvest losses, expand markets for locally produced food crops, and increase availability of graded agricultural products, four Subterminal Wholesale Distribution Markets are planned under the Project. Given the size of the island, its topography, and geographical distribution of production and retail centers, it has been determined that four such markets would provide the most efficient coverage.

To achieve optimum marketing efficiency, farm produce should be assembled, graded and packed for distribution as near to the farmgate as possible. The Project provides for establishing 25 Assembly and Grading Stations in selected producing areas. Preliminary analysis of the marketing system and production regions has indicated a need for and feasibility of establishing about six Stations in the general vicinity of each Subterminal Wholesale Distribution Market.

B. Identification and Evaluation of Environmental Impacts

The institutional development of the Ministry of Agriculture Marketing Division will, of course, have no direct environmental impact, but the construction of the Subterminal Wholesale Markets and Assembly and Grading Stations will. Since each of these facilities represents a concentration point for agricultural products, proper waste disposal and insect/rodent control measures must be included in their plans.

The FAO paper "Planning of Urban Wholesale Markets for Perishable Food," is being used as a guide for this project. The paper stresses the need for providing satisfactory waste disposal and insect/rodent control facilities in the development of infrastructure for markets. The Government has adopted satisfactory standard procedures for the disposal of solid and water borne waste, rodent control and insect protection. Adequate funds have been provided for site development and construction of each market in an environmentally sound manner.

Standpipes for washdown of the market area will be provided. Concrete surfaces within the market buildings and hardstand (asphalt) surfaces in the outside market area will be sloped to drain. Where adequate sewage disposal systems are not available, septic tanks and tile fields or other environmentally satisfactory systems will be provided. Adequate water supply will be a criterion for site acceptance. Insect protection and rodent barriers are being included in other markets being designed and constructed for the Ministry of Agriculture and will be included in the final design of the project markets and service centers.

Market produce will be inspected for sanitation and quality control. The markets and employees will be inspected by trained health officers. Proper toilets and adequate bathrooms will be provided to support this effort.

The indirect environmental impact will be wholly beneficial in that improvement of the Jamaican marketing system will reduce the health hazards of casually discarded agricultural surplus products and will enable environmental considerations to be weighed more accurately in the preparation of future agricultural marketing activities. To this end, appropriate portions of the training and technical assistance under the project will concern themselves with planning to maximize environmental benefits and minimize environmental damage from activities intended to assist in agricultural marketing development.

It should be noted that the overall Government of Jamaica attitude toward environmental considerations is strongly positive. The Ministry of Mining and Natural Resources has an active department of environmental concerns in the area of natural resources, the Ministry of Health and Environmental Control is active in the areas of health and sanitation, and the Ministry of Agriculture has demonstrated a high degree of sensitivity to environmental considerations in the planning of production as well as marketing projects.

II Recommendation for Environmental Action

In view of the planning that has taken place for avoidance of adverse environmental consequences from this project, coupled with the expectation of positive environmental benefits, it is recommended that this project receive a negative determination and that no further environmental examinations be required.

INITIAL ENVIRONMENTAL EXAMINATION
 JAMAICA AGRICULTURAL MARKETING IMPROVEMENT

A. LAND USE

| | N | L | M | H | U |
|--|---|---|---|---|---|
| 1. Does the project change the character of the land through: | | | | | |
| a. Erosion _____ | x | | | | |
| b. Excavation and/or grading <u>(Properly engineered and supervised)</u> | | x | | | |
| c. Change in animal or plant habitats _____ | x | | | | |
| d. Modification of land use <u>(Physical improvement)</u> | | x | | | |
| e. Increasing concentration/ population _____ | x | | | | |
| 2. Potential natural disasters _____ | x | | | | |
| 3. Unplanned roadside activity (e.g. overgrazing) _____ _____ | x | | | | |
| 4. Other factors _____ _____ | x | | | | |

B. WATER RELATED IMPACTS

| | N | L | M | H | U |
|--|---|---|---|---|---|
| 1. Does the project change the quality of water resources through: | | | | | |
| a. Drainage pattern <u>(Drain fields to be provided)</u> | x | | | | |

- N - No environmental impact
- L - Little environmental impact
- M - Moderate environmental impact
- H - High environmental impact
- U - Unknown environmental impact

- b. Modification of flood patterns _____
- c. Water table change _____
- d. Salinity modification _____
- e. Pollution of adjacent waters

- f. Induce sedimentation of adjacent waters _____
- g. Ecological balance _____
- h. Other factors _____

C. ATMOSPHERIC

- 1. Does the project induce atmospheric changes through:
 - a. Pollution (during construction e.g. dust)

 - b. Pollution (vehicle generated e.g. dust, exhaust)

 - c. Air pollution (cargo generated e.g. chemical, asbestos, phosphates, etc.)

 - d. Noise pollution _____
 - e. Other factors _____

D. NATURAL RESOURCES

- 1. Does the project change the natural resources balance through:
 - a. Planned and unplanned exploitation

| | N | I | M | H | U |
|--|---|---|---|---|---|
| b. Modification of flood patterns | x | | | | |
| c. Water table change | x | | | | |
| d. Salinity modification | x | | | | |
| e. Pollution of adjacent waters | | | | | |
| f. Induce sedimentation of adjacent waters | x | | | | |
| g. Ecological balance | x | | | | |
| h. Other factors | x | | | | |
| 1. Does the project induce atmospheric changes through: | | | | | |
| a. Pollution (during construction e.g. dust) | x | | | | |
| b. Pollution (vehicle generated e.g. dust, exhaust) | x | | | | |
| c. Air pollution (cargo generated e.g. chemical, asbestos, phosphates, etc.) | | | | | |
| d. Noise pollution | x | | | | |
| e. Other factors | x | | | | |
| a. Planned and unplanned exploitation | x | | | | |

b. Utilization of limited resources for construction

c. Other factors _____

N L M H U

| | N | L | M | H | U |
|---|---|---|---|---|---|
| b. Utilization of limited resources for construction | | | | | |
| _____ | X | | | | |
| c. Other factors _____ | X | | | | |
| _____ | | | | | |
| E. CULTURAL | | | | | |
| 1. Does the project affect the culture through: | | | | | |
| a. Changes in traditional cultural values | | | | | |
| _____ | X | | | | |
| b. Alter physical symbols _____ | X | | | | |
| c. Alter traditional modes of transportation _____ | X | | | | |
| d. Alter traditional living patterns through increased mobility changes in family structure | | | | | |
| _____ | X | | | | |
| e. Other factors _____ | X | | | | |
| _____ | | | | | |
| F. SOCIOECONOMIC | | | | | |
| 1. Does the project affect socioeconomic conditions through: | | | | | |
| a. Changes in ownership/ land values/ tenure | | | | | |
| (Improves small farm viability) | | | | | |
| _____ | X | | | | |
| b. Changes in market patterns (local, natural, regional) | | | | | |
| (Better product flow) | | | | | |
| _____ | | X | | | |
| c. Increase demand of services (e.g. public and private automotive, water supplies, health, etc.) | | | | | |
| (Higher standard of living) | | | | | |
| _____ | X | | | | |

